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# RESEARCH BULLETIN



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**The Institute of Cost Accountants of India**  
(Statutory body under an Act of Parliament)



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The CMA professionals would ethically drive enterprise globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting.

*Vision Statement*

The Institute of Cost Accountants of India would be the preferred source of resources and professionals for the financial leadership of enterprises globally.

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**CMA Avijit Goswami**

Chairman - Research, Journal & IT Committee

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## *Foreword*

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Research and innovation contributes directly to level of prosperity and the welfare of individuals and society at large. Research must be methodical and should follow a series of steps and a firm standard protocol. Any type of 'real life' research, whether scientific, economic or historical, requires some kind of interpretation and an opinion from the researcher. This opinion is the underlying principle, or question, that ascertains the nature and type of experiment.

Thus, it gives me an immense pleasure to present esteemed Research Bulletin of the institute, Vol.42, No. II, July, 2016 issue. This issue is non-theme based.

We mainly publish articles related to various blazing topics of Cost and Management issues so that our readers remain informed and updated to the latest developments in the cost and management accounting principles and practices, consequently can incorporate such changes for sustained vitality of their industry and other economic activities.

Wish you all a happy reading and hope you would find it to be an extremely useful tool to enrich your knowledge base.

**CMA Manas Kumar Thakur**

President

The Institute of Cost Accountants of India



## *Chairman's Communiqué*

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It is a privilege for me to announce the release of Research Bulletin, Vol.42, No. II, July, 2016 issue. Our Research Bulletin mainly emphasizes on pragmatic research articles and has a much wider reader base consisting of academicians, researchers, professionals and practitioners.

This publication brings you in-depth research insights on a wide range of topics on contemporary issues like Banking Stocks, Non-Performing Assets (NPA) Management, Business Risk, Micro-finance, Capital Structure, Stock Market, Limited Liability Partnership (LLP), Automobile industry, Financial Integration, etc. well-written by researchers, academicians and professionals.

I take this opportunity to express my gratitude for my fellow members of the Research, Journal and IT Committee, esteemed members of the Editorial Board, the eminent contributors and the entire research team of the Institute for their sincere effort to publish this volume in time.

The readers are invited to tender their valuable feedback at [research.bulletin@icmai.in](mailto:research.bulletin@icmai.in) towards enrichment of Research Bulletin.

Suggestions for improvement of this Bulletin shall be highly appreciated.

### **CMA Avijit Goswami**

Chairman, Research, Journal & IT Committee

The Institute of Cost Accountants of India





## *Editor's Note*

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Greetings!!!

Effective cost management is the central measure of accountability for business leadership. Cost management includes effective strategy implementation as well as providing the resources and process discipline to enable and ensure the highest possible level of quality, reliability and productivity at reasonable cost. It is not only about “cutting cost.” Rather, cost management is the process of optimizing performance. It is as much strategic as it is operational. The most important principle of effective cost management is leadership’s understanding and acceptance of the reality that the majority of all organizational cost is structural, i.e., costs are built into an organization by management systems and management decisions. This present volume of Research Bulletin, Vol.42, No.II, July 2016 issue comprises of various blazing topics like NPA Management, Capital Structure, Microfinance, Financial Integration, Stock Market, etc. on Cost and Management issues would surely keep informed the readers about the present scenario.

We publish both theme based and non theme based articles on the contemporary issues. Inputs are mainly received both from academicians and the corporate stalwarts. Our attempt is to draw attention towards environmental, social, economical and market-related issues, so that the researchers and decision-makers can enrich their knowledge base and can take strategic decisions deliberately.

We are extremely happy to convey that our next issue of Research Bulletin, Vol.42, No. III would be published in October, 2016 based on the theme “Companies Act 2013”.

We look forward to constructive feedback from our readers on the articles and overall development of the Research Bulletin. Please send your mails at [research.bulletin@icmai.in](mailto:research.bulletin@icmai.in). We express gratitude to all the contributors and reviewers of this important issue and wish our readers get plenty of academic inputs from the articles.

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# A Study of Banking Stock in India and an Appropriate Model for Prudent Investment

P.R. Ramakrishnan  
Subhendu Dey  
Badri Toppur  
Merlin Mythili S

## Abstract

*Investments in stock markets have always been volatile, uncertain, complex and ambiguous. Can we overcome this by adopting a suitable research in a particular industry with the probable risk and uncertainty embedded? This critical thinking has triggered the analysis described in this paper; the fast growing banking sector has been chosen for the study. The financial result published by the various banks up to the year ending December 2014 has been taken for our scrutiny. A sample of forty commercial banks listed in the schedule of Reserve Bank of India and listed with National Stock Exchange (NSE) has been taken for analysis. A non-linear portfolio optimization model has been developed that can be used by investors to park their surplus funds in Indian banking stock. In addition statistical comparisons between public sector banks and private sector banks have been conducted across important financial ratios.*

## Key Words

*Portfolio Optimization, Return on Assets, Rate of return, Net Interest Margin, Non-Performing Assets*

## Introduction

Economies like India offering immense growth potential are emerging as favourite investment destinations for foreign institutional investors (FIIs). With a positive sentiment about the performance of Indian securities, FIIs are gradually increasing their investments as Indian stocks are likely to outperform other emerging markets in the medium-term, according to some of the global fund managers. Foreign Institutional Investors and Funds are investing billions of dollars in Indian Stocks. Banking and Financial Services Sector is growing rapidly in India due to government policy of Financial Inclusion and the accelerated growth of Business. The financial performance, the cost of capital, rate of return and return on equity, Net interest margin are some of the determinants of banking stock prices. The forces of demand and supply have direct impact on the stock prices, while on the other hand, performance figures of firms, industry, and country influences the share prices. One of the major and important determinants of stock prices is volume traded in stock exchange market. Volume traded is commonly defined as a measure of the quantity of shares that change owners for a given security or total number of shares traded. The interest rate mechanism and the statutory rates to be maintained by commercial banks as per the norms suggested by Central Bank periodically also impact the price volatility among the banking stock particularly. Provision for Non Performing Assets and the asset quality of the organized sector of Financial Markets has a major impact on the stock valuation.

Foreign portfolio managers have invested almost US\$ 40 billion in Indian stocks and debt in 2014 so far on expectations on Indian economy. The rate of economic growth is expected to be accelerating. Expectations that interest rates will be slashed, and as dwindling oil prices cool inflation, India is seen as the most attractive destination among emerging markets.

A bank makes money on the difference between the interest it pays to those from whom it raises funds and the interest it charges those who borrow from it. Banks also make money from other services it offers its depositors. India is being viewed as a potential opportunity by investors, with the economy showing signs of tremendous growth. Buoyed by exceptional support from the country's government, the FII sector in India looks set to prosper. The economic outlook also looks highly promising. According to a KPMG-CII report, the banking industry in India is likely to become the fifth largest banking industry in the world by 2020 and third largest by 2025. The banking sector is projected to create up to two million new jobs over the next decade. This is expected to be the result of the efforts of the RBI and the Indian Government to integrate financial services into rural areas. Also, modern technology is expected to replace the traditional way of operations. An increased confidence level of central bank and the government has resulted in FIIs flocking towards Indian bonds, and benign commodity prices have added confidence. India is among those few countries where interest rates are expected to drop with fair visibility, which would attract flow from FII, as reported by experts. It is for the global community to be a part of this Make in India drive with a comfortable return on investment.

According to a Bloomberg report, FIIs have invested US\$16.3 billion in Indian equities in 2014, which is the highest among the seven emerging markets. Commercial banks in India have undergone massive regulatory and technological changes from the time financial sector reforms took place in 1991. Indian commercial sector banks are faced with increasing NPAs and rising costs as a result of regulatory requirements, financial and technological innovation, increasing capital adequacy and challenges of the recent financial crisis. These changes had a dramatic effect on the performance of the commercial banks in India. Banking software developed by Indian corporations has become widely accepted around the globe. The reason behind cleaning up of balance sheet drive by RBI also signals the increased efficiency of public sector and private sector

banks in India.

The main objective of financial statements is to provide useful information to both internal and external users. Listed companies generally use financial statements as one of the major mediums of communication with stakeholders. The majority of the government banks may walk into deeper problems on account of capital required to meet the Basel-III norms and thereby provide for bad and restructured loans stipulated by the RBI norms. The revised norms insist on substantial increase in the quantity and quality of capital. As noted by Vishnani & Shah [1], attempt is made by stock market regulators and accounting standards setters to improve the quality of financial statements with an aim to increase the transparency level in financial reporting.

Demand and supply factors are the most basic factors that influence price of equity share. When people start buying, prices move up and when they start selling prices go down. Government policies, firm's performance and also the industry's performance and potential impact the demand behavior of investors, both in the primary and secondary markets. The factors influencing the price of an equity share can be viewed from both macro and microeconomic perspectives. Macroeconomic factors could be like performance of the economy, government regulations, etc. There may be other factors like demand and supply conditions which can be the result of the performance of the company. The objectives of this paper are aimed at having an idea about the factors affecting the equity return of studied banks stock. The paper further attempts to identify whether there is a significant relationship between market return and the price of equity shares with special reference to the Banking sector.

### **Twin Objectives of the Study**

The primary objective was to develop a portfolio model for forty Indian banks from both the private sector and the public sector based on the Markowitz model [2]. This optimisation model distinguishes well-performing banks stocks from poor performing ones to identify investment in such banks equity shares for better return to the investors in secondary market through stock exchanges and global FIIs.

The secondary objective of this paper is to evaluate the financial performance of commercial banks from 2010 to 2014, by making comparison among the listed public sector



and private sector banks using selected financial ratios. This aims at providing an overall subjective assessment of the current status and financial performance of banking sector in India. We ascertain if there is any significant difference of profitability means among public and private sector bank groups using statistical tests in a manner inspired by Ally [3].

### **The Hypotheses of the study**

The following hypotheses were tested

**Ho<sub>1</sub>**, There is no significant difference in average ROA between public and private sector banks

**Ho<sub>2</sub>**, There is no significant difference in average ROE between public and private sector banks

**Ho<sub>3</sub>**, There is no significant difference in average NIM between public and private sector banks

### **Research Methodology**

To accomplish the twin objectives of the study, secondary data were used. Data has been collected from bank records, published financial reports, journals, and websites. The study is chronological and covers a period from 2010 to 2014. Financial performance of the selected public and private sector banks were analyzed for the period of ten years with the help of Ratio Analysis, ANOVA, regression and correlation.

### **Sample size**

A sample of thirty three banks consisting of public sector and private sector banks listed in BSE/NSE has been taken for analysis and the performance of these banks has been evaluated on the basis of the data released by RBI and other authorized websites in India .

This paper has been structured as follows. Section one specifies about the introduction, methodology and objective of the study. Section two deals with the literature of review and section three elaborates about the data and the relevant operational research tools applied for the analysis and section four discuss about the analysis and interpretation of the data and lastly the suggestion and conclusion

### **Literature Review**

Several studies have attempted to investigate the factors that

influence the efficiency of banks. There are some studies that have examined only bank-specific factors while others have examined both bank-specific attributes and environmental determinants. Bank performance has traditionally been evaluated on the basis of financial ratios. However T. Cronje [4] has used advances in Operations Research and Data Envelopment Analysis for estimating bank efficiency and productivity growth. Zawadi Ally, in his study on banking sector in Tanzania he observed that banks were adequately capitalized, profitable and remained in a sound position [3]. The study found that, there is no significant difference of profitability among the two groups of banks in terms of ROA. However, significant differences among banks in the same group existed in term of ROE and NIM.

The major weakness of these early studies was their inability to isolate the effect of change in earnings from other information. Alam et al. in their study on the performance of banks had considered the following variables for analysis: (1) Net income to total assets, (2) Net Loan losses to adjusted assets, (3) Net loan losses to total loans, (4) non-performing loans to total assets, (5) (net loan losses + provisions) to net income [5]. Lanine and Vander Vennet in their analysis of banks about credit rating had used the following variables (1) Net income upon total assets, (2) Liquid assets upon total assets, (3) Government debt securities upon total assets, (4) Capital upon total assets, (5) (Overdue loans + overdue promissory notes) upon total loans, (6) Total loans upon total assets, (7) log (total assets) [6].

Horobet et al. describes that stock market index is positively connected with the effective exchange rate, money supply, the interest rate, and substitutes in the development procedure [7]. Wang, et al. establishes that large firms are quicker to react to new information as compared to small firms [8]. Since share prices are advance looking, they present a sole evidence of change in investors opinions about the prospective forecast of companies. Glaser and Weber investigate that the confidence level of different investors can be measured with several scores [9]. High risks are taken by investors after booking huge profits, resulting in their purchasing high risks securities. Engle and Rangel claim that high frequency collective stock instability has both a short-run and long-run element. They propose that the long-run factor is connected to the business cycle [10].

Dangwal and Kapoor evaluated the financial performance of public sector banks in India and assessed the growth index value of various parameters through overall profitability indices [11].

Hayatiin a case based study on banking sector investigated the Financial Statement Report and its Impact on Stock Price in Indonesia [12]. This study found that the financial statements are the main indicators for estimating more accurate in measuring the company's future prospects in a rational manner. The market quickly reacts to the information in the financial statements. Issuers who are late in delivering financial statements left a bad impression on the investors. This, in turn weakened investor's confidence in the company. The reaction will appear in the stock price.

Tsz-Kin Chung et al. explain share price disparity due to uncertainty from China stock markets [13]. They have used data of 44 listed companies over the sample period from 2006 till 2010. Independent variables are selected by them as determinants of equity values, debts, time to maturity, and risk free interest rate. To analyze the relationship between price disparity and parameter uncertainty they have used panel regression analysis. According to their analysis parameter uncertainty is a strong factor on share price disparity. They have reported that parameter uncertainty is also related with other variables.

### **Banking financial Performance Indicators**

Profit is the ultimate goal of commercial banks. All strategies and activities are therefore, aimed at realizing this objective. However, this is in addition to the other social obligations. Commercial banks could also have additional social and economic goals. However, the purpose of this study is related to the first objective i.e., profitability. Profitability of commercial banks is studied with the help of ratios such as Return on Assets, Return on Equity and Net Interest Margin, as suggested by Murthy and Sree [14].

### **Return on Equity (ROE)**

ROE= Net profit after taxes / equity capital

ROE is a financial ratio that refers to how much profit a company earned in comparison to shareholder equity. ROE is what the shareholders look in return for their investment. Any business having a high ROE is more likely to be one that

is capable of generating cash internally. In other words, higher ROE results in higher profit generation. It is further explained by Khrawish that ROE is the ratio of Profit after Taxes divided by Total Equity Capital [15]. It represents the rate of return earned by the stockholder on the funds that they have invested in the banks. ROE reflects how effectively a bank management is using shareholders' funds. From this statement it becomes evident that the better the ROE the more effective is the management in utilizing shareholders capital.

### **Return on Assets (ROA)**

ROA= Net profit after taxes / assets

ROA is also another important ratio that measures the profitability of a bank. The return on assets, provide information on how efficiently a bank is being run. It indicates how much profits are generated by each rupee of assets. It is the ratio of income to total asset. It measures the ability of the bank management to generate income by utilizing company assets at their disposal i.e., it shows how efficiently the resources of the company are used to generate income. It also indicates the efficiency of the management of a company in generating net income from all the resources of the company. Wen, states that a higher ROA reflects company's efficiency in using its resources [16].

### **Net Interest Margin (NIM)**

NIM = (Interest income - Interest expenses) / Assets

NIM is a measure of the difference between the interest income generated by banks and the interest paid to their depositors relative to the amount of their lenders. It is usually expressed as a percentage of what the bank earns on loans in a specific time period and other assets less the interest paid on borrowed funds divided by the average amount of the assets on which it earned income in that time period (the average earning assets). As defined in Gul et al. NIM is the net interest income divided by total earnings assets [17]. It also measures the gap between the interest income the bank receives on loans and securities and interest that it pays on its borrowed funds. It reflects the cost of bank intermediation services and the efficiency of the bank. Higher net interest margin indicates higher profit and the more stability for the bank. Thus, it is one of the key measures of bank profitability. It is pertinent to add here that, as noted by Khrawish, a higher net interest margin could reflect more risky lending practices associated

with substantial loan loss provisions.

**Table 1 Source: RBI**

Capital infusion by Govt. in PSBs	In Rs. Crore
FY09	1,900
FY10	1,200
FY11	20,117
FY12	12,000
FY13	12,517
FY14	14,000
FY15*	11,200
FY16*	7,940

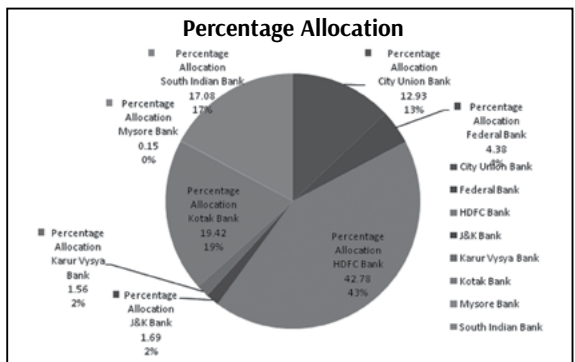
\*proposed

Reserve Bank data reflects that state-run banks' requirement of capital to comply with Basel-III regulations may overshoot the earlier estimate of Rs 2.4 trillion, and a huge capital requirement and the banks should generate from other sources and capital infusion by government may not cover the huge demand for funds. The above table reflects the amount of funds injected by RBI in Public Sector Banks to strengthen the Capital Adequacy Norms which intern improves the rating of the banks by international agencies. A bank's real capital worth is evaluated after taking into account the riskiness of its assets. It was previously thought that capital would provide banks with a comfortable cushion against insolvency, thereby ensuring market stability. Since the introduction of prudential regulation as an integral part of financial sector reforms in India, there is strong debate on whether capital adequacy requirements are the best means to regulate the banking system. Basel III norms suggest the quality and quantity of capital that an Indian bank should maintain. Under these circumstances all the commercial Banks are very keen on approaching the equity market to augment their capital base and expecting participation from FII and Indian investors to respond. The study aims to provide a model for the investors including the foreign institutional investors to identify the portfolio they may choose while investing their money in Indian banking stock with a risk management.

## Portfolio Optimization

We built a minimum variance portfolio model for the forty banks registered on the National Stock Exchange (NSE) by forming the excess return matrix X and then subsequently the variance-covariance matrix X'X as demonstrated by Wright [18]. The monthly opening and closing prices for 2.5 years were obtained from the Economic Times website [19]. These thirty observations for forty banks were used to form the returns matrix from which we obtain the excess return matrix X, by subtracting the average return for each stock from the monthly observation. The monthly return is obtained from the ratio of the closing price of the stock to the opening price expressed as a percentage above or below hundred. The minimum variance optimization suggested that thirty one out of the forty banks required no investment. Out of the Eight which there was any allocation, HDFC bank had the largest share with 42.78% of the investment followed by South Indian Bank with 17.08%. The percentage investment is shown in the pie-chart. The portfolio variance was minimized with a minimum expected return of 10%. This recommended allocation is stable with expected return ranging from 10% up to 25%.

**Figure 1 Percentage Allocation from Portfolio Variance Model**



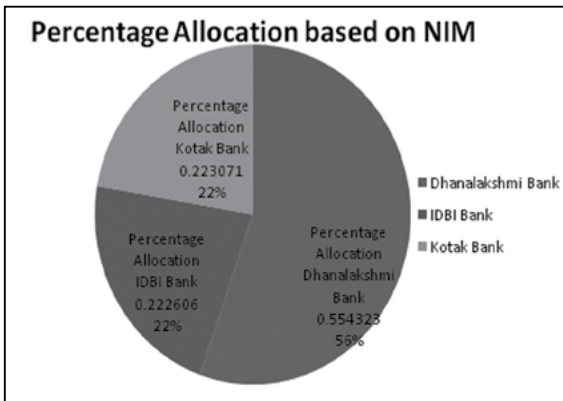
## Forming the Covariance Matrix with other Financial Ratios

The question that we wished to address, was, how is the portfolio selection affected by the choice of financial ratio, that is used as a proxy for return? Instead of the ratio of the closing and opening prices, we considered taking Net Interest Margin (NIM) as a proxy for the return. Such, NIM is the net interest income earned by the bank on its average earning assets comprising of advances, investments, balance with

the RBI and money at call. It is calculated as,  $NIM = (\text{Interest income} - \text{interest expenses}) / \text{average earning assets}$ .

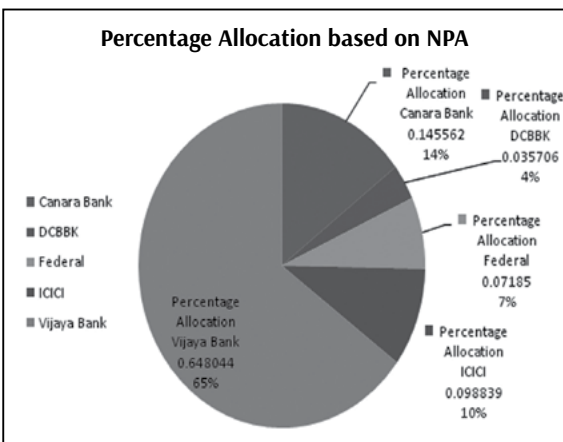
At the equitymaster site, we found the NIM calculated for five consecutive years for 33 out of the 40 banks that are listed on the stock exchange. We calculated a variance-covariance matrix based on NIM in a fashion similar to the the matrix calculation for the closing price/opening price ratio.

**Figure 2 Allocation among three banks based on NIM**



A balance sheet ratio we considered for the variance-covariance matrix was net Non Performing Assets (NPA). Forming a variance-covariance matrix based on NPA and running a portfolio model, we obtained five banks out of thirty two that were giving good returns.

**Figure 3 Percentage allocation based upon NPA**



**Statistical Tests Comparing Public Sector Banks with Private Sector Banks**

Secondly, we performed extensive hypothesis testing about the equality of means between the two populations – public sector banks and private sector banks. The financial ratios considered were Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM) and Net non-performing assets (NPA). Many other ratios are available on the company fact sheets, but we have not selected all of them for our study. The three hypotheses tested had the following null hypotheses:

**Ho<sub>1</sub>:** *There is no significant difference in average ROA between public and private sector banks*

**Ho<sub>2</sub>:** *There is no significant difference in average ROE between public and private sector banks*

**Ho<sub>3</sub>:** *There is no significant difference in average NIM between public and private sector banks*

We took the financial secondary data from two sources, Equity Master and Arcadia Share and Stock Brokers Pvt. Ltd [22, 23].

For the t-tests there is an assumption of equal variances in the two populations. So, first the F-test for equal variances was performed using the sample data from Equity Master, and it was evident that the variances were not equal for the two populations, public and private sector banks. When we tested the equality of variance for the data from Arcadia Share and Stock Brokers, the conclusion was that the variance was equal in the case of ROE, but different for ROA and NIM. We then performed the appropriate t-tests and at a 5% significance level for the three parameters, using the two data sources. The result of the hypothesis test was the same. We had to reject the null hypothesis of equal means for Return on Assets and NPA. Only for Return on Equity was the null hypothesis acceptable. This is interesting, that the disparity between public sector banks and private sector banks is not statistically significant in the case of Return on Equity. In Tables 2 and 3 we present, for the financial ratio (ROA) the results of the F-test for equal variances and the t-test for equal means (assuming unequal variances). The p-value is small at the 5% significance level and we can reject the null hypothesis for both equality of variances and equality of means Ho<sub>1</sub>.



**Table 2 (ROA) Equity Master**

F-Test Two-Sample for Variances		
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	0.75	1.126666667
Variance	0.063682	0.261066667
Observations	18	15
Df	17	14
F	0.243931	
P(F<=f) one-tail	0.003554	
F Critical one-tail	0.429378	

**Table 3 (ROA) Equity Master**

t-Test: Two-Sample Assuming Unequal Variances		
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	0.75	1.126666667
Variance	0.063682	0.261066667
Observations	18	15
Hypothesized Mean Difference	0	
Df	20	
t Stat	-2.60282	
P(T<=t) one-tail	0.008511	
t Critical one-tail	1.724718	
P(T<=t) two-tail	0.017023	
t Critical two-tail	2.085963	

In Tables 4 and 5 we have the tests for ROE. The p-value for the test about equality of variances is small at 5% significance level, and we can reject the null hypothesis of equality. The p-value for the equality of ROE means is however not small,

and we must accept the null hypothesis  $H_0$ .

**Table 4 (ROE) Equity Master**

F-Test Two-Sample for Variances		
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	13.47666667	13.56266667
Variance	14.11521176	36.45896381
Observations	18	15
Df	17	14
F	0.387153399	
P(F<=f) one-tail	0.032848232	
F Critical one-tail	0.429377673	

**Table 5 ROE (Equity Master)**

t-Test: Two-Sample Assuming Unequal Variances		
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	13.47666667	13.56266667
Variance	14.11521176	36.45896381
Observations	18	15
Hypothesized Mean Difference	0	
Df	23	
t Stat	-0.04796485	
P(T<=t) one-tail	0.481079164	
t Critical one-tail	1.713871517	
P(T<=t) two-tail	0.962158328	
t Critical two-tail	2.068657599	

In Tables 6 and 7 we have the results for the hypothesis tests on the NIM variable. The p-values are small for the test of

equal variance and equal means (assuming unequal variances), and so we reject the null hypothesis  $H_0$ .

**Table 6 NIM (Equity Master)**

F-Test Two-Sample for Variances		
	<i>Average NIM</i>	<i>Average NIM</i>
Mean	2.384166667	2.88
Variance	0.164277206	0.5424
Observations	18	15
Df	17	14
F	0.302870955	
P(F<=f) one-tail	0.010785962	
F Critical one-tail	0.429377673	

**Table 7 NIM (Equity Master)**

t-Test: Two-Sample Assuming Unequal Variances		
	<i>Average NIM</i>	<i>Average NIM</i>
Mean	2.384166667	2.88
Variance	0.164277206	0.5424
Observations	18	15
Hypothesized Mean Difference	0	
Df	21	
t Stat	-2.329975134	
P(T<=t) one-tail	0.014931255	
t Critical one-tail	1.720742871	
P(T<=t) two-tail	0.02986251	
t Critical two-tail	2.079613837	

We ran the same battery of tests on the financial ratios obtained from the Arcadia Shares and Stock database. The results of these tests are presented in Tables 8 to 12. From Tables 8 and 9 we see that the p-value for the test is small and we must again reject the null hypothesis  $H_0$  of equality of mean ROA (assuming unequal variances).

**Table 8 ROA (Arcadia)**

F-Test Two-Sample for Variances		
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	0.987222222	1.234154
Variance	0.116527124	0.328452
Observations	18	13
Df	17	12
F	0.354777111	
P(F<=f) one-tail	0.025236821	
F Critical one-tail	0.420052612	

**Table 9 ROA (Arcadia)**

t-Test: Two-Sample Assuming Unequal Variances		
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	0.799583	1.23415385
Variance	0.061513	0.32845164
Observations	18	13
Hypothesized Mean Difference	0	
Df	15	
t Stat	-2.56595	
P(T<=t) one-tail	0.010753	
t Critical one-tail	1.75305	
P(T<=t) two-tail	0.021506	
t Critical two-tail	2.13145	



**Table 10 ROE (Arcadia)**

F-Test Two-Sample for Variances		
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	15.80156	15.88615
Variance	15.19299	24.26709
Observations	18	13
Df	17	12
F	0.626074	
P(F<=f) one-tail	0.183593	
F Critical one-tail	0.420053	

Tables 10 and 11 show that the p-value is not small at the 5% significance level, and we must accept the alternate hypothesis of unequal variances, and also the alternative hypothesis Ho2 of equal means for ROE between the two populations. This result corroborates what we obtained from the EquityMaster database.

**Table 11 ROE (Arcadia)**

t-Test: Two-Sample Assuming Equal Variances		
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	15.80155556	15.88615385
Variance	15.19299273	24.26709431
Observations	18	13
Pooled Variance	18.94779338	
Hypothesized Mean Difference	0	
Df	29	
t Stat	-0.053396077	
P(T<=t) one-tail	0.478891236	
t Critical one-tail	1.699126996	
P(T<=t) two-tail	0.957782473	
t Critical two-tail	2.045229611	

Tables 12 and 13 show the results of the hypothesis test

conducted on the NIM financial ratio taken from the Arcadia database. The p-values for the two tests are small at the 5% significance level and we must conclude that the population variances are unequal, and furthermore the mean value of NIM is different between the two populations. We are thus accepting Ho3 as we did with the Equity Master data.

**Table 12 NIM (Arcadia)**

F-Test Two-Sample for Variances		
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	2.356667	2.883692
Variance	0.152189	0.519033
Observations	18	13
Df	17	12
F	0.293216	
P(F<=f) one-tail	0.010645	
F Critical one-tail	0.420053	

**Table 13 NIM (Arcadia)**

t-Test: Two-Sample Assuming Unequal Variances		
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	2.356667	2.883692308
Variance	0.152189	0.519033231
Observations	18	13
Hypothesized Mean Difference	0	
Df	17	
t Stat	-2.39605	
P(T<=t) one-tail	0.014176	
t Critical one-tail	1.739607	
P(T<=t) two-tail	0.028352	
t Critical two-tail	2.109816	

## Conclusions

In this paper, the authors have provided a commentary about the positive trend of increasing foreign investment in the Indian industry. To augment the information that is already available to investors, we have presented a quantitative analysis of a large sample of public sector and private sector banks that are operative in India. A portfolio selection model highlights the banks giving the most return on investment. We have considered various financial ratios, other than closing price/opening price as a proxy to the “return” variable. As a secondary objective of the study, we have performed a statistical test comparing the public sector banks with the private sector banks across the financial ratios.

The allocation of funds as investment in bank stocks depends and varies significantly with the financial ratio that is chosen as a proxy for return. The selection of banks is different if Net Interest Margin (NIM) is chosen, or if Non-Performing Assets (NPA) is chosen instead of the Closing Price/Opening Price ratio. Thus, there is a behavioural element of choice even in the quantitative optimization model. Moreover the statistical testing of hypothesis has compared the efficiencies of public sector banks, with private sector banks. The public sector banks are comparable with private sector banks on the basis of Return on Equity (ROE). They are however, not as efficient as private sector banks, on the basis of Return on Assets (ROA) or Net Interest Margin (NIM), The introduction of GST, Infusion of Funds by RBI, and the disclosure norms for reporting the NPAs to project a greater transparency shall in turn result in a better rate of return for the banking sector at the earliest and the study become relevant in the present scenario. This opportunity may fill upon banking sector for a greater return.

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# Business Risk in Indian Corporate Sector: A Study of Select Companies in the Post-liberalization Era

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## Abstract

With the spectacular changes in the business milieu in the post liberalization era, the earning trends, cost behaviour pattern, capital productivity and liquidity policies in the Indian corporate sector have also changed radically. Consequently, the pattern of business risk associated with the companies in the Indian industry has witnessed notable changes. In this backdrop, the present study seeks to analyze the business risk in the Indian corporate sector during the period 1994-95 to 2013-14 and also to examine whether its findings conform to the theoretical arguments. The sample size of the study consists of one hundred companies which have been selected by taking the top five companies (based on market capitalization as per BSE on 31.03.2015) from each of the twenty selected industries. The business risk and its company-specific components associated with the selected companies have been measured in this study using Ginni's coefficient of concentration. While tackling the issue analyzed in this study relevant statistical tools and techniques have been applied.

## Key Words

Business Risk, Cost Structure Risk, Capital Productivity Risk, Liquidity Risk, Return

## Executive Summary

In today's challenging and competitive environment, the matter of designing appropriate strategies for managing risks in accomplishing the wealth maximization objective of corporates is of utmost importance. Considering the stiff competition that exists in the contemporary corporate world, understanding, analyzing and measuring business risk are immensely important to the corporate executives to instigate managerial efficiency and excellence. The paradigm shift of the Indian economy to a market-dominated open economic system in 1991 from a state-dominated subsidized financial system consequent upon the world wide wave in favour of globalization and liberalization gaining momentum in the last quarter of the twentieth century and signing of the Trade Related Intellectual Property Rights System (TRIPS) agreement in 1995 are considered as watershed events for the Indian industries in the recent time. With the spectacular changes in the business milieu, the earning trends, cost behaviour pattern, capital productivity and liquidity policies in the Indian corporate sector have also changed radically. Consequently, the pattern of business risk associated with the companies in the Indian industry has witnessed notable changes. The Indian enterprises have been forced to reorient their strategies for managing their business risk in the post-liberalization era. Some of them have been able to adapt themselves to the new situation while others could not so reorient. A sizeable number of studies on the issue relating to business risk have been made during the last few decades. However, the same has not been addressed with due importance in the post-

liberalization period, particularly in the Indian context. In this backdrop, the present study seeks to analyze the business risk in the Indian corporate sector during the period 1994-95 to 2013-14 and also to examine whether its findings are at par with the theoretical arguments as forwarded by the eminent theorists and researchers. The sample size of the study consists of one hundred companies which have been selected by taking the top five companies (based on market capitalization as per BSE on 31.03.2015) from each of the twenty selected industries. The business risk and its company-specific components associated with the selected companies have been measured in this study using Ginni's coefficient of concentration. While tackling the issue analyzed in this study relevant statistical tools and techniques have been applied.

## Introduction

Managing business risk is essential for a company to stabilize its earnings and to generate value for its owners' wealth. So in today's challenging and competitive environment, the matter of designing appropriate strategies for managing business risk in accomplishing the wealth maximization objective of corporates is of utmost importance. Business risk arises out of the randomness in the company's real returns in contrast to its projected ones. The class and size of business risk depends on several factors that are generally categorized as *economy-specific factors, industry-specific factors and, company-specific factors*. *Economy-specific factors*, beyond the control of a corporate, affecting all the sectors of an economy, are fluctuations in foreign exchanges, competition, concentration of revenues, inflation, imports, restrictive regulations etc. *Industry-specific factors* relate to the industry to which the company belongs. Changes in demand for the product, increased competition for the product, special status enjoyed by the industry, growth prospects of the output produced or service rendered by the industry in the market and so on are included in this category. *Company-specific factors* are explicit to the affairs of the company concerned with such as human factors like managerial competence, talent management, strikes, technological factors like emerging technologies; physical factors like failure of machines, fire or theft; operational factors like access to credit, cost cutting, cost structure, asset composition, advertisement, organizational culture, ethical values and so on. Business risks arising out of economy-specific, industry-specific and company-specific factors are regard-

ed as economy risk, industry risk and company risk respectively. The Company risk emanates from precariousness in one or more fronts of the company, important of which are instability in cost behaviour pattern, dispersion of revenue generating capability using long term funds and variability in short term debt paying capability. These weaknesses lead to cost structure risk, capital productivity risk and liquidity risk (Ghosh, 1997). There is almost no scope to exercise control over the economy risk and industry risk while it is, to some extent, possible to have power over the company risk. Theoretically, it is expected that high risk can be rewarded by higher risk premium i.e. higher return. It will be hard to a company with high risk-low return profile to run its operating wheel in the long run. However, a great deal of controversy has always been persisting over this issue. The findings of the relevant studies carried out so far are conflicting and inconclusive in nature. One school of thought argues that return and risk are shown to be influenced by various industry conditions and business strategies but not by each other (Oviatt and Bauerschmidt, 1991). Moreover, they also opine that there may be a negative relationship between risk and return (Betlis and Mahajan 1985, Singh, 1986, Mallik & Sur, 2009). The other school of thought suggests a high degree of positive affiliation between risk and return (Cootner and Holland, 1970).

With the notable transformation in the scenario in the economic front since July 1991 along with other aspects of corporate affairs, the earning trends, cost behaviour pattern, capital productivity and liquidity policies in the Indian corporate sector have also changed significantly leading to noticeable changes in the pattern of business risk associated with the corporates (Sur, 2007). The Indian enterprises have been forced to reorient their strategies for managing their company-specific components of business risk in the post-liberalization era. Some of them have been able to adapt themselves to the new situation while others could not so reorient (Mallik & Sur, 2009). In this backdrop, the present paper attempts to analyze the business risk in the Indian corporate sector during the period 1994-95 to 2013-14.

The remainder of this paper is organized as follows. Section II deals with the review of related literature. Section III narrates the objectives of the study. Section IV explains the methodology adopted in this study. In Section V the limitations of the study are mentioned. Section VI discusses the empirical



results. In Section VII concluding observations are presented.

## Review of Related Literature

Before setting the objectives of a study it is necessary to review the existing literature on the issue connected with the study and to ascertain the research gaps. The following paragraphs in this section present a brief description of some of the notable studies carried out in the recent past in India and abroad on the topic addressed in the present paper and the last paragraph in this section deals with the identification of the research gaps.

**Amit and Wernerfelt (1990)** conducted a study to identify the reasons for firms' intention to reduce business risk. In this study two empirical tests designed to disentangle firms' motives for reducing business risk were carried out. The study revealed that low business risk allowed firms to acquire factors of production at lower costs, to operate more efficiently or both. These findings were consistent with theories assuming both value maximization and efficient capital markets.

**Blacker (2000)** in his study identified the ways of mitigating operational risk in British retail banks and designed a theoretical framework based on the emerging core practices of the banks under study. The study also revealed that raising awareness of risk management through effective training provided means to overcome inertia and to make staff more risk-conscious.

In the study conducted by **Mishra and Mshra (2007)**, risks and returns of different sectors of the Indian economy were analyzed using both the market based and accounting based information. The net outcome derived from the analysis of market information showed that FMCG, health care and oil & gas sectors were the most defensive sectors of the Indian economy whereas metal and IT sectors were the most aggressive ones. The results based on accounting information indicated that FMCG, metal and IT sectors had the highest business risk while sectors like technology, auto and public sector units had the least business risk. The study also revealed that the entire risk measured on the basis of accounting information was not significantly captured by the market.

**Sur (2007)** made an attempt to make a comparative analysis in respect of business and financial risks of NTPC Ltd. in

the pre-liberalization and post-liberalization periods. The study revealed that both the business and financial risks associated with the company declined notably resulting in a significant decrease in its total risk profile during the post-liberalization period. The study also concluded that as NTPC Ltd. enjoyed almost monopoly power in the Indian power sector throughout the study period (1982-83 to 2005-06), two major components of business risk, such as economy risk and industry risk associated with the company did not increase during the post-liberalization era. Rather the business risk stemmed from company-specific factors, i.e. company risk associated with the company reduced noticeably during the same period.

**Mallik and Sur (2009)** carried out a study to analyse the business and financial risks in the Indian corporate sector during the period 1995-96 to 2006-07 and also to examine whether its findings conformed to the theoretical arguments. While making this study fifty companies were selected by taking the top five companies (based on net sales revenue) from each of the ten selected manufacturing industries and coefficient of variation was used as the measure of risk. The study observed that no strong evidence of positive or negative relationship between business and financial risks associated with the selected companies was noticed during the study period and high risk was not at all compensated by high risk premium during the same period.

**Saleem et al. (2011)** conducted a study to analyze the effect of leverage on the profitability of the oil and gas sector of SAARC countries during the period 2001 to 2010. The result obtained from the study showed a significant relationship between DFL, DOL and ROA. The study, therefore, concluded that the fixed operating costs and the financing decisions of the companies under study can significantly affect their earning capability.

**Sur and Mitra (2011)** in their study attempted to make the business risk analysis of seventeen selected companies in Indian IT sector during the period 1999-2000 to 2008-09. While measuring business risk and its company-specific components associated with the sample companies in the study, Ginni's coefficient of mean difference was used. The study revealed that there was a lack of uniformity in respect of risk-return trade-off among the selected IT companies during the study period. Another notable outcome of the study was that high risk was not at all compensated by high risk premium

in the selected companies during the period under study.

**Dhanabhakym and Balasubramanian (2012)** in their study attempted to analyze the business and financial risks in three selected industries in India, such as automobiles, refineries and steel industries. While carrying out this study the data for the period 1999-2000 to 2008-09 of five companies of each selected industry were used. The study revealed that all the three industries under study could not maintain a 'high-low' combination of business and financial risks during the study period. Another significant outcome of the study was that no strong evidence of positive relationship between risk and return of the companies under study was observed during the period under study.

In the study carried out by **Gupta and Sur (2013)**, the business and financial risks associated with Hindustan Unilever Ltd. were assessed and the interrelationship between risk and return of the company was also examined. The outcome of the study mismatched with the theoretical argument by reflecting a negative relationship between risk and return during the period under study.

Another study was conducted by **Gupta and Sur (2015)** in which the business risk associated with ten selected industries in India during the period 2001-02 to 2010-11 was evaluated by considering ten companies from each of the selected industries. This study also examined whether the operating profitability of the selected industries reacted to the changes in business risk. The study revealed that out of the selected industries, FMCG faced the minimum risk in its business operations while the maximum volatility in operating profitability was observed in Textile industry. A strong evidence of negative association between business risk and operating profitability was also observed in this study though a positive relationship between them is theoretically desirable.

A good number of studies on the analysis of business and financial risks have been carried out in India and abroad during the last few decades while a very few studies on the same issue relating to the Indian corporate sector has so far been made during the post-liberalization era. By a careful scrutiny of the studies of business risk analysis in Indian corporate sector it can be inferred that no in-depth study on the issue in connection with the business risk associated with the corporate sector in India considering the effects of the

major changes that took place in Indian business environment during the post-liberalization period has been made. Even the studies so far conducted at both the national and international levels have failed to make any definite conclusion on the relationship between business risk and operating profitability. Most of the studies so far made in the global perspective are theoretical and associated with financial institutions only. Moreover, Ginni's coefficient of concentration is presently recognized as a reliable measure of risk. But no significant study on the business risk analysis in Indian corporate sector has been carried out using such a coefficient. In order to bridge the gap, it is, therefore, high time to deal with the issue relating to the analysis of business risk in the Indian corporate sector during the post-liberalization period applying Ginni's coefficient of concentration.

### Objectives of the Study

The present study has the following objectives:

- i) To measure the business risk (BR) associated with each of the selected companies and of the selected industries as a whole.
- ii) To ascertain the company-specific components of BR associated with each of the selected companies, to analyze industry averages of such components and to test whether there was any uniformity among the trends in such components.
- iii) To study the relative risk-return status of the selected industries.
- iv) To analyze the closeness of association between BR and return of the selected companies.
- v) To assess the joint effect of the company-specific components of BR associated with the selected companies on their returns.
- vi) To examine whether the findings of the study conform to the theoretical arguments.

### Methodology of the study

The study is based on twenty major industries in India which



were selected from the manufacturing sector following purposive sampling procedure. One hundred companies were selected by taking the top five companies (based on market capitalization as per BSE on 31st March, 2015) from each of the twenty selected industries. The twenty industries and one hundred companies selected for the study are listed in Appendix 1. The data of the selected companies as well as industries for the period 1994-95 to 2013-14 used in this study were taken from secondary sources i.e. Capitaline Corporate Database of Capital Market Publishers (I) Ltd. Mumbai. As the liberalization process started in India during the financial year 1991-92, it is obvious that the effect of it could not be reflected immediately after its inception. Thus, in this study the financial year 1994-95 was considered as the initial year of the post-liberalization period. While measuring business risk and its company-specific components of each of the selected companies Ginni's coefficient of concentration was used. For making analysis of the computed values of risks, statistical techniques like Pearson's simple correlation analysis, Spearman's rank correlation analysis, analysis of Kendall's coefficient of concordance, multiple correlation analysis and multiple regression analysis and statistical tests like t test, F test and Chi-square ( $\chi^2$ ) test were applied at appropriate places.

### Limitations of the Study

- i) This study was carried out only on the basis of the data reported in published financial statements.
- ii) Only the company-specific components of the business risk associated with the selected companies were analyzed in this study. The analysis of economic-specific and industry-specific components of business risk was not made in this study.
- iii) The issue relating to minimization of cost structure risk through forex management was not considered in this study.
- iv) The matter in connection with reduction of interest risk through interest rate swaps was not accounted for while conducting this study.

### Empirical Results and Discussion

**A.** In Table 1, an attempt was made to measure the BR associated with each of the selected industries during the period under study using Ginni's coefficient of concentration of its average operating profit to capital employed ratio (OPCE). Similar methodology was applied in measuring the BR associated with each of the selected companies. Table 1 shows that the degree of BR was the highest in paints & varnishes industry, followed by pharmaceuticals, personal care products, tyres, domestic appliances, infrastructure – general, computers – hardware, steel – large, fertilizer, food processing, chemicals, mining & minerals, cement, consumer goods – electronic, paper, ceramics & granite, leather products, glass & glass products, engineering – heavy and breweries & distilleries respectively in that order. The industries, namely pharmaceuticals, personal care products, tyres, domestic appliances, infrastructure – general, computers – hardware, steel – large, fertilizer and paints & varnishes were placed in the 'BR above the Indian manufacturing industry average' category while the remaining eleven industries under study were able to find place in the category of 'BR below the Indian manufacturing industry average' during the study period.

**B.** In Table 2, industry-wise mean values of the three major components of company-specific BR, namely liquidity risk (LR), cost structure risk (CSR) and capital productivity risk (CPR) were found out. Before ascertaining the mean values, the LR, CSR and CPR of each of the selected companies were measured by Ginni's coefficient of concentration of working capital ratio, that of variable cost – total cost ratio and that of capital turnover ratio respectively. In this table, in order to examine whether there was any uniformity among the trends in LR, CSR and CPR of the selected industries Kendall's coefficient of concordance (W) was computed. For testing the significance of such coefficient, Chi-square ( $\chi^2$ ) test was applied. Table 2 discloses that the average risk in respect of short term debt paying capability was the maximum in food processing industry and it was followed by paint & varnishes, personal care product, pharmaceutical, domestic appliances, infrastructure – general, tyres, fertilizer, computer – hardware, cement, mining & minerals, paper, steel – large, chemicals, consumer – electronic, ceramics & granite, leather products, breweries & distilleries and glass & glass products industries respectively in that order. Engineering – heavy industry enjoyed the lowest risk in liquidity front during the

study period. Out of the twenty selected industries, nine were placed in the category of 'LR above the Indian manufacturing industry average' and the remaining eleven industries found place in 'LR below the Indian manufacturing industry average'. In respect of CSR, paints & varnishes industry occupied the top most position and the next five positions were captured by food processing, personal care, domestic appliances, pharmaceuticals, and infrastructure – general industries while the degree of CSR was the least in engineering – heavy industry. Nine industries found place in the category of 'CSR above the Indian manufacturing industry average' and the remaining eleven industries were placed in 'CSR below the Indian manufacturing industry average'. Computer – hardware industry maintained the highest level of risk of not getting stable turnover by utilizing average long term funds during the period under study, followed by cement, paints & varnishes, fertilizers, breweries & distilleries, domestic appliances and so on whereas the degree of CPR was the minimum in the industry producing glass & glass products. Of the twenty selected industries, eleven industries were placed in the category of 'CPR above the Indian manufacturing industry average' while the remaining nine industries found place in 'CPR below the Indian manufacturing industry average'. It is, generally, accepted that disparity among the nature of instability in short term debt paying capability, cost behaviour pattern and capital productivity is obvious. Thus, lack of uniformity among the trends in LR, CSR and CPR in different industries is a natural phenomenon. At a glance, the same trend in the selected industries was also observed during the period under study. Table 2 shows that the computed value of Kendall's coefficient of concordance was 0.1185 which was not found to be statistically significant even at 5 per cent level. It again confirms that uniformity among the trends in the selected company-specific components of business risk was absent during the study period.

**C.** In Table 3.1, risk-return status of the selected industries in India was ascertained with reference to BR and ROCE. It is observed from Table 3.1 that industry producing breweries & distilleries was a low risk-high return industry. Domestic appliances and infrastructure industries were in the moderate risk-high return class. Cement, ceramics & granite, chemicals, fertilizer, leather products and steel-large industries maintained a combination of moderate risk and moderate return. Tyres industry was placed in the worst category i.e. high risk- low return category. Computers – hardware, paints

& varnishes, personal care and pharmaceuticals industries maintained a high risk- high return combination. Consumer goods – electronic, food processing and mining & minerals industries were placed in the moderate risk-moderate return class. Glass & glass products industry found place in the low risk-low return cell. Paper industry was able to maintain a moderate risk-low return blend while a combination of low risk-moderate return was kept by engineering – heavy industry during the study period.

In Table 3.2, risk-return profile of the selected industries was assessed on the basis of LR and ROCE. This table discloses that the industry producing breweries & distilleries was the only industry among the selected ones which found place in the most desirable category i.e. low risk-high return class whereas tyre manufacturing industry was placed in the most undesirable class by maintaining a high risk-low return blend. Cement, ceramics & granite, chemicals and steel – large industries maintained a balance between risk and return by occupying moderate risk-moderate return cell. Paints & varnishes, food processing, personal care and pharmaceutical industries were in the high risk-high return class. Domestic appliances, fertilizer and infrastructure – general industries maintained high risk-moderate return combination while computer – hardware, consumer goods – electronic and mining & minerals industries were placed in the reversed category i.e. moderate risk-high return class. A blend of moderate risk and low return was adopted by paper industry whereas leather products and engineering – heavy industries maintained a low risk-moderate return combination.

In Table 3.3 an assessment of risk-return status of the selected companies was made by taking into account the combination of CSR and ROCE. This table depicts that food processing, paints & varnishes, personal care and pharmaceuticals industries were placed in the cell representing a blend of high risk and high return whereas glass & glass products and paper industries found place in the low risk-low return class. Domestic appliances industry maintained a combination of high risk and moderate return. A blend of low risk and moderate return was adopted by ceramics & granite, chemicals, steel – large, engineering – heavy and leather products industries while tyre industry maintained the reverse combination i.e. moderate risk-low return combination. Fertilizer, infrastructure – general and cement industries maintained a balance between risk and return by capturing the moderate risk-moderate





return cell. Computer – hardware industry was placed in the moderate risk-high return category while the most desirable blend which is stemmed from low risk and high return was maintained by breweries & distilleries, consumer goods – electronic and mining & minerals industries.

In Table 3.4 risk-return status of the selected companies was measured with reference to CPR and ROCE. This table discloses that only computers – hardware industry was placed in the high risk-high return class whereas industry producing glass & glass products maintained a combination of low risk and low return. While cement industry found place in the high risk-moderate return cell, food processing, paints & varnishes, personal care, breweries & distilleries and mining & minerals industries were placed in the class indicating the reverse blend i.e. moderate risk-high return combination. Infrastructure – general, steel – large, engineering – heavy and leather products producing industries maintained a combination of low risk and moderate return whereas the reverse combination i.e. moderate risk-low return blend was maintained by cement industry. Pharmaceuticals and consumer goods – electronic were the only two industries which were placed in the most desirable class i.e. low risk-high return category whereas domestic appliances, fertilizer, ceramics & granite and chemicals industries maintained a balance between risk and return by occupying the cell representing moderate risk and moderate return.

**D.** In Table 4 it was attempted to assess the extent of relationship between BR and return and that between each of the company-specific components of BR and return of the selected companies through correlation coefficients between the selected measures of risks and return taking into account their magnitudes (i.e. by Pearson's simple correlation coefficient) and rankings of their magnitudes (i.e. by Spearman's rank correlation coefficient). In order to test whether these coefficients were statistically significant or not, t-test was used. This table shows that both the correlation coefficients between BR and ROCE were positive and found to be statistically significant at 0.05 level. All the six correlation coefficients between ROCE and the selected company-specific components of BR were positive but the correlation coefficients between CPR and ROCE were not found to be statistically significant even at 0.05 level. Thus, the study made in Table 4 provides strong evidence of positive relationship between BR or its two company-specific components (LR and CSR) and

return. The net outcome derived from the analysis, therefore, conforms to the theoretical argument that the higher the BR, LR or CSR, the higher is the risk premium. However, no definite relationship between CPR and return was statistically established from this study although a positive correlation between them is theoretically desirable.

**E.** In Table 5, multiple correlation analysis and multiple regression analysis were made to investigate the joint effect of LR, CSR and CPR on the return of the selected companies during the period under study. The partial regression coefficients and the multiple correlation coefficients were tested using t test and F test respectively. The regression equation that was fitted in this study is:  $ROCE = b_0 + b_1.LR + b_2.CSR + b_3.CPR + e$  where  $b_0$  is the intercept,  $b_1$ ,  $b_2$  and  $b_3$  are the partial regression coefficients and  $e$  is the error term.. Table 5 discloses that for one unit increase in each LR and CSR, the ROCE increased by 4.567 units and 8.239 units respectively which were found to be statistically significant at 0.05 and 0.01 levels respectively. These outcomes again corroborate the theoretical argument that the higher the degree of LR or CSR, the higher the risk premium. However, the ROCE increased by 0.298 unit for one unit increase in CPR which was not found to be statistically significant even at 0.05 level. It indicates that the outcome mismatches with the generally accepted principle that the higher the CPR, the higher the return. Table 5 also shows that the multiple correlation coefficient of ROCE on LR, CSR and CPR was 0.349 which was found to be statistically significant at 0.01 level. This table also reveals that the selected influencing factors LR, CSR and CPR contributed 12.18 % of the variation in the ROCE.

### Concluding Observations

- 1) The highest volatility in operating profitability was observed in paints & varnishes industry while industry producing breweries & distilleries enjoyed the least risk associated with its overall business operation during the study period. 55 per cent of the selected industries maintained their BR at the level 'below the Indian manufacturing industry average' whereas the remaining 45 per cent of the selected ones kept themselves at the level 'above the Indian manufacturing industry mean' in the same period.
- II) 55 per cent, 55 per cent and 45 per cent of the selected



industries maintained their LR, CSR and CPR respectively at the levels 'below the Indian manufacturing industry averages' while the remaining 45 per cent, 45 per cent and 55 per cent kept themselves at the levels 'above the manufacturing industry averages' during the period under study.

- III) Food processing industry faced the highest risk in respect of liquidity while the second and twelfth ranks were occupied by it in respect of CSR and CPR respectively during the study period. Similarly, computer – hardware industry bore the maximum risk on capital productivity front while in respect of CSR and LR the company was able to find place almost on the middle-benches by occupying the eighth and ninth ranks respectively. However, paints & varnishes industry occupied the first rank in respect of CSR, second rank in respect of LR and third rank in respect of CPR in the same period. Breweries & distilleries industry captured the eighteenth, nineteenth and fifth ranks in respect of LR, CSR and CPR respectively. Glass & glass products producing industry was placed on the back-benches by occupying the twentieth rank in respect of CPR, ninetieth rank in respect of LR and seventeenth rank in respect of CSR. Pharmaceuticals industry enjoyed low degree of risk in capital productivity front by occupying fourteenth rank whereas the fourth highest volatility and the fifth highest volatility were found in liquidity and cost structure fronts of the industry respectively during the period under study. This kind of disparity was observed in most of the industries under study. So, lack of uniformity among LR, CSR and CPR of the selected industries was noticed during the study period. The outcome of the analysis of Kendall's coefficient of concordance made in this study provides evidence for the correctness of the above inference.
- IV) The uniformity in respect of risk-return trade off among the selected industries was not at all present during the study period. Rather in many cases peculiar blends of risk and return were observed. Paints & varnishes, personal care and pharmaceuticals industries proved themselves as aggressive risk-taker as they were placed in high risk-high return category in respect of BR, LR and CSR during the period under study. Mining & minerals industry was recognized as a moderate risk taker and

profit hunter as it found place in moderate risk-high return class in respect of BR, LR and CPR while breweries & distilleries industry was risk averse but profit hunter as it was placed in the most desirable category i.e. low risk-high return class. Tyre industry, bearing high risk in respect of BR as well as LR and yielding low return, faced a severe crisis in respect of generation of sales revenue and payment of short term debt during the study period. Therefore, the companies operating in this industry should either reexamine their abilities to continue in the sector or think seriously about adopting any diversification strategy. Although the levels kept by computers – hardware, consumer goods – electronic and food processing industries in respect of BR and its company-specific components fluctuated widely from low to high, they proved themselves as profit-hunter during the period under study. As engineering – heavy industry found place in the low risk-moderate return category in all the cases and leather products industry in almost all the cases, they were considered as risk averse but were not aggressive in generating operating surplus. Moderate volatility in operating profitability, short term debt paying capability and revenue generating capability of paper industry was not at all well compensated as it could not find place in high or moderate return strata. Glass & glass products was the only industry among the selected ones which was risk averse as well as reluctant to generate high return as it maintained a blend of low risk and low return in all the cases during the study period.

- V) A 'high-high' combination of BR or its company-specific components and return is theoretically desirable. The empirical results obtained from the analysis of interrelation as made in this study using two correlation measures provide strong evidence of positive relationship between risk and return in most of the cases. The study of multiple regression of ROCE on LR, CSR and CPR also provides strong evidence of the significant positive influence of LR and CSR on operating profitability implying that in the said cases high risk was well compensated by high risk premium i.e. high return in the selected companies during the period under study.

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**Table 1: Ranks of Business Risk of the Selected Industries in India**

Serial No.	Industry	Business Risk	Status	Rank
1	Breweries & Distilleries	0.121	B	20
2	Cement	0.175	B	13
3	Ceramics & Granite	0.161	B	16
4	Chemicals	0.181	B	11
5	Computers - Hardware	0.213	A	7
6	Consumer Goods-Electronic	0.173	B	14
7	Domestic Appliances	0.215	A	5
8	Engineering - Heavy	0.127	B	19
9	Fertilizer	0.193	A	9
10	Glass & Glass Products	0.129	B	18

11	Food Processing	0.183	B	10
12	Infrastructure - General	0.214	A	6
13	Leather Products	0.156	B	17
14	Mining & Minerals	0.179	B	12
15	Paints & Varnishes	0.256	A	1
16	Paper	0.168	B	15
17	Personal Care	0.237	A	3
18	Pharmaceuticals	0.246	A	2
19	Steel - Large	0.196	A	8
20	Tyres	0.216	A	4
Indian Manufacturing Industry Average		0.187		

'A' denotes 'Business Risk above the Indian Manufacturing Industry Average' and 'B' denotes 'Business Risk below the India Manufacturing Industry Average'

Source: Compiled and computed from 'Capitaline Corporate Database' of Capitaline Market Publishers (I) Ltd., Mumbai.

**Table 2: Ranks of Company-specific Components of Business Risk of the Selected Industries in India**

Serial No.	Company	Liquidity Risk (LR)			Cost Structure Risk (CSR)			Capital Productivity Risk (CPR)		
		LR	Status	Rank	CSR	Status	Rank	CPR	Status	Rank
1	Breweries & Distilleries	0.127	B	18	0.011	B	19	0.196	A	5
2	Cement	0.185	B	10	0.037	B	10	0.202	A	2
3	Ceramics & Granite	0.151	B	16	0.018	B	16	0.169	A	8
4	Chemicals	0.174	B	14	0.029	B	12	0.163	A	9
5	Computers- Hardware	0.193	A	9	0.047	A	8	0.257	A	1
6	Consumer Goods Electronic	0.168	B	15	0.020	B	15	0.112	B	17
7	Domestic Appliances	0.210	A	5	0.069	A	4	0.183	A	6
8	Engineering- Heavy	0.119	B	20	0.009	B	20	0.104	B	19
9	Fertilizer	0.201	A	8	0.055	A	7	0.197	A	4
10	Glass & Glass Products	0.124	B	19	0.017	B	17	0.101	B	20

11	Food Processing	0.293	A	1	0.089	A	2	0.154	B	12
12	Infrastructure-General	0.204	A	6	0.056	A	6	0.129	B	15
13	P Leather Pr Products	0.144	B	17	0.016	B	18	0.111	B	18
14	Mining & Minerals	0.183	B	11	0.032	B	11	0.155	B	11
15	Paints & Varnishes	0.261	A	2	0.097	A	1	0.199	A	3
16	Paper	0.180	B	12	0.027	B	13	0.161	A	10
17	PP Personal Care	0.240	A	3	0.075	A	3	0.179	A	7
18	Pharma	0.231	A	4	0.068	A	5	0.141	B	14
19	Steel - Large	0.175	B	13	0.022	B	14	0.128	A	16
20	Tyres	0.203	A	7	0.046	A	9	0.146	B	13
Indian Manufacturing Industry Average		0.189			0.043			0.159		

'A' denotes 'LR/CSR/CPR above the 'Indian Manufacturing Industry Average' and  
'B' denotes 'LR/CSR/CPR below the 'Indian Manufacturing Industry Average'

Kendall's coefficient of concordance among the selected company-specific components of business risk ( $W$ ) is 0.1185 and Chi-square ( $\chi^2$ ) value of  $W$  is 6.7545 being insignificant at 0.05 level.

**Source:** Compiled and computed from 'Capitaline Corporate Database' of Capitaline Market Publishers (I) Ltd., Mumbai.

**Table 3.1: Risk-return Status of the Selected Industries in India based on combination of Business Risk and Return**

Business Risk \ ROCE	High ( $\geq 30\%$ )	Moderate (>15% but <30%)	Low ( $\leq 15\%$ )
	High ( $\geq 0.20$ )	Computers – Hardware, Paints & Varnishes, Personal Care, Pharmaceuticals	Domestic Appliances, Infrastructure – General
Moderate (>0.15 but <0.20)	Consumer Goods-Electronic, Food Processing, Mining & Minerals	Cement, Ceramics & Granite, Chemicals, Fertilizer, Leather Products, Steel - Large	Paper
Low ( $\leq 0.15$ )	Breweries & Distilleries	Engineering – Heavy	Glass & Glass Products

**Source:** Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

**Table 3.2 : Risk-return Status of the Selected Industries in India based on the combination of Liquidity Risk and Return**

LR \ ROCE	ROCE		
	High ( $\geq 30\%$ )	Moderate ( $>15\%$ but $<30\%$ )	Low ( $\leq 15\%$ )
High ( $\geq 0.20$ )	Processing, Paints & Varnishes, Personal Care, Pharmaceuticals	Domestic Appliances, Fertilizer, Infrastructure – General	Tyres
Moderate ( $>0.15$ but $<0.20$ )	Computers – Hardware, Consumer Goods-Electronic, Mining & Minerals	Cement, Ceramics & Granite, Chemicals, Steel - Large	Paper
Low ( $\leq 0.15$ )	Breweries & Distilleries	Engineering – Heavy, Leather Products	Glass & Glass Products

*Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.*

**Table 3.3 : Risk-return Status of the Selected Industries in India based on the combination of Cost Structure Risk and Return**

CSR \ ROCE	ROCE		
	High ( $\geq 30\%$ )	Moderate ( $>15\%$ but $<30\%$ )	Low ( $\leq 15\%$ )
High ( $\geq 0.065$ )	Food Processing, Paints & Varnishes, Personal Care, Pharmaceuticals	Domestic Appliances	
Moderate ( $>0.035$ but $<0.065$ )	Computers – Hardware	Fertilizer, Infrastructure -General, Cement	Tyres
Low ( $\leq 0.035$ )	Breweries & Distilleries, Consumer Goods-Electronic, Mining & Minerals	Ceramics & Granite, Chemicals, Steel – Large, Engineering – Heavy, Leather Products	Glass & Glass Products, Paper

*Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.*

**Table 3.4: Risk-return Status of the Selected Industries in India based on the combination of Capital Productivity Risk and Return**

ROCE \ CPR	High (≥ 30%)	Moderate (>15% but<30%)	Low (≤ 15%)
High (≥ 0.20)	Computers – Hardware	Cement	
Moderate (>0.15 but<0.20)	Food Processing, Paints & Varnishes, Personal Care, Breweries & Distilleries, Mining & Minerals	Domestic Appliances, Fertilizer, Ceramics & Granite, Chemicals	Paper
Low (≤ 0.15)	Pharmaceuticals, Consumer Goods- Electronic	Infrastructure -General, Steel - Large, Engineering - Heavy, Leather Products	Tyres, Glass & Glass Products

*Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.*

**Table 4 : Analysis of Relationship between Risk and Return of the Selected Companies in Indian Industry**

Correlation Measure \ Correlation Coefficient between	Business Risk and Return	Liquidity Risk and Return	Cost Structure Risk and Return	Capital Productivity Risk and Return
Pearson	0.2134*	0.2569*	0.2123*	0.0561
Spearman	0.2312*	0.3001**	0.3015**	0.1214

\*Significant at 0.05 level. \*\* Significant at 0.01 level.

*Source : Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.*

**Table 5 : Analysis of Multiple Regression and Multiple Correlation of Return on Company-specific components of Business Risk of the Selected Companies in the Indian Industry**

<b>Multiple Regression Equation of ROCE on LR, CSR and CPR:</b>		
$ROCE = b_0 + b_1 \cdot LR + b_2 \cdot CSR + b_3 \cdot CPR + e$		
<b>Variable</b>	<b>Partial Regression Coefficient</b>	<b>t Value</b>
LR	4.567	2.512*
CSR	8.239	3.018**
CPR	0.298	1.006
Constant	12.015	7.719
<b>Multiple Correlation Coefficient of ROCE on LR, CSR and CPR:</b>		
$R_{PLCC} = 0.349$		
$R^2_{PLCC} = 0.1218$		
$F = 4.4382^{**}$		

\*Significant at 0.05 level.

\*\* Significant at 0.01 level

*Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.*

### Appendix 1

<b>Industry</b>	<b>Sl. No.</b>	<b>Company</b>
I. Breweries & Distilleries	1.	United Spirits
	2.	United Breweries
	3.	Radico Khaitan
	4.	Som Distilleries
	5.	Tilaknagar Industries
II. Cement	1.	Ultra Tech Cement
	2.	Ambuja Cement
	3.	Shree Cements
	4.	ACC
	5.	Ramco Cements
III. Ceramics & Granite	1.	Kajaria Ceramics
	2.	Cera Sanitaryware
	3.	HSIL
	4.	Somany Ceramics
	5.	Asian Granito





IV. Chemicals	1.	Pidilite Industries
	2.	UPL
	3.	Tata Chemicals
	4.	Gujarat Flouro Chemicals
	5.	Solar Industries India
V. Computers - Hardware	1.	CMC
	2.	Redington (India)
	3.	Ricoh India
	4.	HCL Infosystems
	5.	Spice Mobility
VI. Consumer Goods - Electronic	1.	Videocon Industries
	2.	Mirc Electronics
	3.	Sharp India
	4.	PG Electroplast
	5.	BPL
VII. Domestic Appliances	1.	TTK Prestige
	2.	Sunrise Asian
	3.	Bajaj Electricals
	4.	Hawkins Cooker
	5.	Panasonic Appliances India
VIII. Engineering - Heavy	1.	AIA Engineering
	2.	Triveni Turbine
	3.	Sanghvi Movers
	4.	TD Power Systems
	5.	Praj Industries
IX. Fertilizer	1.	Coromandel International
	2.	Gujarat State Fertilizer & Chemicals
	3.	Rashtriya Chemicals & Fertilizers
	4.	Chambal Fertilizers & Chemicals
	5.	Fertilizers and Chemicals Travancore
X. Glass & Glass Products	1.	Asahi India Glass
	2.	La Opala RG
	3.	Empire Industries
	4.	Borasil Glass Works
	5.	Saint-Gobain Sekurit

XI. Food Processing	1.	Nestle India
	2.	Glaxo Smith Consumer Healthcare
	3.	Britannia Industries
	4.	KRBL
	5.	Hatsun Agro Products
XII. Infrastructure - General	1.	Larsen & Toubro
	2.	Adani Ports & SEZ
	3.	BHEL
	4.	Siemens
	5.	ABB
XIII. Leather Products	1.	Bata India
	2.	Relaxo Footwears
	3.	Mirza International
	4.	Bhartiya International
	5.	Liberty Shoes
XIV. Mining & Minerals	1.	Coal India
	2.	Sesa Sterlite
	3.	NMDC
	4.	MOIL
	5.	Gujarat Mineral Development Corporation
XV. Paints & Varnishes	1.	Asian Paints
	2.	Berger Paints
	3.	Kansai Nerolac
	4.	Akzo Nobel India
	5.	Shalimar Paints
XVI. Paper	1.	International Paper APPM
	2.	Ballarpur Industries
	3.	Tamil Nadu Newsprint & Papers
	4.	Rainbow Papers
	5.	JK Paper
XVII. Personal Care	1.	Hindustan Unilever
	2.	Dabur India
	3.	Godrej Consumer Products
	4.	Colgate Palmolive (India)
	5.	Marico
XVIII. Pharmaceuticals	1.	Sun Pharmaceutical Industries
	2.	Lupin
	3.	Dr. Reddys Laboratories
	4.	Cipla
	5.	Aurobindo Pharma



XIX. Steel-Large	1.	Tata Steel
	2.	SAIL
	3.	JSW Steel
	4.	Steel Exchange of India
	5.	Visa Steel
XX. Tyres	1.	MRF
	2.	Apollo Tyres
	3.	Balkrishna Industries
	4.	Ceat
	5.	JK Tyre & Industries

# Effectiveness of Microfinance on Women Empowerment in Bilaspur: A Study

Kabir  
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## Abstract

*The main purpose of this study is to measure the effectiveness of Microfinance on Women Empowerment in Bilaspur city of Chhattisgarh. The objective of the study is to assess the impact of microfinance on women empowerment by evaluating the perception of women beneficiaries of various MFIs. Another one is to suggest possible measures to get the best outcome of microfinance in terms of women empowerment in the area of study.*

*This study is descriptive in nature, based on primary data collected from beneficiaries of microfinance institutions with published and unpublished reviewed secondary data. Findings of the study revealed that microfinance has played a significant role in enhancing the women empowerment in Bilaspur city. And it is effectively contributing towards the upliftment of the women in the society by increasing their role and involvement in decision making factors like family planning, girl child education, children marriage, self confidence in the family and society as well.*

*This study will help the policy makers to frame out new policies to develop the status of microfinance in the state and this will ultimately contribute in the upliftment of women in the society by bringing them towards the doorstep of empowerment. Also to frame policies by keeping in mind the needs and demands of the women beneficiaries from the microfinance institutions.*

## Key Words

*Microfinance, Women Empowerment, Microfinance Institutions (MFIs)*

## Introduction

It is the perception of people that microfinance is a movement of providing micro credit to that marginalised section of the society who do not have access to formal banking system. And it is the need of the time to incorporate the marginalised section of the society into the main stream for equitable development of the society.

The Asian Development Bank has also been actively promoting best practices and innovative techniques in the area of Microfinance in its strategy 2020. It is doing so through loans, credit lines, investments, grants, guarantees, technical assistance in areas relating and allied to Microfinance and Financial Inclusion.(2014 Project Classification Scheme).

## Major Delivery Models of Microfinance in India

- 1) Self-Help Group (SHG) Bank Linkage Program.
- 2) Microfinance Institutions (MFIs)

In terms of outreach particularly in India Self-Help Group model leads the race. However in the international picture its MFI model which has greater outreach and is preferred



by most of the countries as a tool for women empowerment.

### **Women Empowerment**

The UN Women Annual Report 2015-16, emphasizes reaching and supporting the poorest and most marginalized women—many of whom increasingly face emerging challenges such as climate change and migration. It supports laws and policies that strengthen women's economic opportunities and advocate for equitable access to services that enhance their livelihoods such as water, energy, transport and green technology.

### **Objective of the Study**

- ✳ To study the impact of microfinance on women empowerment in the Bilaspur city of Chhattisgarh.
- ✳ To provide suggestion and possible measures to improve the status of women empowerment through microfinance.

### **Literature Review**

Das (2016) WSHGs are mainly expected to empower rural marginalized women. Micro-Finance has emerged as one of the most sustainable and effective tools for enabling the poor and disadvantaged sections of the society basically for rural women, to have access to institutional credit.

Jhavar and Chawla (2015) recommended in their study that to get positive output from micro entrepreneur the Microfinance Institutions should observe their interest rate policies and provide easy accessibility of the same.

Vachya and Kamaiha (2015) in their empirical examination revealed that SHG Bank Linkage Program has a positive impact on household decision making by women. It has also brought positive changes in terms of marital status, income, family type, including economic factors. The microfinance has positively altered the living conditions of SHG members including women members.

Kato and Kratzer (2013) in their study concluded that traditionally the position of women in Tanzania has been low in comparison to men. The survey was conducted on 454 women in the area of study (305 members of MFIs and 149 non-members). The results of the study shows significant distinction between the women members of MFIs and non-

members in the dependant variables associated to women empowerment. Women members of MFIs have more control over savings and income generated from the business, greater role in decision-making, greater self-efficacy and self-esteem, and greater freedom of mobility and increased activities outside home.

Anal (2013) in his study concludes that microfinance SHGs are necessary to overcome exploitation, create confidence, for financial self dependence of the rural people, especially among women who are deprived section of the society.

Dobra (2011) said that it allows holistic development by increasing the income of the entire family, which has reflection throughout the economy and society as a whole at every level. However, to improve their effectiveness, microfinance programs should focus on enhancing their related adaptation and the political issues.

Muhammad, Shaheen, Naqvi, and Zehra (2011) highlighted the role and effectiveness of microfinance in women empowerment. The data used for this study were collected from Women empowerment index (WDI) and the book of Pakistani statistics. An empirical investigation was carried out by using Johansen co integration approach to evaluate the long-term correlation between poverty, growth, and microfinance and women empowerment. To analyze women empowerment, a study index was designed. The results of this study established that there is a positive and significant correlation between women empowerment and the selected variables with respect to Pakistan.

Noreen (2011) in her study made an attempt to explore the socio economic factors of women empowerment in which microfinance is crucial economic determinant. This study used regression analysis based on primary data of Bahawalpur City to check the relationship of different socio economic determinants on women empowerment. Women empowerment measured by constructing simple index using five indicators related to child health, education, selection of spouse of children, purchase of basic goods and decision about the use of loan. The results show that women empowerment is significantly influenced by age, education of husband, father inherited assets, marital status, number of sons alive and microfinance. Age, education of husband, no of live sons and father inherited assets are more statistically significant

variables in this study. It is also concluded that as microfinance is major explanatory variable in this study has some positive role in empowerment but not as much as was expected by the researcher. It is suggested that education facilities and family protection must be provided in proper way. Microfinance institutions should strengthen and expand their support to resource poor women.

Guerin, Kumar, and Agier (2010) in their case study focus on the need to go ahead of the basic opposition between domination versus agency, and to do detail examination on how these two dimensions of power relate. They also observed that discourses on women lay emphasis on a conception of power as agency. So far as women's status is dependent on their husband's position and on women's relative position in relation to other women, both due to cultural ideologies and material constraints, 'power to' necessarily implies a certain form of 'power over', this mainly over other women.

Espallier, Guerin, and Mersland (2009) analyses gender-differences with respect to microfinance repayment rates using a large global dataset covering 350 Microfinance Institutions (MFIs) in 70 countries. The results show that more women clients are connected with lower portfolio-at-risk, lower write-offs, and lower credit-loss provisions, *ceteris paribus*. These findings confirm common believes that women in general are a better credit-risk for MFIs. Interaction effects reveal that the effect is stronger for NGOs, individual-based lenders, 'finance plus'-providers and regulated MFIs. This indicates that two types of MFIs benefit more than others from focussing on women: First, those MFIs that develop hands-on, women-friendly procedures tailored to individual women's need, and second, those MFIs that apply coercive enforcement methods to which women are more responsive.

Reji (2009) in his study concluded that the microfinance through SHG model has shown visible economic impact on saving habits, household income, and acquisition of household assets. It also has positive impact on social factors like increased role in household decision making, improved status and self confidence, ability to deal with adversities, and community involvement.

Amin and Choudhary (2008) concluded that Microfinance is not a panacea to tackle all the causes of poverty and it may take a long time to bring about gender equity and women's

empowerment.

Sharma (2007) revealed that microfinance leads to empowerment of women's participating in it. This study is conducted in Nepal and studies the effects of women's participation in group-based micro-credit programs from large population providing qualitative responses. Microfinance has enlarged the role of women in household decision-making, giving greater access to financial resources, now they can convince their husband on various issues and having greater freedom of movement. Due to microfinance movement the level of communication between husband and wife in family has improved. Ecologically, the higher impact on women's empowerment was noticed in terai. The reason may be quite lower social-economic status of terai women at the time when the program was started as compared to that of hill areas. Due to this fact, even a little change in their status is reflected highly.

Dessy and Ewodou (2006) in their paper shows that access to microfinance services becomes only necessary, but not sufficient for female empowerment. Based upon a game-theoretic model of activity choices by *ex ante* homogenous women, they argued that conditioning well-trained women's access to credit to the adoption of high-productivity activities may enable MFIs to bring on the emergence of networks of female entrepreneurs large enough to mitigate patriarchal practices that raise the costs of operating such activities in the informal economy.

Reddy and Manak (2005) has outlined several areas of working with SHGs to further their impact on civil society. It should be noted though that the sustainability of SHGs to effect such change is directly linked to their financial sustainability. While this latter issue was not the intended focus on the report, any external intervention to SHGs should bear this issue in mind. Thus, it is important that both government and NGOs work to bear all the costs in mind of interventions to make them sustainable otherwise the SHGs will be overburdened and destined to failure.

Littlefield, Murdudh, and Hashemi (2003) said that the beauty of microfinance is that, as programs approach financial sustainability, they can reach far beyond the limits of scarce donor resources.

## Research Methodology

A research design refers as the framework or plan for a study that guides as well as helps in data collection and analysis of the data. Researcher have used structured questionnaire and a five point balanced Likert scale for measuring the perception of women beneficiaries towards impact of microfinance on women empowerment.

Primary data was collected from respondents of Bilaspur city, Chhattisgarh through a questionnaire designed for a sample of 150 respondents. Snowball sampling method was adopted by the researcher and selected the sample from Bilaspur region. The data collected from the respondent are coded, tabulated and analyzed into logical statement using mean and percentage analysis. Secondary data was collected from the available literature, journals and web search wherever necessary. The questionnaire method was chosen for its versatility speed and cost benefits. Due to shortage of time the researcher has used only descriptive statistical tools—mean and percentage to arrive at findings and conclusion.

## Data Analysis and Interpretation

### Demographic profile:

Demographic profile of respondent with mean scores (N=150) (Table1)

Age	No. of respondents	Occupation
	Female	
20-30	48	Small Entrepreneurs and SHGs members.
31-50	74	
51 and above	28	

Table1. Depicts the demographic information about the respondents selected for the study. No. of beneficiaries selected for the purpose of the study as sample are 150. On the basis of age of the respondents three categories are prepared for classification. No. of respondents in the category one (between 20 to 30 years) are 48. No. of respondents between 31 to 50 years are 74 and respondents whose age is above 51 years are 28. This shows that majority of respondents belong to age group of 31 to 50 years. The respondents are

female beneficiaries from Microfinance Institutions and are mainly entrepreneurs and members of Self Help Groups.

### Family Planning Decision (Table 2)

Microfinance has increased the women role in the decisions relating to family planning:

	Rating scale	% of respondents	Mean score
5	Strongly Agree	51	4.01 (> 4.0 =5)
4	Agree	27	
3	Neither Agree nor Disagree	2	
2	Disagree	12	
1	Strongly Disagree	8	
	Total	100	

Table2. The data from the table shows that 51% of the respondents are strongly agreed that Microfinance has increased the role of women in the decision relating to the family planning. 27% of them are agreeing for the same. However, 20% does not coincide with the increase in role of women in family planning decisions. It is clearly evident from the responses that microfinance has positively affected the role of women in decision making related to family planning. The results of the study are in line with the one performed by Noreen in 2011. Involvement in family planning decision is a strong factor of women empowerment in the society and can be considered as one of its primary indicator.

### Immovable property decisions (Table 3)

Microfinance has increased the role of women in the decisions relating to acquiring and sale of immovable property:

Rating scale	% of respondents	Mean score
Strongly Agree	15	2.65 (>2.6 =5)
Agree	16	
Neither Agree nor Disagree	09	
Disagree	39	
Strongly Disagree	21	
Total	100	

Table3. The result of this table show that only 31% of the

respondents are agreeing to the statement that microfinance has increased the role of women's in decision making relating to immovable property. However the majority of the respondents, i.e. 60% disagree with the statement. And they feel that microfinance has not increased the role of women's in immovable assets decisions of their family and it is still dominated by the male members of the family. And the remaining 10% of them are indifferent towards the statement. Result of this question does not align with the study conducted by Kato and Kratzer, 2013 and is quite opposite of the same. It can be observed from the above data that microfinance does not have significant impact on women's role in decision making towards immovable property.

**Girl child education decision (Table 4)**

Microfinance has increased the role of women in the decisions relating to education of girl child in family:

Rating scale	% of respondents	Mean score
Strongly Agree	22	3.41 (>3.4 =5)
Agree	39	
Neither Agree nor Disagree	10	
Disagree	16	
Strongly Disagree	13	
Total	100	

Table4. The result of this table shows that around 60% of the respondents are agreeing to the statement that microfinance has increased the role of women's in decisions relating to girl child's education. However, around 30% of the respondents disagree with the statement. And they feel that microfinance has not increased the role of women's in girl child's education decisions of their family. It can be observed from the above data that microfinance does have a significant impact on women's decision making towards girl child's education. And the beneficiaries have felt increase in the level of their participation in the decisions of girl child education in the family. This can be treated as a strong indication of women empowerment in the society which is also supported by the microfinance movement in the area of study.

**Children's marriage decision (Table 5)**

Microfinance has increased the role of women in the decisions relating to their Children's marriage:

Rating scale	% of respondents	Mean score
Strongly Agree	15	2.97 (>2.9 =5)
Agree	28	
Neither Agree nor Disagree	17	
Disagree	19	
Strongly Disagree	21	
Total	100	

Table5. The result of this table shows that around 43% of the respondents are agreeing to the statement that microfinance has increased the role of women's in decisions relating to girl child's education. 17% of the respondents are indifferent towards the impact of microfinance on role of women's in children's marriage related decisions in the family. However, 40% of the respondents disagree with the statement. And they feel that microfinance has not increased the role of women's in decisions related their children marriage in their family. It can be observed from the above data that microfinance does not have very high impact on women's decision making towards their children marriages and a lot more is required be done in this segment for the empowerment of the women in the society. As girl child education is the most important factor leading to upliftment of women in society. And if it is backed up by the women involvement in such type of decisions the women empowerment will go higher and higher in the area. The result of this study coincides with the study conducted by Cheston and Kuhn.

**Self Confidence (Table 6)**

Microfinance has increased self confidence of women

Rating scale	% of respondents	Mean score
Strongly Agree	27	3.47 (>3.4 =5)
Agree	38	
Neither Agree nor Disagree	02	
Disagree	21	
Strongly Disagree	12	
Total	100	

Table6. The result of this table shows that 65% of the respondents are agreeing to the statement that microfinance has increased the self confidence of women in the area of the study. Whereas only 33% of the respondents disagree with





the statement and feel that microfinance doesn't have any impact on the self confidence of the women in the society. It can be concluded from the above data that microfinance does have a significant positive impact on self confidence among the women beneficiaries in the Bilaspur city. Which is a positive sign from the women empowerment perspective as self confidence is one of the most important factor for assessing the women empowerment. And the majority of the respondents agree with the statement and this can also be observed from the responses given by them. The result of this question coincides with the results of the study conducted by Sharma, 2007. Increase in the self confidence of women in the society will definitely support their journey of becoming more empowered as compared to past years. Also it is now the responsibility of beneficiaries to make the best possible use of the available funds with them in order to have better self confidence and satisfaction among them.

## Conclusion

Microfinance has the prospective of women's empowerment in its various policies. Although microfinance is not the only factor which is leading to women empowerment yet it is playing a vital role in the same. Microfinance has a positive impact on most of its women beneficiaries in terms of their empowerment. Empowerment is a compound process of positive change that is felt by all individuals somewhat differently.

Based on the results of this study, it can be concluded that by providing small loans without collateral securities to the women their empowerment and upliftment can be highly supported and increased through microfinance program. The socioeconomic determinants which lead to women empowerment are also analyzed in this study. The conclusion of this study is that the level of savings of women has developed after taking microfinance, their involvement in decisions relating to family planning has also increased, their role in decision making of immovable property related decisions is not up to mark. The women role in decision making towards birth control has been remarkably increased however their influence on decisions relating to children marriage is quite low even after taking microfinance. From the above the overall conclusion of the study can be stated as the microfinance has positively supported and contributed towards the empowerment of its women beneficiaries which not only boosts their financial stability but also leads them

to social security as well.

Loans given to women according to the procedure of microfinance institutions are not according to the age of women or their role in the family. In this study few women respondents make economic decision by themselves and use their loan by themselves. Microfinance loans do have positive effects on women domestic decision making but only for those females who utilize their loans themselves. Microfinance has supported enough empowerment among women because many of them are now self dependent and their role in various family decisions has also increased.

While planning for their policies, products and services microfinance institutions primarily focus on women because of the fact that their access level of formal credit is quite low as compared to male and they also face social constraints due to their gender. Credits offered through microfinance should be based on women need, expenses, assets etc. They should create awareness among the targeted marginalised women so that they can make the best possible benefit of the microfinance schemes and also to diminish the negative aspects of it. Even after so much concentration towards inclusion of women and their empowerment the desired outcome has not been achieved and there is a lot more to be done. Even in today's scenario women in remote areas face several constraints as compared to men due to limited opportunities, lesser outreach, domestic responsibilities, restrictive social environment, less or no education and many more. This disadvantage is sometimes more backed up by groups where men are dominated while getting the major loan sharing and women getting very lesser amount.

To sum-up, in a developing state like Chhattisgarh, poverty alleviation has always been the primary objective of development planning since its separation from Madhya Pradesh, through various government schemes and policies. Both the central as well as State Governments have framed and introduced different types of poverty alleviation programmes both for self employment and wage employment. The appearance of Micro-finance provides a mode for achieving this by optimal utilisation of the available financial resources. The thrust is on employment generation, with keeping in mid the need of the society subjected several constraints in the path. Microfinance institution should be viewed as one of the contributor in the path of the socio-economic development

especially for the disadvantages weak and poor women in the state. Of course in comparison to Chhattisgarh it is more successful in states like Punjab, Tamil Nadu, Gujrat, Rajasthan and Andhra Pradesh. It is not an overstatement to say that the microfinance movement in various countries including India in general and Chhattisgarh in particular may be considered as a mile stone and a turning point towards women empowerment, upliftment and societal development.

### Suggestions

In the light of above research conducted, following are the policy recommendation. Microfinance institutions should be supported and developed. They should develop their support to aid poor women in the society. Microfinance institutions should take periodic and systematic meeting of beneficiaries in order to make them aware of government policies on their status. They should also educate them towards the optimum utilisation of loan funds available to them, about the benefits of savings and also to guide them the possible ways to strengthen their socio economic status in the society. The microfinance institutions and government agencies should work in collaboration to address such issues of marginalised peoples. The policy makers should not only focus on immediate betterment of the women while drafting policies and schemes but should also frame that in such a manner that it can lead to long term, equitable, justifiable and sustainable growth of the women in the society.

### Limitations of the Study

The present study is an attempt to develop an understanding of the impact of microfinance on women empowerment in the area of study and knowledge of literature of microfinance on the grounds of reality. Since the research is a part of learning process, the area included in the study is very small and based on limited sample size too. It is also due to the time and money constraint which forms major limitation of the study. Being descriptive in nature the area and samples drawn for the study can be treated as simple illustrative attempt in the vast literature of microfinance. So, further more comprehensive and empirical studies are essential for confirming and enhancing the results of this study. This study excludes some important aspects related to self help groups like their periodic savings, internal lending, repayment schedule; as sample consists of individuals belong to groups with different maturity periods

and also who get direct lending from MFI's. The study can be extended by following more appropriate sampling like stratified sampling and also by including more samples from SHGs and non SHGs beneficiaries to improve the effectiveness of the study. Best efforts have been done to throw the light on real picture of the objectives of the study with in the boundary of time and money constraints.

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# Firm Specific Factors of Corporate Capital Structure: An Empirical Study with reference to Select Indian Companies

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Debdas Rakshit

## Abstract

The purpose of this study is to identify the most significant factors in determining the capital structure of the selected companies in India and acceptability of these factors in the light of the propositions formulated by the three important capital structure theories, namely, the pecking order, the trade-off and the agency cost theory. According to the objectives of the study, eighty non-financial firms from a heterogeneous set of Indian industries are selected on the basis of highest turnover and availability of 12 years balance panel data set running from 2000-01 to 2011-12. Along with leverage as dependent variable, eight independent variables, namely, profitability, size, growth, tangibility, non-debt tax shield, income variation, liquidity and uniqueness are used to analyze their influences and explaining power on leverage. Finally, panel data random effect model is selected as an appropriate specification to analyze the regression equation. Finding of the study reveals that profitability, size, growth, tangibility, liquidity and uniqueness are found to have significant influence on the leverage of the selected firms in India. The current study also reveals that most of the factors are mainly in line with the pecking order theory and there is a small evidence to support either the trade-off theory or the agency cost theory.

## Key Words

Trade-off Theory, Pecking Order Theory, Agency Cost Theory, Capital Structure Determinants, Panel Data

## Introduction

The catastrophic slow-down of global economic conditions has left the Indian companies, particularly export oriented ones, in a survival situation causing them to re-set the strategies for the changed circumstances; have been putting pressure on the managements to maintain the sustainability of their organization in a befitting way considering costs, benefits, risks etc., the consequence of which is re-structuring of the capital structure of their firms. So, the capital structure decision is a sine qua non for a firm to strike for going ahead in the proper direction.

Capital structure of the firm is the combination of several alternatives of debt and equity that have to be utilized for the purpose of creation of a pool of fund and to finance a company's assets (Bhaduri, 2002). Theory of capital structure advocates that the firm determines what is often referred to as an appropriate debt ratio, taking into account the balance between costs and benefits of debt verses equity. Pandey, Ranjit and Chotigent, (2000), suggest that the combination



of debt and equity in the capital structure involves a trade-off between financial risk and return. Therefore, great care should be initiated for the selection of funds and formation of debt equity mix, as capital structure with an excessive debt ratio implies high risk for greater dependency on outsiders; results in a survival problem of the firm, while a large share of debt ratio in capital structure not only deprives the shareholders of better return, but it also affects the firm-value adversely. Thus, with a view to avail full advantage of funds, it is desirable to strike a proper balance between debt and equity in the capital structure.

Many studies have been made in the field of capital structure and gaining its importance gradually, mainly after the influential irrelevance theory of Modigliani and Miller (1958). They are the pioneer of the modern theory of capital structure and explore the extensive body of financial literature in this area. According to them, value of the firm remains constant irrespective of the level of leverage. However, earlier concept of MM hypothesis has been relaxed by incorporating corporate tax into account and recognized that the value of the firm will change with the using of debt in the capital structure on account of tax shield on interest on debt. However, MM theory has been criticized from different angles due to its irrelevancy propositions and consequently this has given birth to other important capital structure theories.

The trade-off theory of capital structure proposes that the optimum combination of debt ratio can be obtained by balancing between costs and benefits of debt, i.e. how much funds to be financed from alternative sources in order to balance costs of funds with benefits derive from funds (Miller, 1977). The pecking order theory deals with the relationship between asymmetric information and financial decisions. Therefore, due to information asymmetry problems, management of the firm follows a hierarchical order of financing in capital structure choice, with a preference of retained earnings as the primary source of financing if it is not adequate to fulfill the requirement then debt is the next best preferred source of financing over equity (Myers and Majluf, 1984). In the mid of 70's Jensen and Meckling (1976) and Myers (1977) have highlighted on the agency cost. Where, they demonstrate that the determination of capital structure choice is associated with the agency cost, which arises due to conflicting interest between managers, shareholders and

debt holders of the firm. Many theories and empirical evidence have explained the existence of optimal capital structure in the real world, but none of them yet provides specific guidelines to the financial officers for adopting an optimum combination of debt and equity. As, it does not remain static; varies continuously, so it can be better if the firm tries to attain reasonable combination, by changing the proportion of debt and equity. Once it is achieved, the firm would be able to attain a higher return than the return of a firm whose capital is formed of equity only.

In practice, it is observed that the decision on capital structure formulation or long-term financing of the firm is directly and indirectly influenced by multiple factors, which are very crucial for the financial wellbeing of the firm in the present situation. Once the important determinants are selected, management of the firm can provide a strong decision about capital structure choice with the help of those factors (Prasad et al. 1997). Moreover, determinants of capital structure play an important role in the selection of appropriate combinations of debt and equity of a firm, as it is acquainted with the financial environment within which the firm operates. At present, it is also an emerging issue to the corporate financial management as well as academicians. Nevertheless, most of the empirical researches have been undertaken on the basis of big firms and unlisted/small firms remained untapped. However, currently researchers have also interested to provide equal importance to the study on unlisted/small and medium size firms with big firms with a view to suggest a better understanding of their financial decision making, as SMEs have been playing a significant role in the coffer of the GDPs of developing economics.

In this situation an effort is initiated on Indian firms to shed some lights on the factors that are caused the choice of capital structure. Therefore, this research work undertakes study of the eighty firms' level data from different industries, selected on the basis of highest turnover and availability of twelve years balanced panel data commencing from 2000-2001 to 2011-2012. The aim of this study is to carry out an empirical analysis, using panel data methodology, to determine the factors affecting the capital structure decision of selected firms in India in the light of the three important capital structure theories namely, the trade-off theory, the pecking order theory and the agency cost theory.

The current study is organized into six sections, including the present one.

**Section Two** reveals the objectives of the research study. **Section Three** deals with extensive review of earlier literatures related to capital structure theories and their determinants. **Section Four** has been designed to present the research database and methodology. **Section Five** deals with empirical analysis and findings of the study based on panel data methodology. Finally, **Section Six** depicts the summary and conclusion of the present study covering all the remaining chapters.

### Objectives of the Study

Every research study must have some definite objectives which construct a guiding principle to the entire study. To be specific, the study attempts to address the following objectives:

- I. To identify the important firm specific factors of capital structure that have an impact on leverage ratio.
- II. To analyze the relationship of leverage with different financial indicators.
- III. To determine whether the selected firms are guided by a particular theory of capital structure in the decision making process.
- IV. Finally, to examine whether the findings based on overall observations provide any suggested guidelines to the Indian firm, regarding factors that influence capital structure significantly.

### Review of Literature

Many empirical studies have yet been made in India and outside India on different issues of capital structure. Most of the studies concentrate in the field of capital structure theory, particularly on the relevancy of Modigliani and Miller (1958) hypothesis. This was originally proved under the assumption of no taxes and developed capital structure irrelevancy propositions in a perfect capital market. Subsequently, earlier concept of Modigliani and Miller (1958) has been relaxed by incorporating corporate tax into account (Modigliani and

Miller, 1963), which recognized that the value of the firm will change with the using of debt in the capital structure on account of tax shield on interest on debt. Later, Myers (1977) incorporates personal taxes into account and argued that like corporate taxes, personal taxes also have an impact on capital structure choice. Study of Graham (2000) confirmed the argument and stated that each and every firm will try to strike a balance between the expected benefits and expected costs derived from taxes. Ultimately, MM theory has been criticized from different angles through many empirical and theoretical studies (e.g. Harris and Raviv, 1991, Myers, 2001) and therefore, three alternative theories of capital structure such as the trade-off theory, the pecking order theory and the agency cost theory have been emerged to overcome the problems of the earlier one.

According to the static trade-off theory, capital structure refers to the idea that a firm follows a target leverage ratio and behaves accordingly. In order to attain the target ratio, firm tries to strike a balance between tax benefits on debt with cost of financial distress and agency costs (Kraus and Litzenberger, 1973; Beattie et al., 2004). According to Baxter (1967), firms should use debt up to the point where benefits from tax shield becomes larger than the cost of debt.

However, it is observed that the static trade-off model is basically developed for single period planning; it fails to explore the consequences of the factors that have been putting into effects over more than one period. In order to overcome this constrains; the dynamic trade-off theory has been developed to incorporate the time effect factors into capital structure decision. In the dynamic trade-off theory, the capital structure choice is mainly depends on the combination of funds that the firm expect for the longer period (Fischer, Heinkel and Zechner, 1989). However, most of the recent study on the dynamic trade-off theory, such as Titan and Tsyplakov (2007), DeAngelo et al. (2011), Strebulaev and Whited (2012) have concentrated on target capital structure and estimate their speed of adjustment towards the target capital. As for the asymmetric information theory, the pecking order theory is the appropriate theory to meet the capital structure choices by the firm's inefficiency due to information asymmetry. The pecking order theory was first suggested by Donaldson in 1961 and it was modified by Myers (1984) and finally Myers and Majluf (1984). According to them, the pecking order theory deals with



preferential order of financing in capital structure decision and suggest that firms preferred to use retained earnings as the primary source of financing if it is not adequate to fulfill the requirement then prioritized debt as the next best source of financing over equity i.e. equity is the last resort of financing. In consistent with the above theory, Byoun and Rhim (2003) suggested that the small size firms are intended to follow the pecking order in their financial decision due to lower accessing capacity for generating funds from external sources. While, Choe et al., (1993) observed that a firm with better economy and lower information asymmetry can issue equity frequently. On the other hand, Titman (2005) and Stultz (1990) argue that the firm tries to avoid in issuing equity in order to minimize the transaction costs. Whereas, Myers and Majluf (1984), provide different opinion and suggest that firms are less interested to issue equity due to adverse selection problems. However, in conformity with the pecking order theory, the work of Rajan and Zingales (1995), Booth et al (2001) and Chen (2003) all observed an inverse relationship between Profitability and leverage of the firm.

Subsequently, the agency cost theory of capital structure relaxed the imperfection of MM propositions by incorporating agency costs into capital structure decision. According to the theory, determination of capital structure choice is associated with agency cost, which arises due to conflicting interest between managers, shareholders and debt holders of the firm (Fama and Miller, 1972 and Jensen and Meckling, 1976). Conflict between shareholders and managers may arise if managers of the firm undertake negative net present value or risky project without providing excess funds to shareholders in the form of dividend in order to increase managerial power and perks (Jensen and Meckling, 1976). According to Childs et al., (2005), managers of the firm have a tendency to continue the firm's operation even if it is preferred by the investor to have it liquidated.

On the other hand, conflict between shareholder and debt holder may arise if the accepted risky project is unsuccessful, then debt holders will bear most of the losses in the form of wealth transfer from debt holders to shareholders, while shareholders will bear minimum due to limited liability (Gavish and Kalay, 1983).

Determinant of capital structure is the major field in the corporate financial literature and growing its importance day

to day among the researchers. Prasad et al. (1997) suggested that if the potential factors of capital structure have been identified, then managers of the firm can take sound financial decision. The study has mainly concentrated on firm specific factors, that are selected on the basis of past empirical studies in the context of developed and developing countries. Some of the important studies in this field are, Titman and Wessels (1988), Rajan and Zingales (1995), Bevan and Danbolt (2002), Ozkan (2001), Shah and Khan (2007), Akintoye (2008), Ahmed et al (2010) and Gaud et al. (2005).

## Data Source and Methodology

### Data Source

According to the objectives of the study, eighty non-financial firms from a heterogeneous set of Indian industries are selected on the basis of highest turnover and availability of 12 years balance panel data set running from 2000-01 to 2011-12. The data for the study has been collected mainly from secondary data sources i.e. 'Capitaline 2000' database package. In addition to that, online data, magazines, periodicals, and published annual reports of the companies have also been consulted.

### Methodology

Selection of the panel data regression model is carried out among three estimation models namely, pooled OLS model, fixed effect model and random effect model. In this regard, study has considered decision making criteria as portrayed by Dougherty (2011). Therefore, regression models formed to make premise using panel data analysis are hinges on assumptions about the relationship between regressors and individual specific unobserved effect. If it is assumed that the unobserved individual effect and the regressors are uncorrelated then the random effect model will be more appropriate, on the other hand, if it is assumed that the unobserved individual specific effect and the regressors are correlated then the fixed effect model will be the appropriate specification for analysis. However, a panel data random effect regression model is specified as a suitable and appropriate specification for regression analysis after Hausman test between fixed effect model and random effect model and finally, Breusch Pagan LM test between random effect model and pooled OLS model.

STATA 12.1 software has been used to run the panel regression models and different statistical tests to determine the

relationship between leverage and their potential determinants as well as significance of the model.

Panel data regression models differ from a regular time series or cross sectional regression by the double subscript attached to each variable (Baltagi, 2005). In this study, panel data model for the empirical investigation can be formed as:

$$LEV_{it} = \beta_0 + \beta_1 (PF)_{it} + \beta_2 (SZ)_{it} + \beta_3 (GT)_{it} + \beta_4 (TG)_{it} + \beta_5 (NDTS)_{it} + \beta_6 (LIQ)_{it} + \beta_7 (IV)_{it} + \beta_8 (UNIQ)_{it} + \varepsilon_{it}$$

Where:  $\beta_0$  = constant,  $\beta_1$  to  $\beta_8$  = coefficient of explanatory variables.

$LEV_{it}$  = the leverage for firm  $i$  in time  $t$ , with firm level determinants such as:

Profitability (PF), Size (SZ), Growth opportunity (GT), Tangibility (TG), Non-Debt Tax Shield (NDTS), Income Variation (IV), Liquidity (LI) and Uniqueness (UNIQ). Where,  $\varepsilon_{it}$  = is the disturbance term, which is decomposed into  $\varepsilon_{it} = (\mu_i + v_{it})$  where,  $\mu_i$  is an individual specific random heterogeneity with mean zero and variance  $\sigma^2\mu$ , as well as the remainder disturbances ( $v_{it}$ ) have mean zero and variance  $\sigma^2v$ . Therefore,  $\mu_i \sim \text{IID}(0, \sigma^2\mu)$ ,  $v_{it} \sim \text{IID}(0, \sigma^2v)$  and regressors are assumed to be independent on both the  $\mu_i$  and  $v_{it}$  for every  $i$  and  $t$ .

## Measurement of variables

### Dependent Variable

**Leverage (LG):** In this study leverage means financial leverage which is considered as the only dependent variable. The broadest definition of leverage is the ratio of total debt to total assets. Ferri and Jones (1979) used total debt to total assets as the proxy of leverage in their empirical studies. While, Titman and Wessels (1988) measured debt ratio of the firm in the form of book values rather than market values. In this study, the financial leverage is calculated on the basis of the ratio of book values of total debt to book values of total assets.

### Independent variables

**Profitability (PF):** Profitability of the firm has been considered as a potential influencing factor because, firm prefers to use retained earnings as it is the quickest and easiest source of financing. In this study, the profitability will be defined as

earnings before interest and taxes (EBIT) divided by total asset.

**Hypothesis 1:** Profitability of a firm is negatively related to leverage.

**Size (SZ):** It is one of the most common factors used in explaining a firm's level of debt. According to the pecking order theory, the size of the firm is negatively related to leverage, which means larger firms' size leads to less debt financing. In this study, size will be defined as natural logarithms of net sales.

**Hypothesis-2:** Size of a firm is positively related to leverage.

**Growth (GT):** The pecking order theory suggests that the growing firms prefer to use retained earnings as their primary source of financing, and then go on using debt over equity financing. According to the theory, growth opportunity of the firm is positively related to leverage; this implies that higher growth rate leads to higher demand for funds. Whereas, the agency cost theory observes inverse relationship. In this study, growth opportunity of the firm has been measured on the basis of percentage change in total assets.

**Hypothesis-3:** Growth opportunity of a firm is negatively related to leverage.

**Tangibility of Assets (TG):** According to Harris and Raviv (1991) and Titman and Wessels (1988), the higher is the tangibility of the asset, the better is the company liquidation position; and their view is supported by the trade-off theory as well as the agency cost theory. Though, the pecking order theory provides different opinion. In this analysis, tangibility of assets is defined as gross fixed assets divided by total assets.

**Hypothesis-4:** Tangibility of a firm is positively related to leverage.

**Non-Debt Tax Shield (NDTS):** According to the trade-off theory, a firm uses lesser debt financing in their capital structures if they can get higher non-debt tax shield. This theory is supported by Chaplinsky and Niehaus (1993) in their empirical study and they are of the opinion that debt ratio is negatively related to non-debt tax shields. Here, NDTS





is measured as annual depreciation divided by total assets.

**Hypothesis-5:** Non-debt tax shield is negatively related to leverage.

**Income Variation (IV):** Firms with high volatility of income consist of a risk of earnings level, reducing below the level of their debt obligations. Therefore, firms with highly variation in income prefer to issue equity over debt. Accordingly, there exists an inverse relationship between income variation and leverage ratio, which is confirmed by the both the pecking order theory and the trade-off theory. Whereas, the agency cost theory claims the different opinion. In this study, Log of standard deviation of earnings before interest and tax is considered as the indicator of income variation.

**Hypothesis-6:** Income variation is negatively related to leverage.

**Liquidity (LIQ):** The pecking order theory predicts that firms with high liquidity will borrow less debt. A negative relation is also expected by the agency cost theory. But, the trade-off theory predicts an opposite direction and shows a positive significant relationship. In contrast with the capital structure theories and consistent with the several other studies like, Tong and Green (2005), Guney et al. (2011), the study also

expects a negative relationship between liquidity and leverage, as well as ratio of current assets to current liabilities as the proxy for liquidity of the firm.

**Hypothesis -7:** Liquidity of a firm is negatively related to leverage.

**Uniqueness (UNIQ):** The trade-off theory predicts a negative relationship between uniqueness and debt ratio. Whereas, the pecking order theory expected a positive relationship, and argues that firms with relatively unique products are expected to more R&D and selling expenses which require a higher demand for funds from preferred sources of debt. Therefore, Uniqueness is calculated as selling expenses divided by total sales.

**Hypothesis-8:** Uniqueness of a firm is negatively related to leverage.

## Analysis of Data and Findings

### Descriptive Analysis

Summary statistics of selected firms are reported in table-1. It's not only describe the data set, measures of central tendency and measures of variability or dispersion but, also provides a clear initial picture of the variables.

**Table-1 : Descriptive Statistics of Dependent and Independent variables**

Variable	Mean	Std. Deviation	Minimum	Maximum
PF	0.126	0.095	-0.223	1.264
SZ	7.140	1.615	0.068	12.707
GT	21.058	33.608	-56.858	95.160
TG	0.566	0.302	0.022	2.157
NDTS	0.032	0.023	0.001	0.245
IV	4.001	1.822	-4.952	9.113
LIQ	1.371	0.732	0.280	13.080
UNIQ	0.050	0.046	0.001	0.243
LEV	0.309	0.177	0.002	0.861

**Note:** in the above table the dependent variable is, LEV refers to total long term debt ratio. The independent variable includes Profitability (PF), Size (SZ), Growth (GT), Non-debt tax shield (NDTS), Income Variation (IV), Liquidity (LIQ) and Uniqueness (UNIQ).

**Source:** Own calculation, based on STATA 12.1

The mean value of leverage ratio is 31% which, implies that 31% of the total assets are financed by debt capital and remaining through internal sources i.e. internal finance is the main sources of fund of the Indian companies under study. On the other hand, a high percentage of variation (18%) indicates that firms are not consistently using the same ratio of leverage over the study period rather, some times over the period have resorted to debt financing with a view to combat financial distress.

### Correlation analysis

Table-2 shows the Pearson's correlation to identify the degree of association among the explanatory variables as well as existence of multicollinearity problems if any.

**Table-2: Matrix Correlation**

	PF	SZ	GT	TG	NDTS	IV	LIQ	UNIQ
PF	1.000							
SZ	-0.079	1.000						
GT	0.199	0.038	1.000					
TG	-0.022	-0.040	-0.255	1.000				
NDTS	0.014	-0.014	-0.155	<b>0.714</b>	1.000			
IV	0.203	<b>0.793</b>	0.075	-0.059	-0.042	1.000		
LIQ	0.077	-0.031	0.099	-0.245	-0.176	0.072	1.000	
UNIQ	0.055	0.042	-0.076	0.343	0.245	0.119	-0.113	1.000

**Source:** Own calculation, based on STATA 12.1

The correlation matrix exhibits that the correlation coefficients of the independent variables among themselves of the firms concerned are almost normal in general, excepting income variation with size and non-debt tax shield with tangibility that are found to be highly associated, raising collinearity problem as well as biased estimation.

### Diagnostic Test

Following tests have been employed as essential tools for testing before run regression analysis with a view to check the validity of the basic assumptions of regression and confirm about the reliability of data to be used for regression analysis.

### Test of multicollinearity

In order to confirm about the multicollinearity problems current study sick to employ Variance Inflation Factor (VIF) test. As a rule of thumb, if VIF value is greater than 10, indicates the presence of multicollinearity error problems (Gujarati, 2003). Hence, table-3 shows that the VIF values of all the explanatory variables are less than 10, which depicts that there is no multicollinearity problem among the independent variables. Therefore, variables are free form multicollinearity problems.

**Table- 3: Multicollinearity test: VIF test**

Measure	PF	SZ	GT	TG	NDTS	IV	LIQ	UNIQ
Tolerance	0.77	0.30	0.89	0.43	0.49	0.29	0.91	0.85
VIF	1.29	3.32	1.12	2.33	2.05	3.50	1.09	1.17

### Test of Normality

As a tool of testing normality test plays a vital role to confirm about the reliability of data. Normality test for the residuals

of the analysis are reported in table-4 in the form of numerical as well as visual inspection for better representation. The Kolmogorov-Smirnov statistics and Shapiro-Wilk statistics having p-value of 0.094 and 0.098 respectively, which are greater than the significance level at 0.05, implying that the null hypothesis is accepted indicating that the errors are associated with the normal distribution assumption. Visual inspection for the residual is produced to inspect the distribution pattern of residuals that, also provides the same conclusion. Histogram shows a bell shape pattern of distribution.

**Table- 4: Normality test**

Numeric							Graphic
Residual	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.	
Standardized	0.027	960	0.094	0.997	960	0.098	

**Test of Heteroskedasticity**

White's general test for heteroskedasticity is employed to detect the present of heteroskedasticity in the residual as presented in table-5. Test results of both numerical as well as graphical statistics provide the same conclusion that the heteroskedasticity is associated with the error problem, since the p-value (0.000) against  $\chi^2$  value (179.47) is considerably less than significance level at 0.05 i.e. null hypothesis (Ho) is rejected. The graphic of scatter plot also shows that the plots of residuals are not same size with all fitted values. Therefore, the regression model might not be the best unbiased estimator. Hence, as a remedial measure standard errors to be made robust to relax the heteroskedasticity problem and make the model reliable.

**Table- 5: Heteroskedasticity test**

White's test for Ho: homoskedasticity, against Ha: unrestricted heteroskedasticity				Graphic
$\chi^2(44) = 179.47, \text{ Prob.} > \chi^2 = 0.000$				
<b>Cameron &amp; Trivedi's decomposition of IM-test</b>				
Source	$\chi^2$	df	p	
Heteroskedasticity	179.47	44	0.000	
Skewness	35.31	8	0.000	
Kurtosis	0.11	1	0.737	
Total	214.89	53	0.000	

Therefore, based on the results of diagnostics test described above, the regression model does not have the assumptions of multicollinearity, errors are normally distributed, and time series effect automatically minimized due to use of panel data regression model and robust standard errors being made to adjust the heteroskedasticity problem and possible errors. Now, data are reliable to be used for regression analysis.

### Regression Analysis

A random effect regression model is selected as appropriate specification for regression analysis. To select the appropriate model a comparison between fixed effect model and random effects model is made through Hausman specification test, which is reported in table-6. The p-value against  $\chi^2$  is more than the statistical level of 0.05, which indicates that null hypothesis ( $H_0$ ) is accepted i.e. unobserved individual effect and regressors are uncorrelated. Therefore, the result demonstrates that the random effect model is more appropriate than fixed effect model.

**Table- 6: Hausman's Specification Test**

$\chi^2$	Prob. > $\chi^2$
47.64	0.110

Finally, Breusch and Pagan Lagrangian Multiplier test has been employed to confirm about random effect model and pooled OLS model that is reported in table-7. The result of the test shows that the p-value against the  $\chi^2$  is less than the significance level at 0.05; which, recommends in favour of the random effect model for analysis regression result.

**Table- 7: Breusch and Pagan Lagrangian Multiplier Test**

$\chi^2$	Prob. > $\chi^2$
1175.47	0.000

The panel data regression result using the random effect model is presented in table-8, which depicts, mode of relationship between dependent and independent variables with the level of significance and other results to verify the fitness as well as explanatory power of the model.

**Table-8: Summary of Regression Result ( Random effect model)**

Variables	Leverage (LEV)	
	Coefficient	t- Statistics
PF	-0.502***	-5.120
SZ	-0.029**	-2.210
GT	0.001**	2.380
TG	0.138**	2.080
NDTS	0.076	0.260
IV	0.014	1.460
LIQ	0.019**	2.250
UNIQ	0.023**	2.080
Cons.	0.408***	4.220
Observations	960	
R Square	0.622	
Wald $\chi^2$	92.090	
Prob. > $\chi^2$	0.000	

**Notes:** \*, \*\* and\*\*\* indicates, significant at 0.10, 0.05 and 0.01 levels.

**Source:** Own calculation, based on STATA 12.1

According to the results, the regression equation of the Indian firms under study is as:

$$\text{Leverage (LG)} = 0.408 - 0.502(\text{PF}) - 0.029 (\text{SZ}) + 0.001(\text{GT}) + 0.138 (\text{TG}) + 0.076(\text{NDTS}) + 0.014(\text{IV}) + 0.019(\text{LIQ}) + 0.023(\text{UNIQ}).$$

The result of regression analysis shows that the coefficient of determination or  $R_2$  is 62%, i.e. overall explaining power of all the variables is high. The remaining of the variability is due to some other factors that are not considered here. The overall result under random effect model reveals that, out of the eight explanatory variables, most important and significant factors in deciding the capital structure of the sample firms in India are profitability, size, growth, tangibility, liquidity and uniqueness. Out of which, profitability, size, growth opportunity, and uniqueness of the firms are confirming to

the pecking order hypotheses and remaining of the variables are in line with either the trade-off theory or the agency cost theory to some extent. Wald  $\chi^2$  value for random effect model is significant at 0.01 level, which recommend strongly in favour of the model and suggests that the model is good-fit for the Indian sample firms.

Summary of expected impacts and observed relationships with the prediction of different theories are as follows:

**Table- 9: Comparison of the test results with the predictions of different theories**

Determinants	Expected impact	Observed Relation	Theory
PF	Negative	Negative	Pecking order
SZ	Positive	Negative	Pecking order
GT	Negative	Positive	Pecking order
TG	Positive	Positive	Trade-off/ Agency cost
NDTS	Negative	Positive	NA
IV	Negative	Positive	Agency cost
LIQ	Negative	Positive	Trade-off
UNIQ	Negative	Positive	Pecking order

Profitability (PF) of the firms during the study period is found to be negatively related to leverage. It is evident from the finding that the profitability of the firms having a significant influence on leverage at 0.01 level and consistent with the expected direction, which is the indicative of association between higher profits and internal finance. As this ratio increases, firms would have more profits to place in expansion and investment that indicates less need of external finance. The finding of this study is consistent with the pecking-order theory, which postulates that retained earnings of said industry is the preferred source of fund over debt. Size (SZ) of the firms, which is hypothesized to have a positive relationship with leverage, is found to be negatively related with leverage and statistically significant at 0.05 level. This suggests that size is strongly related to leverage which, recommends that size is an important influencing factor in explaining the leverage of the Indian firms. However, our finding is in conformity with the propositions of the pecking order theory and consistent with the several other empirical studies. Growth (GT) of the firm is found to be a positive correlation with leverage that rejects the expected impact but shows a statistically significant relationship. This implies that

growing firms in India use more debt than equity to finance the new projects. However, the pecking order theory of Myers and Majluf (1984), also advocate the same relationship between growth opportunity and leverage in the literature. According to them, internal finance may not be sufficient to fulfill the required funds for the growing project and hence, they are likely to be in need of external finance. Tangibility (TN) of the firms, which has been hypothesized to have a positive relationship with leverage, is found to be the same with the findings of the study and statistically significant at 0.05 level. So, it can be said that the tangibility is an important significant factor in explaining the leverage of the Indian firms. This positive relationship between tangibility and leverage is the combined prediction of the trade-off theory and the agency cost theory which is of the view, that the firm with the higher tangibility of the assets better is the company's liquidation position and higher collateral value. The regression result of the random effect model indicates that Non-debt tax shield (NDTS) of the firms during the study period is found to have positive insignificant relationship with leverage which is not at par with hypnotized direction and not confirmed by any theory of capital structure. Income Variation (IV) of the Indian

firm under study is less important factor in explaining the leverage and found to be positively correlated with leverage. However, positive relationship between income variation and leverage is not consistent with the hypothesis which proposes a negative relationship. Thus, positive relationship implies that the large firms with higher income variability have to bear more cost of debt due to higher probability of bankruptcy that may affect the total value of the firm, but it doesn't discourage to take more debt as it is very negligible to the big firm. Liquidity (LIQ) of the firm is observed to have positive significant correlation with leverage at 0.05 level of significance, but inconsistent with the expected impact. However, the result is in line with the prediction formulated by the trade-off theory. According to this theory, the firms with better liquidity should prefer to borrow more due to their better ability to meet contractual obligations when these become due. It is observed that Uniqueness (UNIQ) having a positive significant relationship with leverage during the study period is marked as also influencing factor in determining the capital structure. However, positive relationship between uniqueness and leverage is not consistent with the hypothesis which proposes a negative relationship. The observation of the current study is in line with the pecking order theory. According to the theory, firms with relatively uniqueness or specialized product actually has more R&D and selling expenses; so, means of higher demand for funds have to be met from preferred sources of external borrowing.

### Summary and Conclusion

Capital structure of the firms and its determinants remains the core areas of research to the academicians and also an important issue to the corporate finance managers. The findings of the analysis demonstrate that profitability, size, growth, tangibility, liquidity and uniqueness are noticed to be the most significant factors in deciding the capital structure and model is good-fit for the Indian sample firms as indicated by significant Wald  $\chi^2$  statistics. Therefore, this study will provide proper guidelines to the management of the Indian firms to consider the important determinants of capital structure in their capital structure decision making. Therefore, management of the each firm should be deeply concerned with this issue as effective decision-making of capital structure be set after taking into account of the impact of the determinants, thereby, objective of minimization of cost and maximization of wealth of shareholders be achieved to

coincide with the expectations of shareholders. The findings of the research study are also expected to be useful to the debt holders in evaluating the performance of the firm in the light of these important factors before providing funds with particular emphasis on the degree of risk associated.

The results also suggest that profitability, size, growth opportunity, and uniqueness of the firms are consistent with the pecking order hypotheses and provides small evidence to support either the trade-off theory or the agency cost theories to some extent.

### Limitations of the Study

Any research work is not free from limitations, particularly empirical one, because of time bound frame-work, time and data constraints. The present study is also not an exception one, and appears to have the limitations stated here under:

I. Data for the study has mainly collected from secondary data sources namely, data base package (Capitaline 2000), journals, magazines, annual reports, books as well as the website of the companies under study. These sources have always facing questions regarding its reliability because of the methodological deficiencies, printing mistake and undisclosed information. In order to minimize these limitations, the study has tried to eliminate the error as far as practicable through continuous editing with a view to fulfill objectives of the study.

II. The study considers 12 year period running from 2000-01 to 2011-12. So, all the analysis and comments made in the present research study are limited to this period only. Statistically, it can be said that longer the period greater is the reliance of the findings. Hence, the present study is not free from the time bound limitation.

III. Capital structure of the firms is influenced by various external and internal factors. The macroeconomic factors such as GDP, inflation, market condition, government policy, etc. are the important external factors that influence the capital structure of the firm. On the other hand, internal factors which are termed as microeconomic factors also affect the capital structure of the firm. The study is restricted to only microeconomic factors due to time constraints that have reduced the scope and dimension of the research study. This is also another limitation of the study. Again, only the eight factors taken into account for analysis purposes may cause

to be the restriction for drawing inferences.

iv. The study again, is restricted to only book values of debt to measure total debt; it could have been better if market value of debt would have been available to measure the dependent variable.

In spite of the above limitations, the study has generated some valuable findings that would cause to broaden the understanding of corporate financial structure.

### Recommendations for the Future Research

More research efforts and investigations on the lines suggested below may be useful in Indian context or in the context of other developing nations having a sound corporate base in order to display the realistic way of determination of capital structure and the saga of the determinant factors that are imbedded in this context. A growing number of researches have been conducted in this broad area on the various issues yet; a large area remains unexplored for future research. Based on the current observations and major empirical findings, the study would like to provide some suggestions that are expected to pave for further research with enrichment of financial literature.

i. The present study is restricted to the only eight microeconomic factors. There are so many microeconomic factors as well as macroeconomic factors (GDP growth rate, inflation, corporate governance, etc.) that have an impact on leverage, not considered here. Thus, in order to address this deficiency, future research should include more microeconomic factors as well as macroeconomic factors as far as practicable to demonstrate the influence of both the factors of capital structure choice along with paving the way for better understanding.

ii. Study on capital structure and its determinants may be explored according to size of the firm such as (SML), industry wise as well as in totality leading to the comprehensive understanding of the intricacies of the area.

iii. Due to unavailability of data coupled with market vicissitude has forced to take into account the book-value of debt for analysis purposes. In future, it is expected mechanism be ascertained to work with market-value, so that the conclusion will be a more realistic one.

iv. Another focus of the further research is to the extension of panel data, i.e. both time series data and cross-sectional data in order to test the robustness of the findings presented in the current study as well as better inference. So, it is recommended that further studies should increase the number of observations as far as practicable.

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# Goods & Service Tax - Revolutionary Indirect Tax Reform

Anand Vijay

## Abstract

Today, the Constitution (One Hundred and First Amendment) Bill, 2015 passed in Rajya Sabha.

The Constitution (122 Amendment Bill), 2014 has passed by the Lok Sabha on May 6, 2015. It would referred to a select committee of Rajya Sabha which submitted its report on July 22, 2015.

The Empowered Committee considered the GST as “a further significant improvement - the next logical steps - towards a comprehensive indirect tax reforms in the country.”

Indirect Tax Reform –The GST (Goods & Service Tax ) is a destination based taxation. The GST will herald an economic integration of India. It would facilitate a common national market. It would give positive impulse in the Nation’s GDP double digit growth prospect.

With the introduction of GST, India is set to face the biggest tax reform since its independence. It would expect to overhaul India’s indirect tax structure by simplifying tax compliances, reducing tax costs, eliminating double taxation and enabling the seamless flow of credits across manufacturing, services and trading sectors. The Introduction of GST will provide a much needed impetus to the Indian growth story.

The GST Bill proposed a dual GST model. GST that would levied by the Centre would be called Central GST (CGST) and GST charged by States would be called State GST

(SGST). A “goods and service tax levied on the supplies in the course of inter – state trade or commerce “ (Formerly known as IGST) would be issued on inter- State transactions of goods & services.

The GST would subsume most of the existing Central and State taxes on the supply of goods & services including central excise, service tax, state level VAT and other local levies on goods.

The idea is to confer concurrent power upon the Parliament and the State legislature to make laws governing GST.

The GST Bill pinpointed the loopholes in the present tax structure which result tax on tax in the chain of supply from manufacturer to final consumer. Multiple taxes imposed by different States and the Central Government not only increase product prices but also give enormous scope of tax evasion.

## Key Words

Destination Based Taxation, IGST, Common National Market, Eliminating Double Taxation, Economic Integration

## Introduction

Our nation would provide a fascinating paradigm in designing a tax system in the federal structure. Recent Our Government moves to initiative Indirect Tax reform – A comprehensive and dual “ Good and Service Tax to be

levied concurrently by the central and state governments. It would result efficient and sustainable growth to attain the MAKE – IN INDIA Mission.

Goods and Services Tax (GST) in India envisage to be the greatest indirect tax reform in the country post-independence. GST with its embedded element of simplicity in levy and collection of taxes as opposed to multiple / multi-point levy and collection of indirect tax.

It would facilitate to eliminate the tax distortions besides reducing the cost of goods and services in the hands of the final consumer. *Thus, The Economy will getting geared to shift the tax - incidence from Origin to Destination Principle. The GST system would have fundamental basis to tax on final consumption than existing practice of tax on production and distribution.*

It result all SGST collected would ordinarily accrue to the State where the consumer of the goods or services sold (Consuming States).

Today, the Constitution (One Hundred and First Amendment) Bill, 2015 passed in Rajya Sabha.

The Constitution (122 Amendment Bill), 2014 has passed by the Lok Sabha on May 6, 2015. It would referred to a select committee of Rajya Sabha which submitted its report on July 22, 2015

### The Constitutional Amendment Bill 2014

The Constitution (One Hundred and Twenty Second Amendment) Bill, 2014 was passed by Lok Sabha on 6th May, 2015. It would seeks to amend the Constitution of India to facilitate the Introduction of Goods and Services tax (GST) in the country.

*Article 366(12A) of the Constitution, defines Goods and Service Tax (GST) to mean any tax on supply of goods*

*or services or both except taxes on the supply of the alcoholic liquor for human consumption.*

Article 246A would empowers Parliament and State Legislatures to make laws for levying GST simultaneously on every transaction of supply of goods & services. Parliament has exclusive power to make laws with respect to goods & service tax where the supply of goods, or of services, or both takes place in the course of inter-state trade or commerce.

### Economic Implication

The GST reform would result gains to various key areas as summarized in table below:

Key Field	Range (% gains)	Value Terms (crore) INR
GDP	0.9 to 1.7	1469 to 2881
Export	3.2 to 6.3	24669 to 48661
Import	2.4 to 4.7	31173 to 61501
Real return to Land	0.42 to 0.82	
Wage rate	0.68 to 1.33	
Real return to Capital	0.37 to 0.74	

Such tax reform would result decline in prices of all manufacturing sector in range of 1.22 % to 2.53%. It includes sugar, beverages, cotton textiles, wool, silk, synthetic fiber textiles and textile products and wearing apparel etc.

The GST is expected to ensure seamless and uniform tax regime besides lowering inflation and promoting growth in the long run.

The Key features of the Proposed GST would summarize as under:-

- \* Common Threshold Limit
- \* Few Exemption
- \* IGST System for inter-state supply of goods & services.
- \* GSTN, Sec 25 Company incorporated on 28th March, 2013
- \* Destination based taxation / Consumption taxation
- \* Facilitate Common Indian Market, Efficient Factor Market, Economic of Scale, Zero- Rated Export.
- \* Transparent & complete chain of set - off
- \* Seamless flow of Credit across the Supply Chain

Tax System & Administration:

## Tax System & Administration

Proposed GST	Present Tax	Taxable Event	Levied by	Collected by
CGST	Central Excise Duty	Manufacturer of Goods (Except SEZ)	Union Government	Union Government
	Service Tax	Provision of Service	Union Government	Union Government
	Custom Duty	Import / Export	Union Government	Union Government
SGST	Sales Tax / VAT	Sale within State	State Government	State Government
	Local Body Tax (Entry Tax / Octroi)	Entry of Goods to a State from a place outside the State	State Government	State Government
	Central Sales Tax	Inter State Sales	Union Government	State Government

# IGST :- for Inter State Sales under Proposed GST  
Department of Revenue, Ministry of Finance, GOI

### Existing indirect taxes in India

#### Various taxes

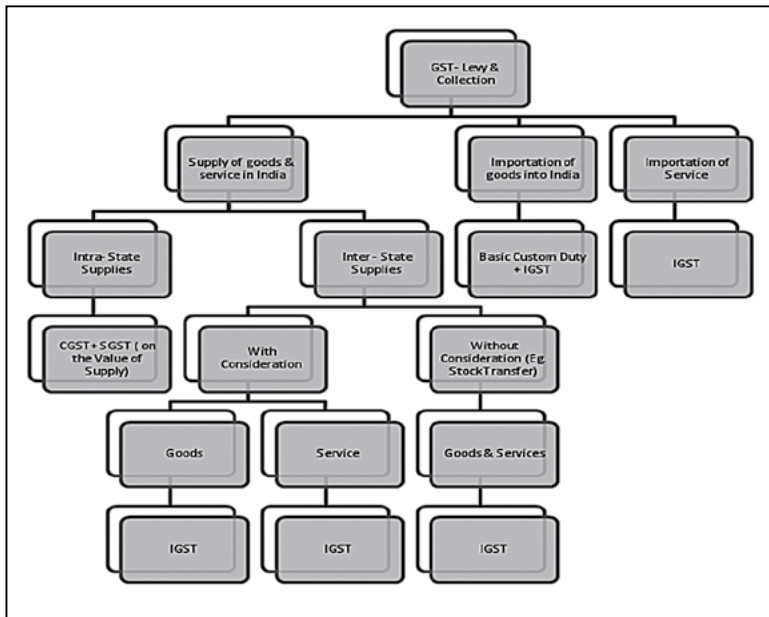
- Complex tax structure
- Tax cascading
- Uncertainty in determining the nature of transaction
- Lack of uniformity in provisions and rates
- Inefficiencies in tax administration and higher compliance costs

### Taxes to be subsumed in GST

Note

- Alcoholic beverages for human consumption are proposed to be kept out of the purview of GST
- GST on petroleum products would be levied from a notified date recommended by the GST Council

**Tax mechanism - Levy & Chargeability**



**Exemption :-** The common list of exemption would comprises all public services, unprocessed food article, education services, hospitals by non - governmental institution.

**Outside GST :-** Crude Oil, Natural Gas, MS, HSD, ATF (subject to GST only on recommendation of the GST Council).

**Threshold Limit :-** Extract of recommendation of the Task Force report of the 13th Finance Commission. The Threshold would be uniform for both CGST and SGST at Rs. 10 Lakh. Existing exemption of Rs. 1.5 crore of turnover for SSI should be discontinued.

	Turnover	First Discussion paper		Task Force Report	
		CGST	SGST	CGST	SGST
Goods	below 10 Lakhs	Nil	Nil	Nil	Nil
	10 Lakh - 1.5 Crore	Nil	Leviable	Leviable	Leviable
	Above 1.5 Crore	Leviable	Leviable	Leviable	Leviable
Services	below 10 Lakhs	Nil	Nil	Nil	Nil
	10 Lakh - 1.5 Crore	Nil	Leviable	Leviable	Leviable
	Above 1.5 Crore	Leviable	Leviable	Leviable	Leviable
# Threshold Limit for Goods & Services may extend to 25 lakh					



**Registration**

Small dealers, service providers and manufacturers would be exempted from the purview of both CGST and SGST if their annual aggregate turnover (excluding both CGST and SGST) of all goods and services does not exceed Rs.10 lakh. Turnover below threshold limit may opt for voluntary registration. The State of North – East would adopt a lower threshold limit. The Threshold exemption would be uniform for both CGST and SGST.

Compounded Levy Scheme :- Small dealers with annual

aggregate turnover of goods and services between Rs. 10 lakh to Rs. 40 lakh would opt for compounded levy for 1%, each towards CGST and SGST (2% Levy). They are not eligible for Input Tax Credit (ITC).

Such Compounded levy Scheme would applicable for dealer of \* High value items.

\* High Value items :- Gold, Silver, Platinum, precious stones, bullions.

Such Taxpayers would required to pay taxes and file their returns on a quarterly basis.

Structure of GSTIN :-

State		PAN								Entity	Blank	Check	
<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>

\* 15 digit Alpha numeric structure

\* State Wise

\* Based on PAN

\* 13th Digit for business Verticals of entities with same PAN in same State

\*14th Digit Left for Future use

\*15th Digit - Checksum

Enforcement, scrutiny and audit in respect of CGST.

Whereas, The State Tax Administrations would be responsible for implementing SGST as well as Enforcement, scrutiny and audit in respect of SGST.

**Valuation of Goods & Service :-**

In basis of GST would tax collection at each value addition stage / supply chain. Thus, need of valuation rules related to related party transactions and MRP would as per the Legal Metrology Act.

**Administration :-**

The Central Board of Excise & Customs (CBEC) would be responsible for implementing the CGST as well as

**Positive Implication :-**

**GST Positive Implication on Stakeholder**

Traders	Government	Consumer
Reduction in Tax Incidence	Efficient Tax Compliance & Simple Tax System	Reduction in Price of Goods & Services
Complete Set-off Input Tax Credit	Increase in Tax Revenue & Tax Base	Increase in savings due to decrease in cost
Benefit in National Common Market	Increase in availability of Funds - through investment of Consumer & Corporate Savings	Increase in Investment due to increase in savings

**Snapshot :- The Challenges in the Present Tax System**

Challenges	Facts	Impact
Exempted Sectors	Various Exempted Sectors such as Oil & Gas Production, whole sale & Retail trade, range of services remain outside the ambit of the Cenvat & Service Tax	- Force to have cascading tax incidence, due to non-creditable of CENVAT & Service Tax on inputs. - not eligible for credits of inputs in VAT - Not Eligible for credit of CST
Service Tax	A) Complex Structure B) No Standardized Nomenclature like Harmonized System of Nomenclature (HSN)	Huge Compliance Cost, Tax Disputes
VAT / Sales Tax	Different Tax rates across States resulting in Price differential	A) non - Prevalence of Common Market
Cross Credit Utilization	Presently inter-levy credits between CENVAT & Service tax allowed. <i>Cross levy set off of service tax/ Excise and sales tax / VAT is not permissible.</i>	A) Resulting cost to the manufacturer & providers.
Classification Disputes ( <i>Sales vs Service</i> )	Issue / Disputes whether to tax as Goods or Services	Huge Litigation, Disputes etc. Ex:- Taxing of Software, Customized as VAT or Service Tax, Installation of A/c etc.
Non - Uniformity in Documentation, Provisions and Rates	The States lacks uniformity in term of rates, procedure, compliance, computation & exemptions. Different States would have different form for even same type of transaction ex :- <i>Delivery Notes in the case of sending goods in inter-state or intra-state. In Kerala, delivery notes would given as Form No.15. While, in Tamil Nadu it is in Form JJ.</i> We would often seen tax rates war amongst States.	A) Cumbersome to operate efficient business operation.

**Critical Analysis of menace of Classification disputes**

Dual Tax incidence – VAT & Service Tax in course of work Contract, would result tax disputes about classification and tax liability.

Few Instances would further complex the issue of classification problems. It would explained as under :-

- 1) Value added Services (VAS) in Telecommunication such as wallpaper for mobile phones, ring tones, jokes, cricket scores, weather reports would considered as a goods, subject to VAT. (Escotel Mobile Communications vs. Union of India (Kerala) – Supreme Court.
- 2) Online Subscription to newspapers considered as a Services, while online purchase and download of a magazine or a book would considered as a Goods.



3) Common Disputes about Leasing of equipment without transfer of possession and control to the lessee would considered as Goods Or Services. (Bharat Petroleum Corp. Ltd vs Chembur Service Station – Case Laws)

GST law would converge Goods and Service under common base. Thus, Such menance of Tax disputes would be eliminated, resulting transparency in the adminisitation.

**GST Council :-**

Pursuant to Article 279A, Honorable The President would constitute the GST Council within 60 days from the date of commencement of the Constitution (115 Amendment), 2015.

It would examine issues relating to goods and service make recommendation to the Union and the States . Union Finance Minister - Chairman, Union Minister of State in charge of Revenue / Finance - Member, Finance Minister

or nominated minister of State & UTs - Member.

**Quorum :-** ½ of Total no. of Members

Role :- make recommendation to the union and the states on various matter such as taxes, cess, surcharges, exemption, levy, threshold limit, floor rates, special provision for states.

**Dispute Resolution**

The GST Council shall establish a mechanism to adjudicate any dispute arising out of its recommendations. Disputes can be between: (a) the centre vs. one or more states; (b) the centre and states vs. one or more states; (c) state vs. state. This implies there will be a standing mechanism to resolve disputes.

**GST in other Countries :-** GST / Vat System would adopted by more than 150 countries in the world. Snapshot :-

**The Proposed GST would be “Concurrent Dual GST Model”**

SR NO.	Region	No. of Countries	Tax rate range
1	ASEAN-(Thailand & Philippines)	7	7-12%
2	Asia-(Iran & Tajikistan)	19	5-20%
3	Europe-(Jersey & Hungary)	53	5-27%
4	Oceania-(Niue & New Zealand)	7	5-15%
5	Africa-(Nigeria & Gambia)	44	5-40%
6	South America-(Brazil & Uruguay)	11	10-22%
7	Caribbean, Central & North America (Canada & Barbados)	19	5-17.5%

Sources: Royal Malaysia Good & Service Tax “Countries Implementing of VAT or GST”

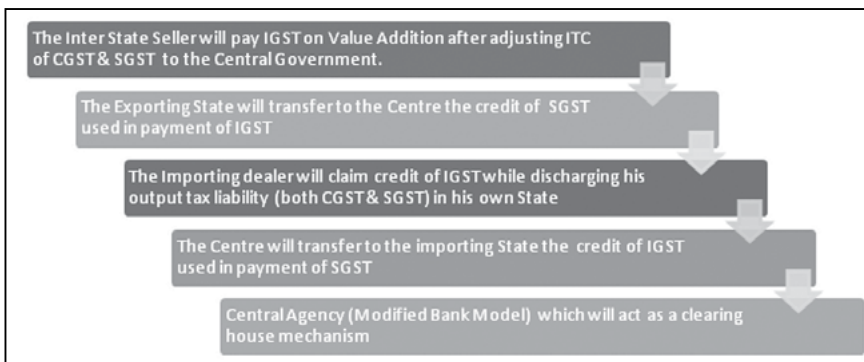
A) **IGST Model :-** IGST = CGST + SGST ( Inter State Trade of Goods & Services)

B) **CGST :-** Central Goods & Service Tax levied by the Central Government on Intra State of supply of goods & services. It is revenue to the Central Government.

C) **SGST :-** State Goods & Service Tax levied by the State Government on Intra State of supply of goods & services



. It is revenue to the State Government.



### Advantage of IGST Model

- a) Maintenance of uninterrupted ITC chain on inter-State transactions.
- b) No upfront payment of tax or substantial blockage of funds for the inter-State seller or buyer.
- c) No refund claim in exporting State, as ITC is used up while paying the tax.
- d) Self monitoring mode
- e) Level of computerization is limited to inter – state dealers and Central & State Governments should be able to computerize their processes expeditiously.
- f) As all inter-State dealers will be e-registered and correspondence with them will be by e-mail, the compliance level will improve substantially.
- g) Model can take ‘Business to Business’ as well as ‘Business to Consumer’ transactions into account.

**Revenue – Neutral Rate of GST :-** The Rate of GST would finalized on the recommendation of the GST Council. While, Summarized Analysis of various report would suggest 4 different rates. A) Standard Rate, B) Lower Rate – necessary items, C) Special Rate – Precious rate, D) Exempted items. Export would be zero – rated.

Combine rate of GST is 12% (5% CGST and 7% SGST) (13th Finance commission).

- A) Parliament shall by law, provide for compensation to states for any loss of revenues, for a period which extend to 5 years
- B) One Standard rate for all goods & services. Second, Concessional rate for basic necessities and Third, common list of exempted goods.

GST rate				
	Sate Govt. Representative	Arvind Subramaniam Panel ( Dec 2015)	National Institute of Public Finance & Policy (NIPFP)	13 <sup>th</sup> Finance Commission (Dr.Vijay Kelkar)
Revenue Neutral rate	27% (12.77% CGST + 13.91 SGST)	15-15.5%		12% ( 5% CG +7 % SG)
Standard rate		17-18%	23-25%	18%
Rate structure		Three Tier		
		1) Essantial Good-12%		
		2) Demerit / S IN Goods -40 %		
		3) Services-17-18%		
Additional 1 % Tax ( Non- Creditable { Revenue to producers state})		NA		
#A revenue neutral rate is a single rate at which there will be no revenue loss to the centre & state in the GST regime. # Final Rate would be decided by the GST council # Global Standard rate – 16 %				



Input Tax Credit :- ITC of CGST would allowed against the payment of CGST. The Same Methodology applied in the case of SGST. Cross utilization of ITC between the CGST and the SGST would not be allowed.



### Returns :-

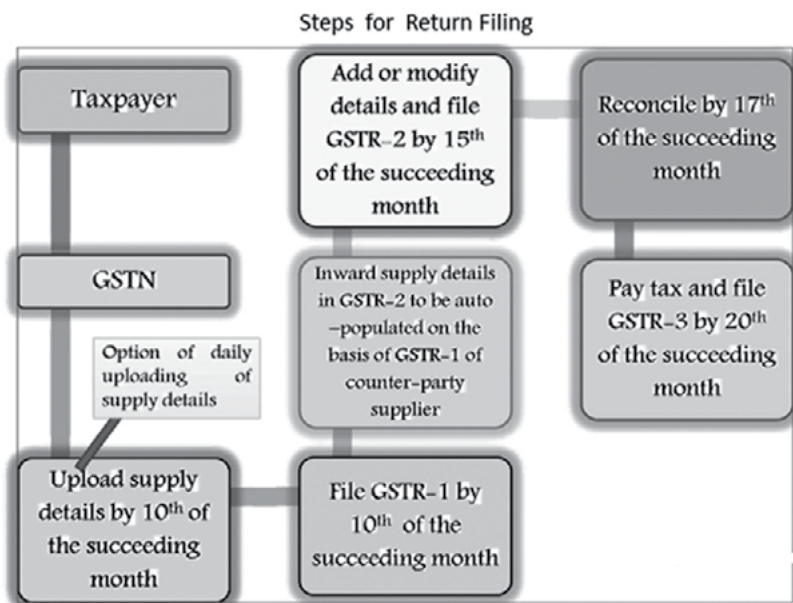
Categories of Tax Payers	Returns
Normal / Regular & Casual Taxpayer	GSTR- 1,2,3 &8
Compounding Taxpayer	GSTR- 4 & 8
Foreign Non – Resident Taxpayer	GSTR - 5
Input Service Distributor	GSTR - 6
Tax Deductor	GSTR-7

#### Relevant Form :-

- A) GSTR-1 Return
- B) GSTR-2 Return
- C) GSTR -3 Return
- D) GSTR-4 Return - Compounding Tax Payers Return
- E) GSTR-5 Return - Foreign Non – Resident Return
- F) GSTR -6 Return – ISD Return
- G) GSTR-7 Return - TDS Return
- H) GSTR-8 Return - Annual Return

*Provision for Revised return* :- Differential Tax Liability to be revealed through Debit Note/ Credit Note/ Supplementary invoices/correction mechanism/Post sale discount/Volume Discount/Amendments/Corrections

PERIODICITY OF RETURN FILING					
S.NO	Category of Tax Payers	Periodicity	Return Form	Date	
1	Normal/Regular Tax Payers	Monthly	GS TR-1 Uploading Supply Invoice	10th day of succeeding month	
			GS TR-2 Auto - population & uploading purchase details	15th day of succeeding month	
			Finalizing supply & purchase details	17th day of succeeding month	
			GS TR-3	20th day of succeeding month	
2	Compounding Tax Payers	Quarterly	GS TR-4	18th day of succeeding month	
3	Foreign Non-Resident Tax Payers	Monthly	GS TR-5	Within 7 days after expiry of registration.	
4	Input Service Distributors (ISD)	Monthly	GS TR-6	15th day of succeeding month	
5	Tax Deductors	Monthly	GS TR-7 TDS Return	10th day of succeeding month	
6	UN Agencies	Monthly		In the month in which purchase made - to claim refunds	
7	All Regular & Compounding tax payers	Annual	GS TR-8 Annual Return	31st Dec following the end of F.Y	



### IT Infrastructure on Goods & Service Tax

An Empowered Group on IT Infrastructure on Goods & Services Tax was constituted by the Government of India on 26th July, 2010. The Group had submitted its report to Empowered Committee of State Finance Ministers. A Consensus had reached to develop IT System in co-ordination with NSDL. Minutes of meeting on 12th May, 2011 would suggest to set up a “Not for Profit” non-Government Company under Sec 25 of the Companies Act.

Purpose :- Facilitate three core services - Registration, returns and payments. It would provide IT Infrastructure and Services to the Governments, tax payers for implementation of the GST.

A Company, Goods and Service Tax Network (GSTN) was incorporated on 28th March, 2013.

Authorized Capital :- Rs. 10,00,00,000 (Rupees ten crore only).

<b>Central Government</b>	<b>24.5%</b>
<b>State Governments, NCT of Delhi, Puducherry &amp; EC Collectively</b>	<b>24.5%</b>
<b>LIC Housing Finance Ltd</b>	<b>11%</b>
<b>ICICI Bank Ltd</b>	<b>10%</b>
<b>HDFC Ltd</b>	<b>10%</b>
<b>HDFC Bank Ltd</b>	<b>10%</b>
<b>NSE Strategic Investment Corporation Ltd</b>	<b>10%</b>

### Conclusion

The Debate about the warp and weft of the GST would greater intensity and momentum in the last few months for its early implementation. The contours of GST are still evolving. The GST reform would facilitate fiscal

consolidation, thus reducing the debt burden of citizens. It would generate high ends jobs opportunities around 20 million in the country.

Such remarkable initiative would result setback to the underground economy. Tax Reform – GST would be prudent

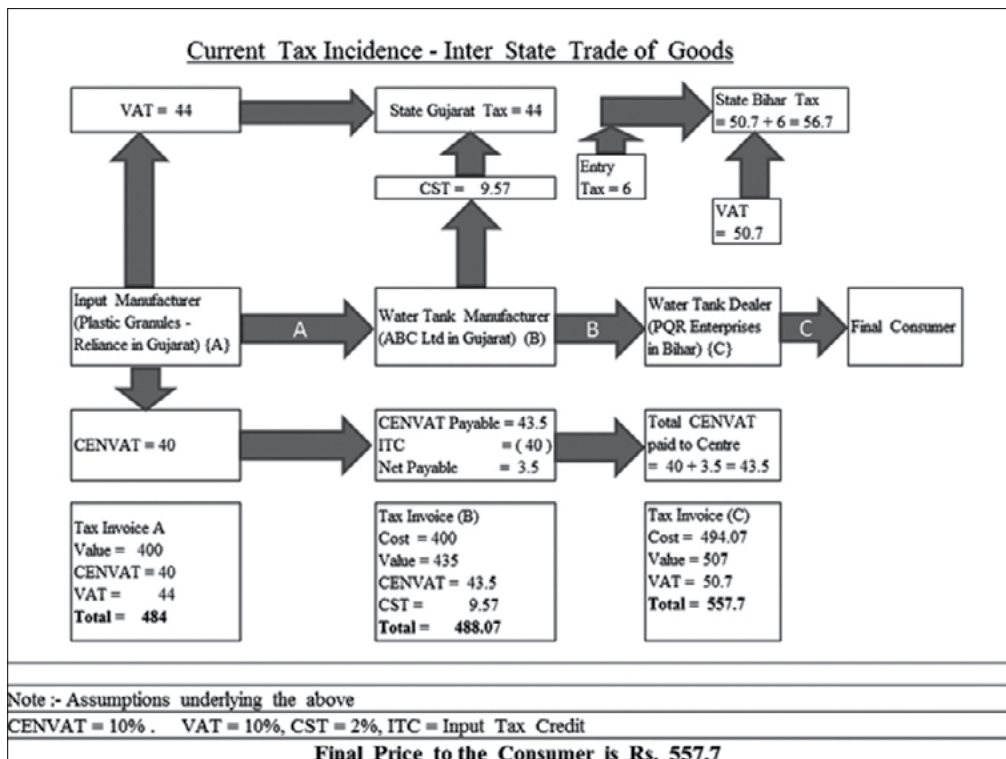
for our economy to go back to double digit GDP growth. The GST roll out is a matter of time.

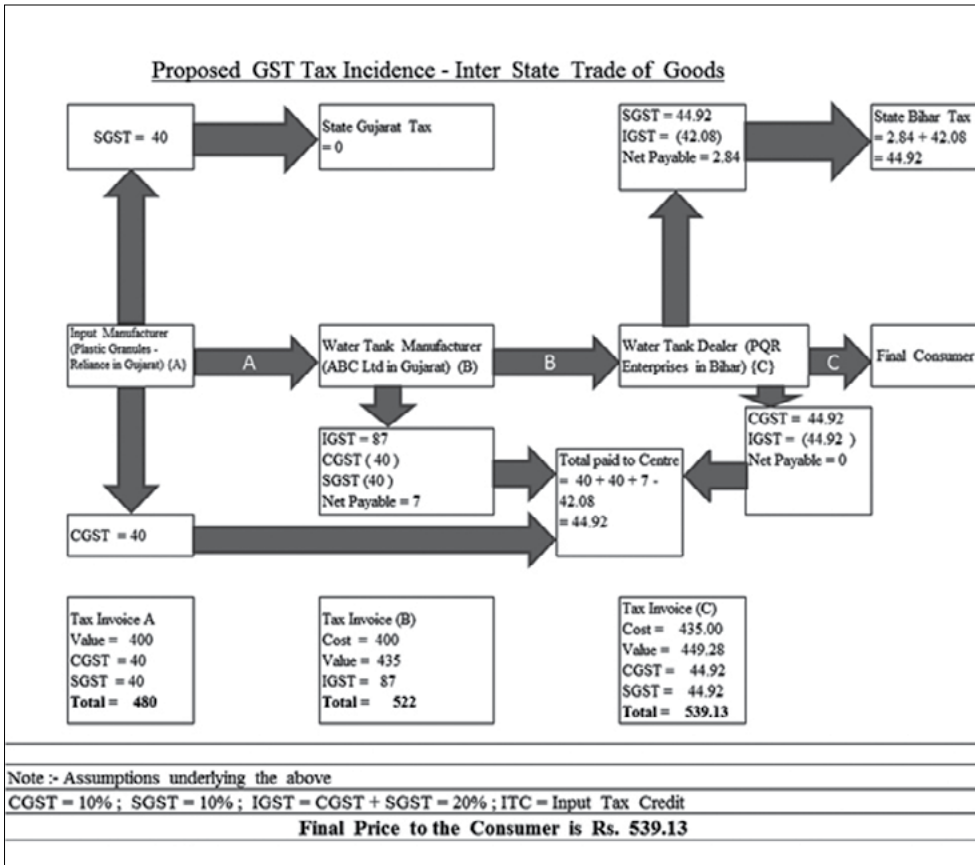
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### Practical Illustration :-





**Summary Analysis of Tax Incidence in Current Tax system & the GST system**

SR NO.	Particulars	Current Tax	The proposed GST
1	Initial Value	484	480
2	Centre Tax	43.5	44.92
3	State Gujarat Tax	44	0
4	State Bihar Tax	56.7	44.92
5	State Total Tax	100.7	44.92



SR NO.	Particulars	Current Tax	The proposed GST
6	Total Tax paid to Exchequer (Union + States)	144.2	89.84
7	Total Tax Borne by Consumer	50.7	89.84
8	Final Cost to Consumer	557.7	539.13

Conclusion: - Tax Incidence would increase from Rs.50.7 to Rs.89.84 and Final cost to Consumer would decrease by 3.33%.

It would support Basic Axiom of Transparency and Broad Revenue Base in the GST.

### Other Examples

Mr. A manufactures goods. He bought goods for Rs. 4,80,000 and incurred expenses of Rs. 40,000. These manufactured goods were sold for Rs. 145,000. Say, CGST rate 9% & SGST rate 9%.			
Intra - State Sale		Inter - State Sale	
Particulars	Amount (Rs.)	Particulars	Amount (Rs.)
Costs of Goods	480000	Costs of Goods	480000
Add : Expenses	40000	Add : Expenses	40000
Add : Profit ( S.P - T.C)	60000	Add : Profit ( S.P - T.C)	60000
Sales	580000	Sales	580000
SGST @ 9%	52200	IGST@ 18%	104400
CGST @ 9%	52200		
Sales Price	684400	Sales Price	684400
CGST & SGST - 9% as per 13th Finance Commission			

## Annexure

### Case Studies :- Precise

#### Case 1 :- Menace of Existing Check post on Industry competitiveness

The Current Mechanism of check post / entry permits would result unhealthy growth of industry. It would increase transaction costs and delays lead time ( the business cycle).

The pernicious underestimation of the price and quantity of goods entering through porous border would result loss of revenue to the exchequer.

Extract of Study :- Transparency International India, New Delhi

Commercial trucks in India would be forced to pay about 70 paise on an average as bribe for every kilometer. Around 14 lakh trucks operate in the country with inter-state permits, and they would pay an average bribe of Rs. 79,920 a year to a variety of authorities of the Central and State governments. Total bribe would stand at above Rs. 11,198.68 crore a year and on any given day, each truck plying on Indian roads ends up paying Rs. 235 as bribe.

By the end of 2014 the road transport sector supported the movement of 60 per cent of goods by paying 11 types of taxes and other incidental/hidden cost.

Menace of the exempted sector like Construction Sector in India would suffer from non-creditable of input credit. Thus, It forces real estate developer to resort to non-reporting of transaction at the correct value. It would result substantial loss of tax revenues and fuels the parallel economy.

The Proposed GSTN would facilitate the introduction of online information input at each check post. Such would eliminate need for entry permits / ways bills.

The GST result national common market and transparency would result to eliminate such means for Black money creation.

#### Case 2 Sales Tax Evasion Practice - Modus Operandi in Kerala

Non-Existence of Uniform Market throughout the nation would result slippage and tax revenue loss to exchequer.

A Short Summary analysis of few Evasion Practices would reveal as under :-

Case Laws :- Kerala High Court, Ernakulam ( M/s. Indus Ind. Bank Ltd. Vs by Advs. Sri. G. Hariharan on 4 September, 2012)

Pursuant to Section 48 of the KVAT Act, Carrying goods from any place outside the State and bound for any place outside the State passes through the State, the Owner or driver or any person in charge of the vehicle shall obtain a transit pass in triplicate in Form 7B from the Person in charge of the check-post at the entry point and surrender the original and duplicate copy to the officer in charge of the check post at the exit point.

Test check of the register of Transit passes in eight check posts revealed that in respect of 2813 Transit passes covering goods valued at 100.60 crore issued during the period from August 2003 to March 2008, details regarding the surrender of the Transit passes at the exit check post were not available.

The rate of tax on the sale of goods under the Pondicherry Sales Tax Act is comparatively lesser than that in Kerala. National highway 17 passes through Mahe.

Due to the difference in rate of tax prevailing in Mahe and Kerala, by availing the facility of pocket roads in between the check posts and Mahe border, unscrupulous dealers transport the goods under the intention for use in Mahe and sell the goods in Kerala thereby evading tax otherwise due to Government of Kerala



Rupees in lakh

Commodity	Rate of Tax		Entry Check Post in Kerala	Exist Check Post in Kerala	Quantity	Value	Tax Effect
	In Kerala	In Mahe					
Petrol & Diesel	24.69	12.5	Goods initiated from Kerala	Kunjippally	75089000 litre	22772.7	5622.57
Chicken	12.5	0	Gopalapuram	Kunjippally	9415314 Kg.	4499.1	562.39
IMFL - Indian Made Foreign Liquor	90	0	Muthanga, B. Manjeswar	Kunjippally & New Mahe	4811976 Lt	5743.16	5168.84
Ghee	12.5	4	Gopalapuram	Kunjippally	102404 cases	2837.32	354.67
Tiles	12.5	8	B. Manjeswar & Koottu-puzha	New Mahe	790240 Sqm	1549.91	193.74
# 13 Kerala Legislative Assembly, Committee on Public Accounts (2011-2014)						Total	<b>11902.2</b>

**Thus, Mahe would be easily used as a pocket for evasion of tax and revenue loss to the Kerala State exchequer.**

Once in four months, every trader has to complete a VAT return, giving details of its input and output taxes. If input tax was greater than output tax, the trader can claim the difference. *There were complaints that these claims were often not duly verified and there was substantial revenue loss on this count.*

*Tax payers and a section of enforcement officials acted in collusion to evade taxes due to the State through under-assessment and short-levy.*

Implementation of the GST would result national common market & least incentive for traders on the basis of area based tax incidence.



# Interrelationship between Indian Stock Market Development and Economic Development of India for the Period:1981 - 2015

Pradeep G Tulsian  
V. Chari

## Abstract

*Through this paper an attempt has been made to investigate the relationship between stock market development and economic development in India, during the period 1981 to 2015. The Indian stock market and economy has grown substantially in the recent past. In this study, growth rate of GDP and BSE market capitalization are used as proxy for economic development and stock market development respectively in India. The study has used ADF unit root test, Granger Causality Test and Engle-Granger Test to analyze the short term and the long term relationship between them. From the results of the tests it has been established that in short term neither GDP nor Stock Market capitalization have any significant impact on each other, while in long run both are having significant impact on each other. Therefore, the government should have to frame the policy which will not only focus on the economic development, but also boost the stock market as the stock market development boosts the economic development and cannot be ignored in the long run.*

## Key Word

*Economic Development, Economic Growth, India, Market Capitalization, Stock Market Growth*

## Introduction

The debate of the impact of the financial market and the economic growth on each other has continued since long. In spite of various empirical studies no clear cut direction of causality has been established. Each study gives a different result based on time, country and other factors. The importance of financial market was recognized long back when Walter Bagehot (1873) defined “Money is economical power”. Financial markets are driving engine of any economy. As the economy grows over time, importance of financial market keeps on increasing for further economic growth and affecting the economic welfare. This has been confirmed by C. Rangarajan, Ex Governor, RBI, India (1998), “The growth process of any economy depends on the functioning of the financial markets which also helps to augment its capital formation”. Savings and investments are the two main pillars for the growth of any economy and the financial market development. The financial market provides the resources (i.e. investment) to the industry, trade and commerce to grow. The surplus fund available in the system (i.e. savings) fills the gap i.e. where the investments are needed or are in deficit. It was established in various studies (McKinnon (1973), Shaw (1973), Bencivenga and Smith (1991, Levine 1997)) that efficient and developed financial markets can improve the efficiency of allocation and utilization of savings which could lead to economic growth. With the globalization and increase in the investment opportunities in the other countries, the economic performance of the countries is judged by the performance





of the financial market of that country.

The Indian stock markets did not play a major role in the economic development before 1990. In the present scenario, the stock markets are playing a major role in the economic development. In order to strengthen the Indian economy and to curb the financial requirements gap of the industry, trade and commerce, development of stock exchange was promoted. The financial markets have developed and undergone substantial changes over the period in India i.e. from money lenders to banks and then to stock exchanges, which are fully electronic and based on the modern technology.

Stock markets play a vital role by raising the capital and allocating the same to various industries. The degree of the influence of stock markets on economic growth is based on how effectively they improve capital accumulation, facilitate capital mobilization and increase the productivity of capital investment. This result has been seen in various studies across the globe including India (King and Levine (1994) Levine and Zervos (1996,1998) Nazir et al (2010) Pradhan (2011)). Today, the Indian Stock markets have gained a reputation and status in Asia and World. One of the India stock exchanges viz. Bombay Stock Exchange (BSE) is amongst the few oldest exchanges across the world, where as National Stock Exchange (NSE) is amongst the most advanced in terms of technology.

## Objectives

This study has been carried out to investigate the relationship between the economic development with the stock market development with the main objective of finding out the mutual impact of the economic development and the stock market in the last 35 years (1981-1915) in India i.e. "Does economic development lead to stock market development or vice versa?"

## Literature Review

In past many studies have been carried out to investigate the relationship between the stock market development and the economic development throughout the world for different periods and countries. **Levine (1991)** argued that stock market accelerates the growth by facilitating the trade without disrupting the productive process. Stock markets provide liquidity and help the lenders to exit if they need funds

or want to exit. Stock market helps investor to invest in a large number of firms and improve the allocation of funds, which will increase the economic development. According to King and **Levine (1994)** stock markets accommodate and discover the value of the new innovation and play an important role in evaluating, managing, and funding the entrepreneurial activity that leads to the economic development. Levine and **Zervos (1998)**, based on 47 countries experience for the period 1976-1993, found that banking development and stock market liquidity are good predictors of the economic growth and a strong and significant correlation exists between the stock market development and the economic development. **Arestis et al. (2001)** studied the data of five developed economies for the time period of 1968 to 1998 and the results were found to be country-specific. Both stock markets and banks seem to have made important contributions to the economic development in France, Germany and Japan. While in UK and USA it was found to be statistically weak and the relationship runs from the economic development to the financial development. **Nieuweburgh et al. (2006)** using co-integration analysis found strong evidence for growth promoting role of stock markets and finds that the stock market development was a better forecaster of the economic growth than bank based development in Belgium during the period from 1830 to 2005. **Brasoveanu et al (2008)** examined the correlation relationship between the capital market development and the economic growth in Romania for the period from 2000 to 2006 using linear regression function and VAR models. The results suggest that the capital market development is correlated with the economic growth with positive effect. The result further shows that there is a strong link which indicates that the economic growth leads to the capital market development. **Aboudou (2009)** examined relationship for the West African Monetary Union economy and concluded that there is strong causal flow from the stock market development to the economic growth and were in line with the supply leading hypothesis and the causal relationship is unidirectional between the real market capitalization ratio and economic growth. **Nazir et al (2010)** examined the relationship between the stock market development and the economic growth in Pakistan for the period from 1986 to 2008 using Augmented Dicky-Fuller test. The result shows that the economic growth can be achieved by increasing the size of the stock markets as well as the market capitalization of a country. **Kirankabes and Basarir (2012)** examined the causality relationship between the economic growth and

the stock market development of Turkey for the period from 1998 to 2010. The findings show that there is a long-term relationship between the economic growth and the ISE 100 Index, and a one way causality relationship with the ISE 100 towards Economic Growth. **Singh (1997)** argued that in most of the developing countries the stock market development is not important in achieving the long-term economic development.

There are very few studies which have examined the interrelationship between the Indian economy's growth and its stock market growth. **Azarmi et al (2005)** examined the relationship for a period from 1981 to 2001 and found that, during the post liberalization period the stock market development and the economic growth displayed negative correlation in India. While the study conducted by **Kamat and Kamat (2007)** concluded that in the short run financial infrastructure caused economic growth and in the long run the stock market development causes infrastructure growth. **Pradhan (2011)** suggested that during 1994 to 2010 the Indian stock market development indicates the presence of long run equilibrium relationship between the financial development and the economic growth. The findings also suggest that the stock market development is an integral part of the economic growth which in turn is associated with the financial development of the economy. **Paramati and Gupta (2011)** examined the monthly and the quarterly data of the Index of the Industrial Production (IIP), the real GDP data and the stock price for the period from April 1996 to March 2009 of India to investigate the long run and short-run relationship between the stock market development and the economic growth. Their investigation gave a mixed result for monthly and quarterly data but eventually it was concluded that these results provide evidence in the favor of the 'demand following' approach in the short-run. According to them "Stock markets offer capital investment at competitive cost to the entrepreneurs that boost the economic development". **Kar and Mandal (2012)** reexamined whether the financial activity or the size of the financial market plays a significant role and which structure i.e. bank based or stock market based has impact on the growth process for the post-reform Indian economy. The study has concluded that the financial deepening has a long-run impact on the growth. Both the size and activity in the banking sector contribute independently to the economic development. In the case of the stock market, it is the size that contributes to the economic development.

## Methodology

This review clearly identifies a research gap. Various studies had given a mixed result for different period mainly with respect to India. Not a single study has been carried out for the period of 35 years starting from 1981 to 2015 considering stock market capitalization as proxy of financial market development for India.

In the earlier sixties, there were very few stock exchanges (6 or 7 in numbers.). Before 1980, government was focused on the economic development and not much focus was given to stock markets development. No new stock exchange was opened till 1980. Fourteen new stock exchanges were incorporated during 1980 to 1990. With the increase in the number of stock exchanges, number of listed companies had also increased from nearly 2265 in 1980 to 6229 in 1990. On 2nd January 1986, BSE had launched the first equity index i.e. S & P BSE Sensex (presently known as Sensex) and placed the stock exchange on the organized track. Therefore, the pre liberalization period (1980 to 1990) was a flourishing phase in the history of the Indian stock exchange. It has given the vision of growth and development to the stock exchanges in the coming years. Therefore, in this paper the interrelationship between the economic growth and the stock market growth is investigated from 1981 onwards.

The investigation in this paper begins with a short review of the GDP growth in India which is followed by a brief description of the history of the Indian Stock Market and role of stock market in Indian economy. To measure the growth rate of any economy, GDP is considered as the most appropriate indicator. Similarly for the stock market development, market capitalization is one of the strongest indicators. Market capitalization of only BSE has been taken as more companies are listed there and NSE came into existence in 1992 only. Therefore, in this paper annual growth rate of GDP at market prices and stock market capitalization at current price, only two variables are considered. The time period selected is from 1981 with the year 1979-80 being designated as zero. The relationship was first analyzed on short term basis as there were many breaks in economic development of India during this period. Thereafter a long term analysis was undertaken with the presumption that long term would bring about a more lasting impact.

To establish the relationship between the variables a Unit root ADF tests, Granger Causality test and Engle-Granger Co-integration methods are used. These tests have been used in majority of the studies and hence, we have also considered these as the best method to study the relationship. These tests are used to test the following null hypotheses.

1. GDP growth rate does not granger causes stock market capitalization growth rate in short run.
2. Stock market capitalization growth rate does not granger causes GDP growth rate in short run.
3. GDP growth rate does not granger causes stock market capitalization growth rate in long run.
4. Stock market capitalization growth rate does not granger causes GDP growth rate in long run.

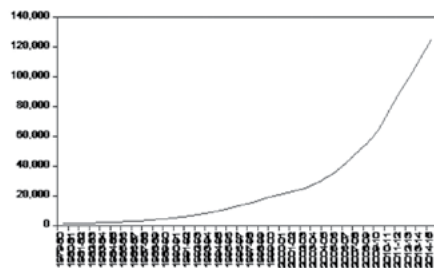
### Journey of the Indian Economic Development

Since Independence nearly 68 years have passed, still India is termed as a developing country but there is no doubt that it may achieve the status of developed country soon. Between 1900 and 1950, the growth rate of the Indian economy was very negligible i.e. below 1% which has been improved to nearly 3.5% between 1950 and 1980, which is popularly known as “Hindu Growth Rate”. The growth rate has been further improved to more than 5% during 1980 to 2002. The reason of low growth rate during 1950-1990 was protection given to the domestic industries from the foreign competitors (Kochhar et al 2006, Virmani 2004). The ninth plan (5 year plan) has put the target of the accelerated growth rate of more than 8% and India has witnessed the average growth rate of 8.25% during the period 2003 to 2012. Economist has named this “Neo Hindu Growth Rate”. During this period, everyone was talking about the Indian growth story in the world. But this growth rate did not continue and came down to below 5% in the year 2013-2014 due to global slowdown. The same improved to 7.2% in year 2014-15 and is expected to be further improved to 7.6% in 2015-2016 based on the new base year series of 2011-12 at constant price as per the recent economic survey.

Economic development is a process of development in the field of agriculture, industry, trade, transport, irrigation, power, etc. in order to raise the living standards and the well-being of people. India's growth rate shows overall improvement in all the sectors of the economy i.e. Gross Domestic Savings, Gross Domestic Capital Formation, Agriculture and allied

sector's, Industry, Power, Finance, Insurance and Real Estate, Export, Service Sector etc. Economic liberalization, industrial deregulation, privatization of state-owned enterprises, and reduced controls on foreign trade and investment, began in the early 1990, which has accelerated the India's growth. India has managed to achieve the growth rate of more than 8% (at constant price) during the year 2010-11 in spite of the global financial crisis. The main reason for such growth rate is strong domestic demand. After 2010-11, India was also affected by the continuous global economic slowdown. The major reasons of slow down were high inflation and interest rates and slow progress on economic reforms. Moreover, since past years it is very much clear that India is developing into open market economy with positive growth outlook. The graph shows the growth of the Indian GDP at market price (Base Year 2004-2005) from 1980 to 2015.

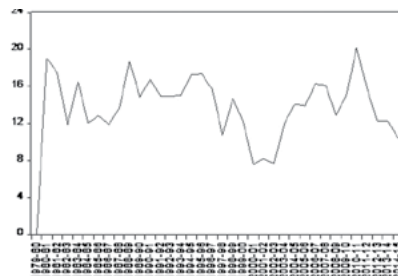
**Graph Number 1: GDP Growth (at Market Price) from 1979-80 to 2014-15**



**Source :** RBI's “Handbook of Statistics on Indian Economy”

The above graph shows that the Indian GDP was more or less stagnant during 1980 to 1990 and started rising since 1990 and picked up a pace after 2000. The annual growth rate of GDP since 1980 to 2015 is shown in graph no. 2.

**Graph Number 2: GDP Growth Rate (at Market Price) from 1979-80 to 2014-15**



## History of the Indian Stock Market

The history of Indian Stock Market started during 18th century when East India Company shares were traded. Till the end of the nineteenth century Bombay (now Mumbai) and Calcutta (now Kolkata) are the two securities trading centers and bank shares were the major trading stock. The first trading meeting venue in 1850 was in front of the Town hall in Mumbai under the banyan tree known as Horniman Circle. The brokers found a permanent place in 1874 in a street known as “Dalal Street” (Broker’s Street). During 1875, the brokers organized and formed “The Native Shares and Stock Brokers Association, Bombay” presently known as the Bombay Stock Exchange (BSE). BSE was the first ever stock exchange in Asia and one of the oldest exchanges in world.

The Calcutta stock exchange was established way back in 1830 and organized in May 1908 under the name “the Calcutta Stock Exchange Association”. Ahmedabad stock exchange was established in 1894 as a Public Charitable Trust. The Securities Contracts (Regulation) Act comes into existence in 1956 with an object to control the speculation.

During first two five-year plans, the private sector undertakings (PSU) were more developed but the shares of these PSU were not listed on stock market. Strict regulations and controls placed by the Controller of Capital Issues (CCI) had demotivated many companies and for nearly four and half decades companies were not going in public and the size of the stock market remains small and limited. The National Stock Exchange (NSE), established in 1992 is amongst one of the most sophisticated and advanced stock exchange in terms of technology.

With the emergence of nationwide stock terminal networks, development in technology and abolition of compulsory listing in regional stock exchanges, most of the trading is done on BSE and NSE. Small and regional stock exchanges become defunct. Therefore, SEBI has passed an order in 2012 to close down the small and regional stock exchanges. The exit option has been provided to those listed companies, which are listed in regional stock exchanges and allowed them to list their shares on BSE and/or NSE without any restriction. Since many companies were already listed on BSE/NSE, very few companies had accepted the option and got listed on BSE/NSE. Listing of those companies had increased the market

capitalization of BSE without fresh issue of capital. Since numbers of company were few and their market capitalization is of not much value, this has no significant effect on the aggregate market capitalization growth rate. Moreover, since no separate data was available, this is considered as the limitation of this study.

## Role of the Stock Market in the Economy Growth of India

Since Independence, the Indian economy has significantly developed and simultaneously the financial markets were also developed to meet out the requirement of the economic development. With the development, finance sectors became more organized and shifted from mahajan system to Bank and Stock Market. Multi-dimensional growth of Indian stock markets was seen in terms of funds mobilizations, turnover, market capitalization, etc which resulted into the introductions of many financial instruments into the market i.e. debentures, public sector bonds, call money, commercial papers, certificate of deposits etc. SEBI was established as a regulator to develop and control the primary and secondary markets.

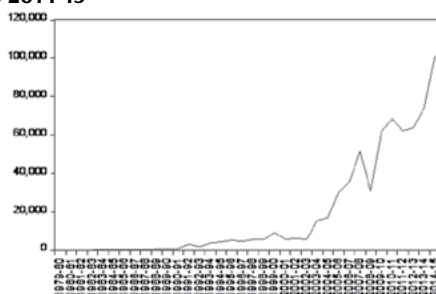
Stock exchange mobilize the savings (capital), provides liquidity, sharing risk and so on. Since India is a developing country, it requires huge capital for various projects mainly in the infrastructure and capital goods sector. Being these projects are highly risky and require huge capital, no Industrialist wants to invest in these projects. Stock exchange through primary/secondary market provides resources to these projects and shares the risks. Stock exchange provides an exit route to the investors who either in need of funds or want to exit from the company/project for profit.

Before, 1990, financial markets in India were not contributing much in its economic growth but early nineties changed the whole scene of the Indian Financial Market. Due to the development and policy changes made in Indian financial market, it became one of the most emerging markets in the world. The Indian financial markets underwent changes; the Indian economy also came on the track of high growth rate from the stagnating “Hindu Rate of Growth”. The growth rate of Indian economy improved due to various policy decisions for example liberalization policy, opening doors for foreign investors, and foreign industrial participation etc. Post reform period, (after 1990) the growth in stock market was supported

by markets reforms, internationalization of financial markets, growth of financial intermediation, huge inflows of FII, rising foreign exchange reserves, IT and real estate boom etc. This liberalized policy boosted the Indian stock market. Indian government had disinvested in the flagship companies and banks to raise the funds to reduce the fiscal deficit. In absence of the stock market development, it will be very difficult for the government to raise the funds through disinvestment route. In the recent past, when there is bearish trend in the stock market, government has not achieved the budgetary target of disinvestment.

As a result the total volumes in stock markets increased many folds, i.e. from Rs. 150 crore in 1990 to more than Rs. 10000 crore. At present the trading patterns of stocks have been totally changed from the manual trading to the electronic trading, which resulted into the reduction of the trade and settlement cycles. This helped into eliminating the overall settlement risks. The Indian stock market has experienced significant structural changes over the years. Today, the Indian stock market is the one of the largest stock market on the basis of investor base in the world and has a collective pool of about 20 million investors. There are over 9,000 companies listed on the Indian stock exchanges. Indian stock market is amongst the five biggest stock exchanges in the world in terms of transactions volume. Series of economic policy reforms taken by the Reserve Bank of India (RBI) has shaped the development of the Indian Financial Market, in which stock exchanges have played a vital role. The graph no 3 shows the trend of market capitalization growth rate in India between 1980 and 2015.

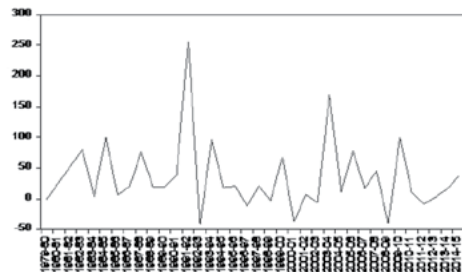
**Graph Number 3: BSE Market Capitalization from 1979-80 to 2014-15**



The data has been sourced from the RBI's "Handbook of Statistics on Indian Economy" and BSE stock exchange website.

The above graph clearly indicates that during pre liberalization there was no significant increase in the stock market capitalization. It started increasing only after liberalization i.e.1991 and has picked up significantly after 2002-2003. Such increase was due to increase in number of companies and market price of the listed companies, the effect of the same is clearly reflected in the above graph.

**Graph Number 4: BSE Market Capitalization Growth Rate from 1979-80 to 2014-15**



The data for stock market capitalization is not available for the year 1980-81 and 1981-82. The graph indicated that the market capitalization increased drastically in 1991-92 i.e. more than 2.5 times as compared to the previous years. Such a high increase was due to the immediate reaction of the liberalized policy. The graph indicates that there was a wide fluctuation in the growth rate during pre and post liberalization policy year (1990-91). The down fall in 1992-93 was due to the Ketan Parikh scam in stock exchange and 2000-2001 and 2008-2009 was due to the major global slowdown, which had also affected the Indian economy. Therefore, it indicates that stock market capitalization is significantly affected by the current event in short term.

### Empirical model

To identify co-integration of two time series, it is very much important to apply unit root tests for individual data series to have some idea about whether the variables are integrated with same order or not. Therefore, to find the order of integration of data, Augmented Dickey-Fuller (Dickey and Fuller, 1979) test was applied to check whether data contained unit root (non-stationary) or was a stationary process and established at which order the data is stationary. The data is said to be stationary if mean and auto co variance do not depend on the time factor. Any data which is not stationary is said to be non-stationary. A data which is integrated of order is to be

denoted as I(d), which indicates that the data is differenced “d” times before it became stationary. Therefore, if the data is stationary at zero levels i.e. without having to be differenced, then it is to be denoted as I(0). To find out the long run and short run behavior of the variables under Engle- Granger co integration test, it is important to have the same order of integration for all the variables.

The variables are co integration means there is a long run equilibrium relationship between these variables. Linear combinations of two or more time series can be stationary in spite of variables being individually non-stationary. Engle-Granger (1987) co-integration test is most widely used tests for co-integration. To test the relationship between stock market development and economic growth Granger Causality bi-variate test has been applied, and thereafter Engle- Granger

co-integration test has been applied.

## Analysis and results

### Unit root and co-integration analysis

For co-integration analysis, the first step is to verify whether the data is stationary or not. The null hypothesis taken is whether data has a unit root? As discussed earlier, Augmented Dickey-Fuller (ADF) test has been applied for unit root test. The test is conducted for both BSE capitalization growth rate and economic growth rate. The test is conducted at constant and with trend. The unit root test rejected the null hypothesis at its level for both BSE growth rate as well as GDP Growth rate. Therefore, both variables are integrated at level i.e I(0). The results are given in Table 1 below

**Table 1 : Unit root result (log values) of BSE Growth Rate and economic Growth Rate**

Level Variables for ADF test (Constant)		
	t- values	p- values
BSE Growth Rate	-7.7479	0.0000
GDP Growth Rate	-6.1899	0.0000

Level Variables for ADF test (Constant, with trend)		
	t- values	p- values
BSE Growth Rate	-7.956	0.0000
GDP Growth Rate	-6.1903	0.0001

### Granger causality test results

To establish the short run relation between various entities Granger causality test has to be applied to find out the integration of the data. To find out whether the economic growth causes stock market growth or the stock market causes the economic growth, we have applied the same test here.

Following pair of regression is created to establish the relationship:

$$GDP_t = c_1 * SM_{(t-1)} + C_2 * GDP_{(t-j)} + u_{1t} \quad \text{-----1}$$

$$SM_t = c_3 * SM_{(t-1)} + C_4 * GDP_{(t-j)} + u_{2t} \quad \text{-----2}$$

Where

GDP is at Market price

SM is Stock Market Capitalization at current price

t is time in year from 1981 to 2015

j is unit root =0

$u_{it}$  = residual of time t

We assume that  $u_{1t}$  and  $u_{2t}$  are uncorrelated.

Here GDP and SM are stationary at level [i.e. I(0)] as we have confirmed the same with the unit root test as discussed above. Null Hypothesis: GDP does not Granger causes Stock market capitalization and Vice versa.

Table 2 ; Granger Causality Results for Economic growth Index

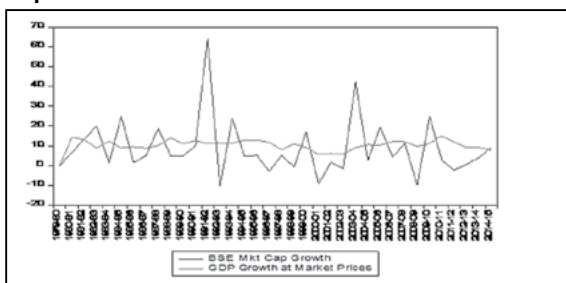


Vs. selected Stock Market Indices of BSE

Null Hypothesis	F-Statistics	P-Value	Decision
GDP does not Granger cause BSE	0.836	0.445	Do not reject null
BSE does not Granger cause GDP	1.149	0.333	Do not reject null

The result indicates that there is no relationship exists between GDP and Stock market Capitalization i.e. neither GDP Granger causes Stock market development nor the stock market development Granger causes the economic growth in the short run. The above result is also clearly seen from the graph no. 5 shown below.

**Graph Number 5: GDP Growth rate and BSE Market Capitalization Growth Rate from 1979-80 to 2014-15**



\*Scale for GDP and BSE Market capitalization has been adjusted for the better presentation.

The above graph has clearly indicated that there is no relationship between the economic growth and stock market capitalization in short run as there are directional changes on year to year basis. The reason of such variation is due to various factors which effects the stock market capitalization in short run, which has been discussed in this paper.

### **The Engle Granger Method**

The long run relationship between the stock market development and the economic growth are evaluated based on the Engle Granger method. If any causal connection exists between the economic growth and the stock market development, the next immediate concern would be to understand the long-run relationship between these variables. The existence of the long run relationship can be understood through the integration test. If the two variables are co-integrated, then it could be presumed that these variables have a long run relationship.

The relationship between two variables are assessed based on the GDP growth rate as the independent variable (variable for economic growth) and the BSE Capitalization growth rate as the dependent variable (variable for stock market development) and vise a versa. The results of the same are shown hereunder:

**Table 3 : The Regression result of GDP on Stock Market Capitalization**

Dependent Variable: Stock Market Capitalisation Growth Rate				
Method: Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP Growth Rate	1.790983	2.811641	0.636989	0.5288
C	-69.70107	319.2490	-0.218328	0.8286
R-squared	0.012920	Mean dependent var		133.5457
Adjusted R-squared	-0.018922	S.D. dependent var		60.07623
S.E. of regression	60.64193	Akaike info criterion		11.10654
Sum squared resid	114000.8	Schwarz criterion		11.19724
Log likelihood	-181.2579	Hannan-Quinn criter.		11.13706
F-statistic	0.405754	Durbin-Watson stat		2.801024
Prob(F-statistic)	0.528809			

To know whether the above two variables are co-integrated or not, the stationarity of the residual terms of the first equation is to be tested. The result of the stationarity result of the 'u' term is given below.

**Table no 4:**

Null Hypothesis	RESIDGDPLEVEL has a Unit Root		
Exogenous	Constant		
Leg Length	0 (Automatic – based on SIC, Maxilag=8)		
		t-statistics	Prob. *
Augmented Dickey-Fuller test statistics		-7.941081	0.0000
Test Critical Values	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.619160	

\*MacKinnon (1996) one sided p-values

The above test result has shown that the null hypothesis is rejected, which that the "u" is stationary. Therefore, there is a long run relationship between the variable and in long run economic growth rate (GDP) cause the Stock Market Growth rate.

Further taking BSE Capitalization growth rate as the independent variable (variable for stock market development) and GDP growth rate as the dependent variable (variable for economic growth). The results of the same are shown hereunder:

**Table No 5:  
The Regression result of Stock Market Capitalization on GDP**

Dependent Variable: GDP Growth Rate				
Method: Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Stock Market Capitalisation Growth Rate	0.007214	0.01325	0.636989	0.5288
C	112.5200	1.654129	68.02369	0.0000
R-squared	0.012920	Mean dependent var		113.483
Adjusted R-squared	-0.018922	S.D. dependent var		3.812879
S.E. of regression	3.848651	Akaike info criterion		5.592014
Sum squared resid.	459.1757	Schwarz criterion		5.682712
Log likelihood	-90.26824	Hannan-Quinn criter.		5.622531
F-statistic	0.405754	Durbin-Watson stat		0.618283
Prob(F-statistic)	0.528809			

To know whether the above two variables are co-integrated or not, the stationarity of the residuals terms of the first equation



is to be tested. The result of the stationarity result of the 'u' term is given below.

**Table No 6:**

Null Hypothesis	RESIDBSELEVEL has a Unit Root		
Exogenous	Constant		
Leg Length	0 (Automatic – based on SIC, Maxlag=8)		
		t-statistics	Prob. *
Augmented Dickey-Fuller test statistics		-3.102683	0.0367
Test Critical Values	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.619160	

\*MacKinnon (1996) one sided p-values

The above test result has shown that the null hypothesis is rejected, which means that "u" is stationary. Therefore, there is a long run relationship between the variable and in long run stock market growth rate causes the economic growth rate (GDP).

**Conclusion:**

This paper examines the interrelationship between the economic development (GDP growth rate at market price taken as proxy) and the stock market development (BSE stock market capitalization growth rate taken as proxy) in the India using the time series data from 1980-81 to 2014-15. The Granger causality test result shows that in short term there is no relationship between the economic development and the Stock market development. In short term, the stock market capitalization is influenced by recent scams, stock market volatility, effect of world stock exchanges, FII investment, future and option positions, future expectation, year ends results of the companies and so on. Economic development is again a long run process, therefore may not have an impact in the short run on the stock market development. Moreover, Engle Granger test shows that in long run there is a bidirectional relationship between the stock market development and the economic development and each one is having influence on the other.

Before 1980, the Indian government has not much focused on the stock market development and the economic growth rate was almost negligible. Thereafter, government had focused on

the stock market development and the economic growth rate had picked up. After liberalization i.e. 1991, the government has focused on both i.e. economic development and stock market development, the results of economic growth are much better and the same has been reached even double digit. This has clearly indicated that as the stock market developed, the economic development took place or vice-a-versa.

With the stock market development many persons in India have invested in the stock markets. Many infrastructure and capital goods projects like bank, road, port, airport, transport, aviation, education, health, cement and steels, jewelers etc. had collected funds through stock market, which resulted into the increase in GDP. With the stock market development, foreign direct investment (FDI) had increased in India. Disinvestment through stock exchange, government has raised money for economic development.

**Azarmi et al (2005)** have only studied the relationship from 1981 to 2001 and concluded that the stock markets development and the economic growth having negative correlation during the post liberalization period in India. Whereas this study has established that there is a bidirectional long term relation between the economic development and the stock market development in India. Market capitalization is the most significant indicator of stock market development. Due to stock market development, market capitalization has increased in India as Investor base expended. Further this increase in market capitalization could take place because the increased GDP has increased the saving and thereby increased the investment and risk taking capacity of the public. Therefore, with the focus on GDP growth rate,

the government should keep on supporting stock market development to reap further benefits from long term mutual beneficial impact.

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# Modifications in Limited Liability Partnership (LLP) Legislation to Provide Incentive to Foreign Limited Liability Partnership (FLLP) - A Case Study on the Professionals in Kolkata

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## Abstract

*Limited Liability Partnership (LLP) is a hybrid of partnership and corporate form to fill up the gaps and deficiencies of the two conventional business structures. LLP has evolved in the present scenario due to the various demands of the professionals especially the accounting professionals. The inability of the professionals to practice in limited liability entities, the rise in the litigations against the professionals, the exposure to unlimited liability, etc. are some of the reasons that had made the professionals to demand for limited liability entities. In the present article, an attempt has been made to highlight some issues that can be modified in the legislation to provide incentive to Foreign LLPs (FLLPs) in India and to gather and analyse the opinions of the professionals in this regard.*

## Key Words

*Limited Liability Partnership (LLP), Foreign Limited Liability Partnership (FLLP), Professionals, Taxation, Demography*

## Introduction

Sole proprietorship, partnership and company forms are the three basic organisational structures that have existed since time immemorial. But all these organisational structures do not possess all the attributes together to meet the needs of different sectors of the economy. People accepted and continued their business activities through these conventional forms because there was a lack of a suitable structure to fulfil all their needs and requirements. Gradually, with the passage of time, due to demands from different groups of people and sections of society and finally submitting to the market forces, legislators across the world came up with different types of hybrid entities like Limited Partnership (LP), Limited Liability Company (LLC), Limited Liability Partnership (hereinafter referred to as LLP), etc. LLP is a hybrid of corporate and partnership form. It combines within it the flexibility to arrange the internal affairs of the partnership form and the features of limited liability, perpetual succession, separate legal entity of the company form.

According to the LLP Act, 2008 in India, LLP is a body corporate that is formed and incorporated under the LLP Act, 2008. This business form has separate legal entity distinct



from its partners and enjoys perpetual succession. At least two persons (natural or artificial), with an intention to carry on a lawful business, can form an LLP in accordance with the requirements of this Act. The LLP Act, 2008 received the President's assent on 7th January, 2009 and was, thereafter, notified in the Official Gazette. In the international front, the inception of the LLP structure was in the United States of America (USA). It was in Texas, that LLP was formed as an after effect of fall of real estate and energy prices in the 1980s. This fall led to the collapse of the banks and the savings and loans associations (S & Ls). An effort was made to recover the amounts from the lawyers and the accountants who had advised these institutions in the season of speculative lending as the amounts recoverable from these organisations were not substantial. Hence, an initiative was taken by the legislators to protect the innocent partners of the law firms and the accounting firms who were vulnerable to huge claims and were likely to get insolvent due to this (Hamilton, 1995). The demands of the professionals eventually led to the draft of LLP legislation in Texas. Gradually, from Texas, different states of the USA started enacting the LLP legislation with minor variations between them. Thereafter, in the United Kingdom (UK), the demands placed by the auditing industry for limitation of their liability, was finally accepted through the legislation of the LLP Act, 2000 of the UK. The statute was enacted as a response to the Jersey's LLP Bill and the threat from the accounting and auditing firms to relocate to Jersey (Cousins, Mitchell, Sikka and Willmott, 1998, *Financial Times*, 1996a and *Financial Times*, 1996b).

### Overview of the LLP legislation in India with regard to Foreign LLPs (FLLPs)

Section 2 (m) of the LLP Act, 2008 defines Foreign LLP (hereinafter referred to as FLLP) as an LLP formed, incorporated or registered outside India but which establishes a place of business in India. According to Section 59 of the Act, the Central Government is empowered to make rules with regard to the establishment of place of business of FLLP within India and carrying on business in India along with the application with/without modification of the company law or any other regulatory mechanism ([http://www.mca.gov.in/Ministry/actsbills/pdf/LLP\\_Act\\_2008\\_15jan2009.pdf](http://www.mca.gov.in/Ministry/actsbills/pdf/LLP_Act_2008_15jan2009.pdf)). FLLPs are dealt in Rule 34 as evident from the above section that FLLPs are guided only by the Rules.

An FLLP like a firm or a company is given the right to reserve the existing name in India by which it is incorporated and registered in its country of incorporation. It can do so by applying in Form 27 and after payment of a fee of Rs. 10000. Such reservation will remain valid for three years with the right of renewal on payment of Rs. 5000 (Subramanian, 2014).

An FLLP has to file with the Registrar in Form 27 certain certified documents within a stipulated time of 30 days of establishing place of business in India. The documents to be accompanied are certificate of incorporation defining the constitution of such FLLP, full address of the principal office of the FLLP in the country of its registration, the address of the principal place of business in India and the details of the partners and designated partners (if any) along with the details of the names and addresses of at least two resident persons in India empowered to receive any communication served on the FLLP (ibid.).

If there is any modification with respect to the document specifying the constitution of the FLLP, the principal place of business outside India, and any partner or any designated partner of the FLLP, the FLLP should mandatorily file with the Registrar such changes in Form 28 within 60 days from the expiry of the financial year. In other cases, like changes in the certificate of incorporation, principal place of business in India, the details of the persons authorised to act on behalf of the FLLP, the FLLP is required to file Form 29 with the Registrar within 30 days from the date of the happening of the changes (ibid.).

An FLLP is not given any exemption from the filing of Statement of Account and Solvency with the Registrar. According to Rule 24, an FLLP, like any other LLP, has to file with the Registrar, the Statement of Account and Solvency in Form 8 signed by the authorised representatives. Such documents should be filed within the definite period of 30 days from the end of 6 months of the financial year. The documents mentioned above should be in English language. If they are not in English language, then the same have to be translated and certified by the recognised official. An FLLP has to compulsorily file all the documents electronically to the Registrar of New Delhi. Thereafter, the Registrar will issue a certificate for establishment of place of business in India in Form 30. In a situation where an FLLP intends to close its place of business in India, it will have to furnish a notice within 30 days of its intention of closure

of its business in Form 29. From that day of furnishing the notice, it will not be under any compulsion to file any other document in case it does not have another place of business in India (*ibid.*).

### Brief Review of Literature

In this section, an attempt has been made to briefly review the major works available in this area and present the same in the chronological order as shown below.

✳ **Hillman (2005)**, in his research article, has depicted how both the partnership law and the corporate law have influenced each other. Both the laws have casted some impact on each other. He has depicted how the partnership law has uniquely evolved through ages through *private ordering* and bargaining among the partners. It is this attribute of the partnership law that has influenced the closely held corporations where the shareholders try to define their relationships through bargaining and *private ordering*. The other branch of corporate law focuses on mandatory framework of governance where the shareholders are not given the autonomy of bargaining. Hence, he concludes that there are two branches of corporate law co-existing with each other.

✳ **Singh (2008)**, in his article, has upheld certain issues pertinent to LLP legislation in India. He has highlighted the gaps in the legislation affecting the LLPs that require to be filled up. In this context, he has depicted the reasons for the evolution of LLP law in India and the main features of this organisational vehicle.

✳ **Barve (2013)** has given a glimpse of the LLP law in India by highlighting the global scenario and the genesis of LLP in India. Along with this, he has dealt in detail the features, advantages and disadvantages of the LLP structure, etc. He has drawn the readers' attention specifically to one of the reasons for LLP not gaining popularity in India, the way it was expected to be. He specifically pointed out the obstacles coming in the way of the firm wishing to convert to an LLP and the constraints coming in the way of company wanting to convert to an LLP.

✳ **Chitale (2013)** has vividly described the opportunities the professionals in the advisory capacity, especially the Chartered Accountants (CAs) have in the form of LLP. He

has identified the situations where forming an LLP is the best available option for an enterprise in a foreign country wishing to set up business in India, when a person is hesitant to take unknown persons as partners, for project businesses, for moneylenders facing substantial financial risk, etc. A professional is not only restricted to advise a person to form an LLP in various situations like the ones mentioned above but can easily carry on their professional practice competitively through LLP structure. The benefits of multidisciplinary service under one roof, limited liability in a highly litigious market environment, unhindered growth in the size of the LLP are some of them that should prompt the professionals to take the benefit of the structure.

### Research Gap

From the above account and review of literature, it is observed that the legislation is silent regarding whether the Statement of Account and Solvency and the Statement of Assets and Liabilities are to be filed with the figures relating to India only or should encompass all its operations spread throughout the globe. It is also felt that the FLLPs should get the benefit of tax treaties of India with various countries to avoid the incidence of double taxation. In case, they are denied with tax treaty benefits, it is again felt that they should be treated as non-residents for the purpose of tax in India. In India, an LLP is a body corporate but it is treated as a partnership firm for the purpose of taxation. Different countries adopt various approach with regard to the taxation of LLPs. Some countries prefer to treat it like a company and some want to treat it akin to a partnership firm for the purpose of taxation. The issue that can be argued upon is whether the status of an FLLP with respect to taxation will depend upon the country of its incorporation or will be guided by the provisions of the income tax law in India. Moreover, if one traces the evolution of LLP internationally as well as in India, one of the root causes of its inception is due to the demands of the professionals like the accountants, advocates, etc. Hence in this research paper, an attempt has been made to study the opinions of the professionals with regard to some of the issues of FLLPs in India that can be modified in light of providing incentive to them.

### Objectives of Study

The research is conducted to gather the perceptions of the





selected professionals to attain the objectives given below.

1. to assess whether qualification, occupation, gender and income level of the respondents cast a significant impact on each of the variables constituting modifications in LLP legislation in India to provide incentive to FLLPs

2. to confirm the dimensionality of the data set and to identify the most important and the least important variable under modifications in LLP legislation in India to provide incentive to FLLPs.

## Research Methodology

The study is empirical in nature. Both primary and secondary data have been used in this research. Primary data have been gathered by administering a structured questionnaire among the respondent groups namely the selected professionals in Kolkata. Pilot survey has been conducted to ensure the validity of the questionnaire. The respondents are the members of the Institute of Chartered Accountants of India (ICAI) and the members of the Institute of Company Secretaries of India (ICSI). The sample has been selected through convenience sampling method from the list of members in Kolkata maintained by these professional bodies. The list of members of the ICAI as on 1/4/2011 and the list of members of the ICSI as on 31/03/2012 have been used to select the sample for the study.

In order to make the research an intensive one, the researcher set a target of 1% of the population. The questionnaire has been distributed both physically and through e-mails to around 1% of the population of the professionals in Kolkata. In spite of distribution of the structured questionnaire to 1% of the population, most of the professionals did not express their willingness to respond. This may be due to the novelty of the underlying idea of the questionnaire, difficulty of the matter, lack of time on their part, etc. The study is finally based on 86 completed questionnaires finally received. The sample constitutes respondents who form around 0.6% of the population of members of the ICAI (68 CAs in number) and around 0.7% of the population of members of the ICSI (18 Company Secretaries (CS) in number). Both practising and non-practising members are included in the sample. Employee-professionals in CA firms are considered as practising members. Secondary data have been collected

from books, journals, websites, etc.

The structured questionnaire is divided into three sections. The first section tries to gather some demographical details of the respondents namely the name, contact details, age, qualification, occupation, gender and income level. The second section deals with three point Likert-scale statements with regard to causes of LLP legislation all over the world, causes of LLP legislation in India, disadvantages and advantages of LLP, modifications in LLP legislation in India for protection of stakeholders' interest, modifications in LLP legislation in India to provide incentive to FLLPs, modifications in LLP legislation in India to make it more effective, sectors attracting LLP in India, general awareness of the LLP structure and tax efficiency feature of the LLP form. The third section comprises certain multiple choice questions with respect to appropriateness of timing of LLP legislation in India, modifications to LLP legislation in India for protection of stakeholders' interest, nature of protection to an innocent partner and sectors attracting LLP in India. For the purpose of the present paper, variables underlying modifications in LLP legislation in India to provide incentive to FLLPs are selected for study.

The data gathered have been studied using SPSS version 20. The data have been analysed using Cronbach's  $\alpha$  (Alpha), Chi-square test, Fisher's Exact test and Principal Component Analysis.

## Empirical Analysis

### First Part

### Demographic Profile of the Respondents

79.1% of the respondents in the selected sample are CAs and the remaining **20.9%** are CSs. **54%** of the respondents fall in the age group below **30**, **12%** in the range of **31-40**, **17%** in the age-group of **41-50**, **16%** in the range of **51-60** and **1%** in the age-group of above **60**.

Occupation-wise distribution consists **37.2%** of the respondents in the service sector, **60.5%** in the professional practice and the remaining **2.3%** in other occupations. **68.6%** of the respondents in the sample are male and the remaining **31.4%** are female. Lastly, **12.8%** of the sample falls in the income group below **250000**, **31.4%** in the range of **250000-**

**500000, 23.3%** in the group of **500001-750000, 11.6%** in the income group of **750001-1000000** and the remaining **20.9%** in the income level above **1000000**.

### Second Part

**TABLE A.1**

Reliability Statistics	
Cronbach's Alpha	No. of Items
.661	4

Table A.1 indicates that the Cronbach's  $\alpha$  (alpha) of 4 likert scale statements is .661 reflecting high internal consistency among them.

In order to assess whether the different biographical variables such as the qualification, the occupation, the gender and the income level of the respondents have a significant impact on the variable constituting different issues in LLP legislation in India to provide incentive to FLLPs, Pearson Chi-square Test or Fisher's Exact Test has been performed using SPSS version 20. Conventionally, to examine the independence of

different attributes, Pearson Chi-square test is done. But, in the given study, Fisher's Exact Test has been done when the expected count is less than 5 in more than 20% of the cells in the crosstab.

In the table given below, the Asymp. Sig. (2-sided)/ Exact Sig. (2- sided) or the p value of each variable is depicted vis-a-vis the independent demographic variables such as the qualification, the occupation, the gender and the income level of the respondents. 5% is the significance level at which the tests of hypothesis are being done. If the p value is less than .05 in any case, then the Null Hypothesis gets rejected and the Alternate Hypothesis gets accepted. The Null Hypothesis and the Alternate Hypothesis for the different statements or variables are of the following nature.

*Null Hypothesis ( $H_0$ )* - The concerned demographical variable (qualification / occupation/ gender / income level) has no impact on the opinion expressed by the statements.

*Alternate Hypothesis ( $H_1$ )* - The concerned demographical variable (qualification / occupation/ gender / income level) has an impact on the opinion expressed by the statements.

**TABLE A.2**

Statements	Qualification (p value)	Occupation (p value)	Gender (p value)	Income level (p value)
FLLPs should prepare Statement of Accounts, Statement of Assets and Liabilities and Statement of Annual Turnover for statutory audit compliance based on figures relating to India only.	.067	1.000	.365	.168
FLLPs should get the benefit of tax treaties of India with various countries to avoid the incidence of double taxation.	<b>.016</b>	.821	.113	.345
FLLPs, if denied with the tax treaty benefits, should be treated as non-residents for paying tax in India.	<b>.002</b>	.593	.185	.465
An FLLP should be treated as partnership firm or body corporate depending upon the nature of LLP in the country of incorporation.	<b>.004</b>	.640	.466	.235





Hence, from Table A.2, it is observed that only in 3 cases out of 16 cases, the demographic variable casts a significant impact on the opinion expressed by the statements. Hence, the following Alternate Hypotheses get accepted.

*As the p value is less than .05 i.e. .016, the Alternate Hypothesis is accepted indicating that Qualification has an impact on the opinion that FLLPs should get the benefit of tax treaties of India with various countries to avoid the incidence of double taxation.*

*ii. As the p value is less than .05 i.e. .002, the Alternate Hypothesis is accepted indicating that Qualification has*

*an impact on the opinion that FLLPs, if denied with the tax treaty benefits, should be treated as non-residents for paying tax in India.*

*iii. As the p value is less than .05 i.e. .004, the Alternate Hypothesis is accepted indicating that Qualification has an impact on the opinion that an FLLP should be treated as partnership firm or body corporate depending upon the nature of LLP in the country of incorporation.*

**Third Part**

**Factor Analysis using Principal Component Analysis (PCA)**

**TABLE B.1(i)**

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.720
Bartlett's Test of Sphericity	Approx. Chi-Square	45.831
	df	6
	Sig.	.000

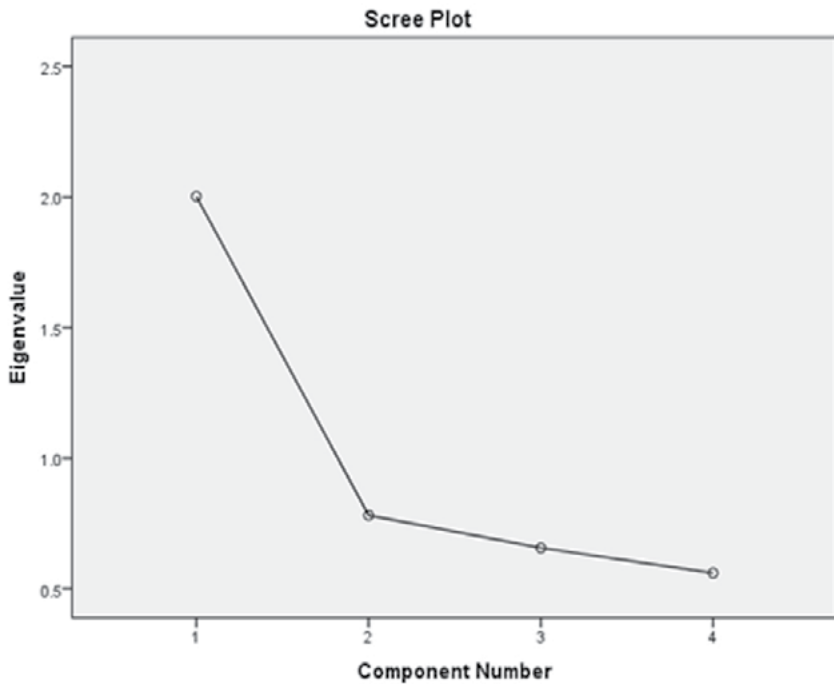
**TABLE B.1(ii)**

<b>Communalities</b>		
	Initial	Extraction
FLLPs should prepare Statement of Accounts, Statement of Assets and Liabilities and Statement of Annual Turnover for statutory audit compliance based on figures relating to India only.	1.000	.380
FLLPs should get the benefit of tax treaties of India with various countries to avoid the incidence of double taxation.	1.000	.543
FLLPs, if denied with the tax treaty benefits, should be treated as non-residents for paying tax in India.	1.000	.604
An FLLP should be treated as partnership firm or body corporate depending upon the nature of LLP in the country of incorporation.	1.000	.475
Extraction Method: Principal Component Analysis.		

**TABLE B.1(iii)**

<b>Total Variance Explained</b>						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Vari- ance	Cumulative %	Total	% of Vari- ance	Cumulative %
1	2.002	50.059	50.059	2.002	50.059	50.059
2	.781	19.528	69.587			
3	.656	16.410	85.997			
4	.560	14.003	100.000			

Extraction Method: Principal Component Analysis.



**TABLE B.1(iv)**

<b>Component Matrix<sup>a</sup></b>	
	<b>Component</b>
	<b>1</b>
FLLPs should prepare Statement of Accounts, Statement of Assets and Liabilities and Statement of Annual Turnover for statutory audit compliance based on figures relating to India only.	.617
FLLPs should get the benefit of tax treaties of India with various countries to avoid the incidence of double taxation.	.737
FLLPs, if denied with the tax treaty benefits, should be treated as non-residents for paying tax in India.	.777
An FLLP should be treated as partnership firm or body corporate depending upon the nature of LLP in the country of incorporation.	.689
Extraction Method: Principal Component Analysis.	
a. 1 component extracted.	

Table B.1(i) indicates Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. Here, the KMO statistic is .720, suggesting that the sample is adequate for generation of meaningful factors. Bartlett's test checks the Null Hypothesis i.e., whether the original correlation matrix is an identity matrix or not. Since here, the actual significance value i.e.  $p < .001$  (less than .05), the Null Hypothesis is rejected and the Alternate Hypothesis is accepted. Thus, there exists correlation among the 4 observed variables. Table B.1(ii) gives the communalities of all the observed variables before and after extraction. PCA works with an assumption that all variance is common and hence the initial communalities of all the variables are 1. After extraction, the communalities of the different variables indicate the portion of variance explained by the retained factors. Thus the retained component will represent .380 unit of variance of the variable representing FLLPs should prepare Statement of Accounts, Statement of Assets and Liabilities and Statement of Annual Turnover for statutory audit compliance based on figures relating to India only, .543 unit of variance of the variable representing

benefit of tax treaties of India with various countries to avoid the incidence of double taxation for FLLPs, .604 unit of variance of the variable representing FLLPs, if denied with the tax treaty benefits, should be treated as non-residents for paying tax in India and .475 unit of variance of the variable representing an FLLP should be treated as partnership firm or body corporate depending upon the nature of LLP in the country of incorporation. Table B.1(iii) gives the eigen values of all components before and after extraction. Only Component 1 is retained with eigen value 2.002 and explaining 50.059% of variance. So, it is found that more than 50% of variance is explained by the retained component. This decision can be also verified with the help of a scree plot as given above with each component on the horizontal axis and the eigen values associated with them on the vertical axis. In the given scree plot, it is observed that the major break is occurring at Component 2 and again it is the Component 1 that is retained. This indicates that all the concerned variables represent one single dimension i.e., Modifications in LLP Legislation in India to Provide Incentive to FLLPs. There is no scope of rotation

of components because one component is extracted and retained. Table B.1(iv) signifies the loadings of each variable on the Component 1. The factor loadings indicate the correlation between the variables and the component. The Component Matrix reflects that FLLPs, *if denied the tax treaty benefits, should be treated as non-residents for paying tax in India* is the most important variable in this dimension with a factor loading of .777 and the least important being the variable representing FLLPs *should prepare Statement of Accounts, Statement of Assets and Liabilities and Statement of Annual Turnover for statutory audit compliance based on figures relating to India only* with a factor loading of .617.

### Conclusion

Hence, it is observed that the demographical attribute of Qualification of the respondents has an impact on the opinion that FLLPs *should get the benefit of tax treaties of India with various countries to avoid the incidence of double taxation*. It is also discovered that Qualification has an impact on the opinion that FLLPs, *if denied the tax treaty benefits, should be treated as non-residents for paying tax in India*. Finally, it is found that Qualification again, has an impact on the opinion that an FLLP *should be treated as partnership firm or body corporate depending upon the nature of LLP in the country of incorporation*. All the variables representing opinions regarding FLLPs, like preparation of Statement of Accounts, Statement of Assets and Liabilities and Statement of Annual Turnover for statutory audit compliance based on figures relating to India only by FLLPs, benefit of tax treaties of India with various countries to avoid the incidence of double taxation for FLLPs, FLLPs denied the tax treaty benefits to be treated as non-residents for paying tax in India and treatment of FLLPs as partnership firm or body corporate depending upon the nature of LLP in the country of incorporation belong to one single dimension or construct. *Foreign LLPs, if denied the tax treaty benefits, should be treated as non-residents for paying tax in India* is the most important variable in this dimension with a factor loading of .777.

### Limitations of Study

The following are some limitations of study.

1. The study has focused on professionals namely CAs and CSs from Kolkata. Other professionals have not been taken

into account.

2. The sample has been selected from Kolkata only.

3. Non-random sampling method i.e., convenience sampling has been used in the present study.

4. The perceptions are gathered at a single point of time. The variations in the perceptions over a period of time have not been taken into account.

5. The sample size could not be increased due to the non-availability of the complete responses from the professionals.

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**Annexure I**

**QUESTIONNAIRE**

The present questionnaire is framed to gather the perception of the professionals in Kolkata regarding Limited Liability Partnership (hereinafter referred to as LLP throughout the questionnaire)

Section 1: Personal details of the respondent

Name:

Address:

Phone/Cell number:

E-mail id:

Qualifications:

Age (Years):

Occupation:

Gender:

Service     Professional Practice     Others                       Male                       Female

Income p.a. (Rs.):-

Below 250000                       250000-500000                       500001-750000                       750001-1000000  
 Above 1000000

**Section 2: Below are few statements given. Please express your agreement or disagreement to the statements on a 3-point Likert scale.**

**The following abbreviations are used:**

**D- Disagree; U- Undecided; A- Agree.**

Statements	D	U	A
1. Liability-related claims take away a considerable amount of the professionals' income	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Joint and several liability of the partners of the partnership firm is the main reason for the professionals to form LLP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The world of the auditors and other professionals is dominated by a few big firms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. There is scarcity and high cost of liability insurance coverage available to the professionals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Statements	D	U	A
5. There is a growing demand of the professionals in India for limited liability entities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. There is a growing demand in the SME sector in India to operate through limited liability entities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The LLP Act in India has been enacted primarily to keep pace with the international legal reforms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. If LLPs are formed, the interests of the stakeholders of the professional services will be neglected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Professionals are neglecting their public accountability through LLPs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. LLPs would cover up the deficiencies of the professionals' work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. LLPs will enhance the competitive position of the large firms as compared to the small firms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Liability crisis of the professional partnership firms will prompt them to undertake self-defensive measures and will reduce their work quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. If the professionals practise in the form of LLPs, the remuneration of the professional services will be reduced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. LLPs would facilitate the formation of multi-disciplinary professional firms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. LLPs will be attractive for the SMEs because of lesser regulatory requirements as compared to the limited companies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Professionals should be allowed to practise in the form of LLP only when a firm exceeds a certain size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. It is appropriate to retain personal liability of the partners of an LLP who have the responsibility of maintaining quality assurance mechanism in the LLP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. The proposal to retain personal vicarious liability for the partners assuming supervisory roles in the LLP would act as disincentive for them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. In India, it would be appropriate for partners of an LLP to face clawback (a liability under certain circumstances to repay amounts received from the LLP in order to meet the claims of sufferers of malpractice) requirement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. It is appropriate for an innocent partner of an LLP to withdraw asset from LLP between the time a claim is made against the LLP and the time it is determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. In India, LLPs should be subjected to the maintenance of minimum amount of liability insurance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. The fixation of minimum amount of liability insurance should be left to the governing bodies of the relevant professions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. For the internal governance of the LLP, detailed rules (including some which are pre-emptive in nature) should be prescribed by the statute	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Partners of an LLP should be allowed to provide secured loans to the LLP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Statements	D	U	A
25. It is appropriate to have a body corporate as a partner in an LLP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. There should be a maximum limit to the number of partners of an LLP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. The disqualification criteria for company directors in the Companies Act should apply to the partners of an LLP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. A Partner of an LLP may be allowed to transfer his/her economic interest (for example, right to profit) only and not his/her partnership status	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. The transfer of a partner's economic interest in an LLP should require consent of the other partners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. A company (private and/or unlisted) should announce its conversion to LLP publicly so that the third parties are aware of the change in its status	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. The capital contributed to the LLP should not be less than the capital remaining in the company at the time of such conversion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. An unregistered partnership firm should be prevented from converting to an LLP			
33. Foreign LLPs should prepare Statement of Accounts, Statement of Assets and Liabilities and Statement of Annual Turnover for statutory audit compliance based on figures relating to India only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. A foreign LLP, which is incorporated outside India, may have a name similar to an LLP in India	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Provisions should be there relating to conversion of an LLP to a partnership firm or a company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. LLP should be a general purpose business entity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. LLP is different from Limited Partnership	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. Introduction of Alternate Minimum Tax (AMT) will reduce the incentive of private limited companies and unlisted companies to convert to LLPs in India	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Lapse of Minimum Alternate Tax Credit (MAT Credit) of companies converting to LLPs will discourage them to convert to LLPs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. There should be provisions providing for tax neutrality to amalgamation or demerger of LLPs as in the case of companies and its shareholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. Tax neutrality for conversion of partnership firms to LLPs will encourage the partnership firms to convert to LLPs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. An enterprise will be attracted to form LLPs because it is not subjected to Dividend Distribution Tax (DDT) and surcharge like companies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. It is justified to impose the provisions relating to AMT only on Indian LLPs (registered and incorporated under the LLP Act, 2008) and not on foreign LLPs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. Foreign LLPs should get the benefit of tax treaties of India with various countries to avoid the incidence of double taxation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Statements	D	U	A
45. Foreign LLPs, if denied the tax treaty benefits, should be treated as non-residents for paying tax in India	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. A foreign LLP should be treated as a partnership firm or a body corporate depending upon the nature of the LLP in the country of its incorporation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. There should be the 'pass through taxation' system for LLPs in India like in other countries where income is not taxable in the hands of an LLP but taxed in the hands of the partners to the extent of profits distributed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. LLPs may be given the option of Presumptive Taxation as is given to the partnership firms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. Shareholders of companies should be allowed the benefit of tax neutrality in case of substitution of their shares with the balance in their respective capital accounts in an LLP upon conversion of a company into an LLP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 3: Below are few questions given. Please choose the alternative from multiple choices given below.

50. According to you, which should have been the appropriate time for the enactment of the LLP Act in India?

- Before 1990       From 1990-1999       From 2000-2010       After 2010

51. Assuming some form of clawback is appropriate, what form of transfer of assets from an LLP to a partner should trigger clawback?

- Share of profits only       Interest on capital, salary, share of profit       Interest on loan only  
 Interest on capital, salary, share of profit, interest on loan       Repayment of loan (principal)  
 repayment of loan (principal), interest on loan       Withdrawal of permanent capital  
 All of the above

52. If LLPs are required to maintain a specified minimum amount of liability insurance, how should the amount be determined?

- Number of partners of an LLP       Total capital of LLP       Total assets of LLP  
 Average turnover of a specified period

53. What form of financial responsibility test should an LLP give as a quid pro quo of limited liability?

- Minimum capitalisation requirement       Personal bonding requirement  
 Liability insurance requirement





54. What should be the nature of protection for an innocent partner of an LLP?

- Tortious liability for malpractice claims against other fellow partners (partial shield)
- All tort and contract claims, no matter whether those liabilities are direct or indirect (full shield)

55. According to you which sector will attract LLP the most in India?

- Persons providing services of any kind
- Enterprises in new knowledge and technology based fields where corporate form is not suitable
- For professionals like CA/ CMA/ CS/ Advocate, etc.
- Venture capital funds where risk capital combines with knowledge and expertise
- Professionals and enterprises engaged in any scientific, technical or artistic discipline for research, product provision of services
- SMEs       Producer companies in handloom, handicraft sector, etc.

# Management of Non-Performing Assets (NPAs)

Subhas Nathuramka

## Abstract

*Non-Performing Asset (NPA) is a financial asset of banks/ FIs which stops to earn or perform. It refers to loans granted that are in jeopardy of default. Management of NPAs has caught the attention because of NPAs reaching at alarming levels particularly in the case of public sector banks. The general downturn in economy is held responsible for rising NPAs. RBI has additionally identified delays in statutory approvals for projects, aggressive lending practices during upturn, laxity in credit risk appraisal and loan monitoring, acceptance of projects' inflated cost and wilful default, loan frauds and corruption as the reasons for high level of NPAs, however, there are structural issues in Indian economy like insufficient promoters' contribution/ equity, intervention by Government in pricing of certain commodities/products, insufficient long term funds with banks resulting into asset liability mismatch, dearth of specialists for credit risk appraisal and loan monitoring and target oriented approach leading to financing to weak projects which need to be addressed to get long term solution to the problem of NPAs.*

## Key Words

*Non-performing Asset (NPA), Public Sector Banks, NPA Management, Profitability, Economic Downturn*

## Introduction

The aim of the paper is to go into the real issues behind creation of NPAs with possible long term solutions rather than narrating the guidelines on income recognition and asset

classification. The major source of data is official website of Reserve Bank of India.

Extending credit for economic activities is the primary task of banking. Lending is encouraged as it has the effect of funds being channelized for productive purposes, which results into economic growth. However, lending also carries credit risk, which arises from the non-recovery of loans. Though complete elimination of such losses may not be possible, banks have to make efforts to keep the losses at a tolerable level. This is connected with management of NPAs.

**Non-Performing Asset (NPA)** in common language is a financial asset which stops to earn or perform. It is a classification used by banks and financial institutions that refer to loans that are in jeopardy of default. NPAs in a way reflect the performance of banks. A high level of NPAs suggests higher probability of credit defaults that affect the profitability and net-worth of banks and also erodes the value of the asset. The growth of NPAs involves the necessity of provisions, which reduces the overall profits and shareholders' value.

The problem of NPAs not only affects the banks but also the whole economy. It is therefore believed that high level of NPAs in Indian banks is a reflection of the state of health of the industry and trade.

Recently the issue of NPA management has caught the attention of the entire nation because of NPAs reaching at alarming levels particularly in the case of public sector banks (PSBs). The gross non-performing assets (NPAs) of PSBs rose from Rs. 2.67 lakh crore in March 2015 to Rs. 3.61 lakh crore in December 2015. The magnitude of the problem can be gauged from the data contained in Table 1-

**Table 1: NPAs of Public Sector Banks and All Banks**

	All Banks				Public Sector Banks			
	Mar13	Mar14	Mar15	Sept15	Mar13	Mar14	Mar15	Sept15
Gross NPA %	3.42	4.1	4.6	5.1	3.8	4.7	5.4	6.2
Net NPA %	1.7	2.2	2.5	2.8	2.0	2.7	3.2	3.6
Restructured Assets %	5.8	5.9	6.4	6.2	7.2	7.2	8.1	7.9
Gross+Restructured Assets %	9.2	10.0	11.1	11.3	11.0	11.9	13.5	14.0
Gross+Restructured Assets+written off assets %	11.5	12.1	13.6	14.1	13.4	14.1	16.1	17.0

All Banks	Gross +Restructured Assets+written off assets %			
	Mar13	Mar14	Mar15	Sept15
Agriculture	8.2	7.4	7.5	7.9
Industry (Micro)	10.2	10.0	10.5	12.3
Industry (Small)	13.2	13.3	14.8	16.8
Industry (Medium)	20.2	23.6	27.0	31.5
Industry (Large)	16.3	19.0	23.0	23.7

**Source:** RBI website

While the general downturn in economy is held responsible for rising NPAs there are many other reasons which are considered to be equally responsible for the present state of affairs like major decline in prices of commodities like steel, declining exports due to recession in global economy particularly European economy, problem of coal linkages to power plants, sub-standard quality of appraisal of projects coupled with undesirable intervention by politicians and bureaucrats, flaws in lead bank system etc.

In line with the best International practices, the RBI has introduced "Prudential Norms for income recognition, asset classification and provisioning for the advances portfolio of the banks so as to move towards greater consistency and transparency in the published accounts, based on the recommendations made by Narsimham Committee. Every

bank is required to formulate its own policy for recognition of income and assets classification which should be objective and based on record of recovery and should not give any room to any subjective considerations.

A non-performing asset (NPA) is a loan or an advance where;

1. Interest and/or instalment of principal remain overdue for a period of more than 90 days in respect of a term loan,
2. The account remains 'out of order' for a period of more than 90 days, in respect of an overdraft/cash Credit ,
3. The bill remains overdue for a period of more than 90 days in the case of bills purchased and discounted,

4. Interest and/or instalment of principal remains overdue for two *harvest seasons* but for a period not exceeding two half years in the case of an advance granted for agricultural purposes,
5. Non-submission of stock statements for three continuous quarters in the case of Cash credit facility.
6. No active transactions in the account (Cash Credit/over Draft/EPC/PCFC) for more than 90 days.

Banks are required to classify non-performing assets further into the following three categories based on the period for which the asset has remained non-performing and the realisability of the dues:

1. Sub-standard asset- a substandard asset is one which has been classified as NPA for a period not exceeding 12 months.
2. Doubtful Asset- a doubtful asset is one which has remained NPA for a period exceeding 12 months.
3. Loss assets: where loss has been identified by the bank, internal or external auditor or central bank inspectors.

But the amount has not been written off, wholly or partly.

### Effect of NPAs on Profitability

Non-performing assets impact the bank's profitability in several ways as indicated below:

- (i) They reduce the net interest income as the interest is not charged to these Accounts;
- (ii) All non-performing assets need to be prudentially provided for. This will lead to reduced profitability;
- (iii) Servicing NPAs becomes costly in terms of time, money and manpower. They reduce employee productivity and overall profitability;
- (iv) Non-performing assets affect recycling of bank credit as lendable resources shrink and adversely impact profitability;
- (v) Non-performing assets affect the liquidity position of the bank, create assets and liability mismatch and force the bank to raise resources at higher cost.

During 2012-14 scheduled commercial banks in India as a result of higher provisioning for NPAs had a decline in return on equity which would be seen as under-

**Table 2: Return on Equity of Scheduled Commercial Banks : Bank Group-wise**

(Per Cent)

S.No.	Bank group/Year		Return on Equity	
	1	2	3	4
		<b>2012-13</b>	<b>2013-14</b>	<b>2014-15</b>
1	Public Sector Banks	13.24	8.48	7.76
2	Private Sector Banks	16.46	16.22	15.74
3	Foreign Banks	11.53	9.03	10.25
	All SCBs	13.84	10.69	10.42



**Exhibit 1: Reasons for present situation of NPAs identified by RBI**

<ol style="list-style-type: none"><li>1. Domestic and global economic slowdown</li><li>2. Delays in statutory approvals for projects</li><li>3. Aggressive lending practices during upturn</li><li>4. Laxity in credit risk appraisal and loan monitoring</li><li>5. Acceptance of projects' inflated cost</li><li>6. Wilful default, loan frauds and corruption</li></ol>
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**Exhibit 2: Reasons behind NPAs: Myths vs. Realities**

<b>Myths</b>	<b>Realities</b>
It is the result of domestic and global economic slowdown	In India NPAs are concentrated in certain specific areas like power, iron and steel, mining, infrastructure, telecom, aviation, textiles, real estate etc. which are greatly influenced by government policy actions. Sectors like Pharma, IT, FMCG, Cement, Auto etc. have survived the economic slowdown.
PSU banks are affected by priority sector lending	Data show that NPAs in % terms in non-priority sector are double the NPAs in priority sector.
There has been laxity in credit risk appraisal and loan monitoring	Because of ownership and management structure of public sector banks (PSBs) there have been problems in taking appropriate decisions on sanction and disbursement of loans. PSBs have at times even been considered to be extended arms of the Government which hampered them in taking key lending decisions in a professional manner.
There has been acceptance of projects' inflated cost	Due to inherent and deep rooted problem of insufficient promoters' contribution projects' inflated cost became an accepted practice on the basis of certificates by outside consultants.

**Bottom line: Structural issues to be addressed for achieving long term solution**

- ✓ Arrangement of sufficient equity contribution for achieving a balanced capital structure should be addressed by developing multiple sources of raising equity. Past experience shows that projects with moderate debt levels have had higher success ratio which in turn helped the lenders in containing NPAs.
- ✓ Intervention by Government in pricing of certain commodities/products should be minimised. Regime of subsidy in sectors like power, oil and gas, fertilizer, transportation etc. should be thoroughly reviewed and be gradually phased out.
- ✓ The problem of insufficient long term funds with banks resulting into Asset liability mismatch should be addressed by inducting more equity and strengthening bonds market.
- ✓ The issue of dearth of specialists for credit risk appraisal and loan monitoring should be addressed by developing in-house industry specialists. Outside industry specialists should also be recognised and empanelled. Technical and Financial experts should collaborate while preparing techno economic viability study reports as also implementation status reports.
- ✓ Lenders should guard against the target oriented approach towards lending. Such an approach has led to financing to weak projects in the past which turned into NPAs.
- ✓ Innovative instruments like structured debt finance, convertible debenture etc. should be encouraged over plain vanilla debt instruments

**Situation of all debt and no equity**

Promoters' Contribution is the amount raised by promoter group by way of equity/quasi equity/unsecured loans as part of means of finance for the project. It is critical from the point of view of other stakeholders like lending institutions who feel comfortable and confident when the promoters have invested in sufficient measure. Banks and financial institutions generally stipulate minimum promoters' contribution to ensure their continued attachment with the project. Although it varies on case to case basis as per standard norm one third of the cost of project should be financed by the promoters through their equity contribution. This would result into a standard debt equity ratio of 2:1. The proportion of debt can be more depending on the nature of project e.g. infrastructure project.

There have been serious issues in the matter of promoters' contribution which have enhanced the problem of NPAs. As per standard norms promoters' contribution should be corroborated by income tax returns, personal balance sheets of promoters. At the same time promoters' contribution should not come out of borrowed funds. However in practice banks while evaluating the credit proposals do not go into the details of the sources of finance for promoters' contribution. There have been instances where the main promoter having a net worth of only a few lac rupees proposes a promoters' contribution of crores of rupees. In large groups promoters' contribution is raised through investment companies. Due to presence of inter-company investments, circular entries, step down entities it becomes very difficult to ascertain whether promoters' contribution has actually been



raised. Raising of promoters' contribution is verified during implementation of projects by way of Certificate by Chartered Accountant. The certificate by Chartered Accountant also contains expenditure incurred under various heads. However it can be manipulated by over-invoicing, over-booking of expenditure, circular entries etc. In other words promoters' contribution is not raised to the extent stipulated in the means of finance. At the same time physical progress of the project lags behind the expenditure incurred. The practice ultimately results into lower promoters' contribution with higher debt equity ratio in reality. The project is loaded with higher burden of interest and its viability becomes questionable particularly at the time of economic downturn. It is therefore imperative that the sources of finance for promoters' contribution are analysed in detail to ensure that the contribution is actually raised to the full extent as stipulated in the means of finance.

At the same time there is a need for developing multiple sources of equity like private equity, equity raised through public issues, venture capital, angel investment, equity through institutional investment, mutual funds etc. to match the debt financing. Sufficient level of equity would go a long way in mitigating the risk being taken by lenders on account of debt financing.

### Financing of losses

Another important aspect related with NPAs is that financing of losses is normally not allowed through fresh loans by banks. So much so that whenever losses are sustained by borrowers they are asked to cover those losses through additional promoters' contribution. This is necessary to keep the working capital intact for smooth functioning of the business besides maintaining the requisite asset cover for the credit facility. In actual practice in a number of cases promoters are unable to raise additional contribution to fund losses which adversely affects the operations and profitability of the project. So much so that the borrowers resort to malpractices like hiding losses through fake receivables, non-existent inventory to maintain the existing credit facilities. The situation again underlines the importance of having multiple sources of equity to maintain a healthy debt equity ratio.

Past experience of term lending institutions: Whether plain debt finance for industrial projects is sustainable in general

To have a realistic view on the problem of NPAs one has to briefly go into the past history of term lending institutions in India.

The Industrial Development Bank of India (IDBI) was at one point of time principal financial institution responsible for financing, promoting and developing industry in India. Even IDBI under the burden of NPAs had to reshape its role from a development finance institution to a commercial institution. In 2004 the Government of India had to give a bailout package of Rs.9000 Cr. to IDBI where NPAs were allowed to be transferred to a Stressed Assets Stabilisation Fund (SASF) to clean the Balance Sheet.

The Industrial Finance Corporation of India (IFCI) another development institution was established in 1948. By 1990s it was felt that IFCI should directly access the capital markets for its needs for funds and it was converted into a company. One of main reasons of changing the structure of IFCI was ever increasing NPAs on account of industrial loans.

ICICI was formed in 1955 with the principal objective was to create a development financial institution for providing medium-term and long-term project financing to Indian businesses. In the 1990s, ICICI under the weight of NPAs had to transform its business from a development financial institution offering only project finance to a diversified financial services group offering a wide variety of products and services.

By late 1990s a large number of State Industrial Development Corporations (SIDCs), state financial corporations got into trouble as their NPAs increased to unsustainable levels as their loan portfolio was mainly concentrated in small and medium scale industries.

There are lessons to be learnt out of above experiences. First, term lending to industry is fraught with higher risk because of inherent weaknesses in the economy as also yet to be fully developed infrastructure. Liberalisation of cheap imports has thrown higher challenges to the domestic industry. Second, term lending product needs to be accompanied by other financial products like working capital, non-fund based facilities as also equity schemes. In the changed scenario more and more innovative/hybrid financial instruments like fully or partly convertible debentures, structured financial products etc. need to be used to suit the requirements of

different projects. Third the term lending institutions have to retain specialised personnel to look after identification, conceptualisation, appraisal, implementation and monitoring of projects.

### **Bank financing facing asset liability mismatch**

One of the problems related with issue of NPA is asset liability mismatch which the banks face. While the tenure of deposits generally ranges from one year to five years the life of some of the projects could be as high as thirty years. The high initial capital expenditure and long life of infrastructure assets require long term debt financing. Most of the debt financing for infrastructure projects in India has come from banks. However, banks are constrained in providing long term financing because of an asset liability mismatch arising from their relatively short maturity deposits. Because of this banks are not able to provide adequately long duration of repayment schedules. There may be further constraints on such long term financing once the Basel III bank liquidity norms such as the Liquidity Coverage Ratio and Net Stable Funding Ratio are implemented.

Recently RBI has introduced 5:25 flexible structuring scheme for banks which have made heavy lending to core industries and infrastructure sector like power, road, port and core industries like coal, cement, steel, natural gas, etc. As per scheme, the lenders are allowed to fix longer amortization period for loans to projects in the infrastructure and core industries sector, for say 25 years, based on the economic life or concession period of the project, with periodic refinancing, say every 5 years.

### **Subsidy regime disturbing revenue models of certain sectors of business**

The Indian government as also state governments have, since independence, subsidised many industries and products, from fuel to food. There have been subsidies in the sectors of food, fertilizer and petroleum. At the same time there are subsidies in the field of water, power and transportation. 10% of the budget of the central government goes to subsidies amounting to Rs.2.27 Lac Crore for FY 2015-16. In addition to above state governments and central and state public sectors enterprises contribute towards subsidies. The subsidies have resulted into distortions in the respective

sectors like oil and gas, power, fertilizer, transportation etc. and private investors have become hesitant to put money into such sectors. General subsidies not targeted towards particular sections have distorted the revenue models of the companies operating in these sectors. It is therefore necessary that subsidies not targeted specifically to weaker sections of society are phased out.

The financial position of state power utilities, particularly those engaged in distribution, has deteriorated considerably over the years, mainly on account of inadequate tariffs and high transmission and distribution losses partly because of theft of electricity. With the state governments owning most of the power discoms, deterioration in the financial health of these entities has affected the fiscal position of the states badly. There is a debt burden of Rs.4.3 Lac Crore on nine state power distribution companies which has arisen due to subsidised tariffs. The debt has adversely affected the loan profile of PSU banks.

As per general practice tariff revisions have to be effected annually to ensure that discoms recover at least the cost of service. However, states have been reluctant to allow tariffs to be revised. In the four year period ended 2009, only 10 states had revised tariffs. Haryana and Tamil Nadu did not revise tariffs for nine years between 2001 and 2010. Rajasthan did not revise the tariff for five years between 2005 and 2010.

As a result, during 2009-10 discoms realised Rs3.33 per unit against the cost of supply of Rs4.78 per unit losing Rs1.50 per unit supplied. Since the finances of state governments are in bad shape they are not in a position to timely reimburse the subsidies to discoms.

Even in a sector like sugar the fate of the industry is dependent on the regulated price of sugarcane. On a number of occasions price paid for sugarcane remains on a higher side while the price of sugar determined by market forces comes down affecting the business model of the project.

### **Dearth of in-house specialists for credit risk appraisal and project monitoring:**

In the times of development banking institutions like IDBI had developed industry specialists to deal with credit risk appraisals of a particular industry say textiles. However during





the last decades when commercial banks have dominated the project finance in addition to working capital finance due to dearth of in-house industry specialists they were hampered in the matters of credit risk appraisal and project monitoring. As a result banks had to depend upon the reports and certificates issued by outside professionals like chartered engineers, and chartered accountants.

CA certificates were extensively relied upon as basis for release of credit facilities to borrowers. However there may be following situations where the expenditure has actually been incurred and certified by C.A. it does not provide the lending bank the right input or guidance required to take a fair view in the matter of release of credit facility -

- i. Although the expenditure has been incurred by the company it does not relate to the specific project under consideration;
- ii. The expenditure incurred on purchase of items, equipment is not as per the approved plan;
- iii. The expenditure has been incurred on a head other than the head envisaged in the approved plan e.g. more civil works, higher preoperative expenses, higher soft costs, less expenditure on equipment and machinery.

There is an apparent need for an integration of inputs from technical, financial and other professionals in the matters of appraisal, implementation and monitoring of projects financed by banks and Financial Institutions.

**Exhibit3: Long term solutions to the problem of NPAs**

Augmenting various sources of equity to achieve a balanced debt equity structure
Transparent mechanism of showing promoters' contribution
Achieving balanced debt equity structure for a project with bias towards a moderate debt structure
Strengthening project monitoring
Identification of new viable projects in line with changing trends in economy
In a phased manner, all credit exposures will be brought under credit rating framework

**Identification of new viable projects**

Identification of projects is another key area which needs to be strengthened. In the present system a number of projects are taken up at the instance of top business leaders based on their perceptions about the future shape of economy. However keeping in view of the growing risk factors in business as a result of opening up of economies with WTO regime in place there is a great need that specialists, specialised institutions are developed to undertake the task of identification of viable projects before those are taken up for credit appraisal by the lenders.

**Strengthening monitoring of projects**

Governor, Reserve Bank of India has rightly emphasized the importance of proper monitoring of projects financed. It is true that deficiencies in evaluation of a project can be somewhat covered by post-lending monitoring, including careful documentation and perfection of collateral, as well as ensuring guarantees by promoters.

Based on the expansion plans, the bank should induct and develop through training and work experience, adequate number of credit officers for assessing, approving and managing credit risks. Such officers should be gradually developed as sector experts.

Banks should develop an efficient MIS mechanism for early detection of signs of distress at individual account level as well as at segment level (asset class, industry, geographic, size, etc.). Such early warning signals should be used for putting in place an effective preventive asset quality management framework.

The banks' IT and MIS system should be able to generate reliable and quality information with regard to their asset quality for effective decision making. Banks should also have system generated segment-wise information on non-performing assets and restructured assets.

**Concluding Observations**

It is generally believed that NPAs arise due to downturn in economy. Expert theoreticians also point towards better monitoring of projects to ensure that funds are utilised for

the purpose they are sanctioned. Finance experts tend to believe that problem of NPA is due to mismanagement of funds and relates it to efficiency in financial management. The above reasons may be true in some individual cases. However in the context of India time and again there have been evidences where it has been found that debt financing to industrial units in the present structure has not been a viable proposition for the banks and financial institutions. The problem of NPAs keeps on surfacing time and again. Many of the state financial corporations, state industrial development corporations in the past have either shut shops or have scaled down their operations substantially. Even apex industrial financial institution like IDBI had to be bailed out by the government. IFCI had to suffer because of high level of bad loans. ICICI being a major industrial finance provider had to resort to retail banking for survival.

While there is no denying the fact that industrial finance by way of debt is critical for a growing economy like India its viability in general has to be reviewed in the light of the past experience and new ground realities. It is interesting to note that sectors like information technology, Pharma and Fast moving consumer goods (FMCG) which are performing well for India are majorly financed by internal accruals and equity finance. On the other hand banks have heavily financed sectors like metal, power, ship building, textiles, telecommunication, mining and other areas of infrastructure. Banks and financial institutions need avenues to lend funds for their survival and growth. The areas would therefore continue to attract debt finance in the years to come. RBI governor has rightly pointed out that banks in India cannot refrain from lending to sectors like infrastructure as this is the area where funds are needed most. To find long term solutions to problem of NPAs the government will have to vigorously pursue the reforms like cutting down subsidies, determination of price through fair play of demand and supply, professional management etc. It would not be correct to consider the problem of NPAs as relating to the banking industry alone. It would also not be correct to relate it solely with the economic downturn. In fact the problem of NPAs should not be seen in isolation but as a problem which can be dealt with only by undertaking suitable structural reforms in various sectors of the economy. The Government while formulating sectoral policies has to address the basic issue of viability of business model for that particular sector so that investment flows through that sector without any hindrances. Another major solution could be to achieve

a balanced debt equity structure by promoting a number of alternatives avenues of equity. Solution could also be provided through innovative financial products depending upon the specific needs of the projects. Evaluation of a project from the angle of first few years of operations is critical as once the project is debt trapped due to delay in implementation, initial teething troubles or cost overrun it becomes quite difficult to for the project to come out of it. In the ultimate analysis the project has to be financially sustainable. Even the socially relevant projects like hospitals and infrastructure projects need to generate enough cash flows so as to enable them to service their dues towards banks. Only then the management of NPAs for lenders would succeed.

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# Relevance of Pecking Order Theory in Financing Small Firms: Empirical Evidence in West Bengal

Indrani Dasgupta

## Abstract

*Small and Medium Enterprises (SMEs) are valuable organs of economic growth and development, in any nation, despite the sector being exposed to intensified competition since liberalization. Small industry has been confronted with an increasingly competitive environment due to: liberalization of the investment regime, favouring foreign direct investment (FDI); formation of the World Trade Organization (WTO) in 1995, forcing its member-countries (including India) to drastically scale down quantitative and non-quantitative restrictions on imports, and domestic economic reforms. The cumulative impact of all these developments is a remarkable transformation of the economic environment in which small industry operates, implying that the sector has no option but to 'compete or perish'. Firms with genuine growth potential can expand and compete if an efficient and effective provision of finance to them is assured (Binks and Ennew, 1995). Own funds and finance from informal sources, which have been the major sources of finance for the SMEs, often fail to meet up this requirement, whereas procurement of external finance (debt) becomes a challenge for the SMEs, given that information asymmetry is one of their inherent characteristics. Thus finance tends to be one of the major obstacles in the way of progress for the small enterprises especially in the developing countries.*

*Academic literature and observations of business practices indicate that the typical financing pattern*

*of the small business follows a hierarchy with sources requiring information disclosure placed lower in the order of preference. The entrepreneurs in order to avoid the adversities of information asymmetry prefer internal financing as it requires minimum or no information about the firm or the entrepreneur, followed by the short term debt (being less affected by information asymmetry) and finally long term debt (being most effected by information asymmetry). A typical Pecking Order Theory of capital structure explains the financing pattern of small businesses.*

*This paper endeavours an analysis of the relevance of different financing theories for explaining capital structure choice in the Small Enterprises. An empirical analysis of 100 non – financial Small Enterprises of West Bengal has been undertaken. Our results show that the financing decision in these enterprises could be explained by the pecking order theory of capital structure.*

## Key Words

*Capital Structure, Finance Gap, Information Asymmetry, Information Index, Pecking Order Theory, SME*

## Introduction

Small and Medium Enterprises (SMEs) are valuable organs

of economic growth and development in any nation, despite the sector being exposed to intensified competition since liberalisation. Small industry has been confronted with an increasingly competitive environment due to: liberalisation of the investment regime, favouring foreign direct investment (FDI); formation of the World Trade Organisation (WTO) in 1995, forcing its member-countries (including India) to drastically scale down quantitative and non-quantitative restrictions on imports, and domestic economic reforms. The cumulative impact of all these developments is a remarkable transformation of the economic environment in which small industry operates, implying that the sector has no option but to 'compete or perish'. Firms with genuine growth potential can expand<sup>1</sup> and compete if an efficient and effective provision of finance to them is assured (Binks and Ennew, 1995). Own funds and finance from informal sources, which have been the major sources of finance for the SMEs, often fail to meet up this requirement, whereas procurement of external finance (debt) becomes a challenge for the SMEs, given that information asymmetry is one of their inherent characteristics. Thus finance tends to be one of the major obstacles in the way of progress for the small enterprises especially in the developing countries.

Academic literature and observations of business practices indicate that the typical financing pattern of the small business follows a hierarchy with sources requiring information disclosure placed lower in the order of preference. The entrepreneurs in order to avoid the adversities of information asymmetry prefer internal financing as it requires minimum or no information about the firm or the entrepreneur, followed by the short term debt (being less affected by information asymmetry) and finally long term debt (being most effected by information asymmetry).

In the next section (Section Two) of this paper we discuss how far the design of the capital structure influences the success of a company. This answers the basic question of 'why study capital structure?' This section calls for a discussion on the prevalent theories of capital structure; both traditional and modern. The theoretical understandings of capital structure theories explain the various determinants of capital structure. The theories of capital structure did not develop with the small enterprise in mind (Ang, 1991) and hence they may not be directly applicable to the SME sector. Section Three therefore reviews the typical nature of small firms and

focus on the appropriate capital structure theory for these entities. The appropriateness of the pecking order theory in suitably explaining the financing pattern of small firms is empirically tested taking sample from two districts of West Bengal in Section Four. Section Five of the paper draws out the conclusion and pinpoints the limitation of the study.

### **Theoretical Background of Capital Structure**

Capital structure refers to the way an enterprise finances its assets through some combination of own funds, external equity, debt, or hybrid securities. It has a direct influence on the company's profitability and stability. While a high proportion of debt may make a company very profitable as it is growing, it also increases the probability of bankruptcy and ruin especially if that growth slows down or temporarily becomes negative. The management of a firm sets its capital structure in such a way so that the firm's value is maximized. However, firms choose different combinations of debt and equity in their effort to attain an optimal capital structure.

In this regard the most important financial decision facing firms is the choice of debt and equity capital (Glen and Pinto, 1994). Capital structure, which is defined as total debt to total assets at book value, influences both the profitability and riskiness of the firm. In other words it is the financial leverage that is of great concern for a business organization.

A number of theories have attempted to explain the variation in debt ratios across firms. Theories suggest that firms select capital structure depending on attributes that determine the various costs and benefits associated with debt (borrowed capital) and equity financing. Borrowed capital as the name indicates involves a fixed obligation that must be met regardless of the level of sales or profits or any other circumstances regarding the operations of the company. Default in meeting debt service obligations exposes the company to the danger of bankruptcy and liquidation of its assets. The use of equity or owner's capital poses no such risks. Thus, a higher proportion of debt in a firm's capital structure will lead to higher levels of risk of bankruptcy for the company.

On the other hand, because of the tax deductibility of interest payments and the relative safety enjoyed by the providers of debt capital, debt is a much cheaper form of capital for a



firm than equity. Thus, the use of a high proportion of debt capital can magnify the profitability of a company when its sales are rising and when its assets can earn a higher rate of return than the cost of its debt. Therefore the use of debt in the capital structure is a matter of concern and forms an important part of financial decision making of all types of business.

What therefore appears to be of great importance is the combination of debt and equity (financial leverage) in the financial decision making of a business and till date various theories have developed in explaining capital structure. The theories so far developed suggest that firms determine a target debt ratio, which is based on various tradeoffs between the costs and benefits of debt versus equity.

The early works on capital structure decision made numerous assumptions in order to simplify the problem and assumed that both the cost of debt and the cost of equity were independent of capital structure and that the relevant figure for consideration was the net income of the firm. Under these assumptions, the average cost of capital decreased with the use of leverage and the value of the firm (the value of the debt and equity combined) increased while the value of the equity remained constant.

The basic weakness with these approaches is their lack of rigour, and their making direct assumptions about the nature of the costs of debt/equity, without a theoretical basis for these assumptions. Hence not much can be made out about the determinants of capital structure from the traditional view.

Academic interest in the capital structure of a firm increased greatly as a result of the debate started by Modigliani and Miller (1963). They argued that in a world of perfect capital markets and no taxes, a firm's financial structure does not influence its cost of capital, and, consequently, there is no optimal capital. Modigliani and Miller (1958) were the first to raise the issue of irrelevance of capital structure to the value of the firm.

Subsequent works of different financial theorists like Robichek and Myers (1965), Jensen and Meckling (1976), and Myers (1977) have driven towards relaxing the assumptions of the Modigliani and Miller (M-M) theory to provide a coherent

explanation for what influences the choice of debt and equity. According to Myers (2001), "there is no universal theory of the debt-equity choice and no reason to expect one". These theories can be divided into two groups – either they predict the existence of the optimal debt-equity ratio for each firm (the static trade-off models) or they declare that there is no well-defined target capital structure (the pecking order hypothesis).

Over the years three major theories of capital structure emerged which diverge from the assumption of a perfect capital market under which the 'irrelevance model' (M-M theory) was proposed. The first is the *static trade-off theory* (Baxter, 1967 and Altman 1984, 2002) which assumes that firms trade off the benefits and costs of debt and equity financing and find an 'optimal' capital structure after accounting for market imperfections such as taxes, bankruptcy costs and agency costs. The second is the *pecking order theory* (Myers, 1984; Myers and Majluf, 1984) that argues that firms follow a financing hierarchy to minimize the problem of information asymmetry between the firm's managers-insiders and the outsider shareholders. The third is the *agency cost theory* advanced by Jensen and Meckling (1976) which derives from the conflict between corporate managers and bondholders. Lately in 2002, Baker and Wurgler suggested a new theory of capital structure: the *market timing theory*. This theory states that the current capital structure is the cumulative outcome of past attempts to time the equity market. Market timing implies that firms issue new shares when they perceive they are overvalued and that firms repurchase own shares when they consider these to be undervalued.

The basic premise of these theories tries to answer the question: 'what are the factors that affect capital structure decisions?' In the process of the enquiry, several dimensions of imperfections and changes in the economy have been identified, within the industry and of the specific firm. These imperfections have been brought forward as determinants of capital structure, which refer to the costs and benefits associated with financing.

Certain corporate finance theories suggest that firms choose optimal capital structures by trading off various tax and incentive benefits of debt financing against financial distress costs. While other studies indicate that a firm's

capital structure decisions are affected by several firm related characteristics such as future growth options, earnings volatility, profitability and control (Titman and Wessels, 1988; Glen and Pinto, 1994) and also the perspective of asymmetric information and agency cost (Jensen and Meckling, 1976; Rajan and Zingales, 1995). A number of factors peculiar to the firm and its industry determines a company's debt capacity (capital structure) such as the stability and minimum level of sales, the influence of changes in sales on available cash flows or its operating leverage, its overall size and the degree to which its operations are diversified, the tax environment it faces, and the stability of its economic and political environment. Besides, corporate ownership<sup>2</sup>, stock market activity<sup>3</sup> and other macro economic factors<sup>4</sup> (Chakraborty, 2010) also contribute in the determination of the financing pattern of companies.

### Capital Structure Theory of Small Firms

However it is important to note, that the theories on capital structure have been developed for firms that would be classified as large (Ang, 1991). As capital structures of small and medium enterprises (SMEs) are generally different from those of large firms<sup>5</sup> (Welsh and White 1981; Uzzi and Gillespie 1999) all the underlying hypotheses of the theories and thus the derived determinants of capital structure does not seem appropriate in explaining small firm capital structure. Small firms, though not concerned with the problems and opportunities associated with publicly traded firms, have different complexities, such as shorter expected life, presence of estate tax, intergenerational transfer problems and prevalence of implicit contracts that influence its capital structure.

Furthermore, all research done on capital structure focused on quantitative analyses in explaining how capital structure is affected by a number of financial factors. It is equally important to analyse the qualitative factors such as the effect of management preferences, perception, beliefs and attitude towards external finance on firm's capital structure in order to understand capital structure practices. This is even more important in small business research where the owner/manager plays a central role in the firm and there is no separation of ownership and control. The belated realization of the importance of the small firms in the economy of a nation led to a number of empirical researches<sup>6</sup> investigating into the area of finance.

MacMillan Report (1931) introduced the term 'finance gap', described as a situation where a firm grown to a size, after having made maximum use of short-term finance is obstructed from approaching the capital market for longer term finance. This is a situation typical of the small enterprises.

Theoretical lack of concern about firm size and stage of development in the M-M proposition did not much explain the financial structure of firms both big and small. With the increasing importance of the small firm sector and the persistent divergence between available theory and practices of small firms more sophisticated explanations have emerged to the financial decision of small firms. There has been a growing emphasis on the pecking order theory of raising finance, to explain the special nature of small firms and the implications for financial structure.

### Pecking Order Theory

With the assumption that firms (or the owners of the firm) have information which the investors do not have, Myers and Majluf (1984) provided a theoretical foundation to the proposition of Donaldson (1961) of a financing hierarchy, where firms prefer internal finance, and if external finance is required firms issue the safest security first. According to this theory, as the investors are aware of the fact that the insiders have more information about the firm's prospects they rationally demand a higher risk premium, thus making external finance costlier than the internal sources. Higher the associated risk, costlier will be the source of finance. This gives rise to a hierarchy in the choice of finance with sources less sensitive to information at the top (*theory of pecking order*). Unlike the static trade off model the theory of pecking order does not take an optimal capital structure as a starting point, but instead asserts the empirical fact that firms show a distinct preference for using internal finance (as retained earnings or excess liquid assets), being less sensitive to information asymmetry, over external finance. Therefore the capital structure shall be so designed so as to mitigate inefficiencies in the firm's investment decisions that are caused by the information asymmetry between managers (insiders) and investors and creditors (outsiders) (Myers, 1984). Thus pecking order theory posits that information asymmetry is an important (or perhaps even the sole) determinant of firms' capital structure.





Smaller firms generally have higher levels of asymmetric information due to varying quality of their financial statements, absence of audited financial statements and inadequate alternative sources of formal information. The costs that information asymmetry creates are therefore more important for small firms than for large enterprises, making differences in costs between internal equity, debt, and external equity consequently greater. Therefore, the hierarchical approach in financing (pecking order theory) seems to have more relevance to small firms than to the large firms (Scherr, Sugrue, and Ward, 1993).

As small firms are incomparable to large corporations in terms of asset structure and access to public debt and equity markets there seem to be alternative rationale for the applicability of this theory. The SME literature provides a number of demand-side and supply-side reasons as to why firms prefer (a) internal sources of finance over external sources, and (b) debt over equity. Supply side constraints exist when the small firms cannot obtain the debt financing they require at market interest rates, resulting in undercapitalization. This is primarily due to the imbalance in information between the small firm owner and the financier.

Demand side explanations are based on the well-established fact that small firm owners are extremely reluctant to relinquish control of their business and therefore prefer to avoid the use of external equity in financing their projects to reduce the chances of control dilution. Small firms will therefore try to meet their financing needs from a pecking order of, first, their 'own' money (personal savings and retained earnings); second, short term borrowings; third, longer term debt; and, least preferred of all, from the introduction of new equity investors, which represents the maximum intrusion.

In a developing country like India and especially in the state of West Bengal where the majority of the small firms belong to the unorganized sector, accessibility to the capital market is almost absent and therefore the demand side explanation to the theory is not germane to this study. The reluctance of the financiers in financing small business (supply side) may be therefore a better explanation of the finance hierarchy in small firms and this is attributable to various factors, an important one being information asymmetry between the firm and the prospective investors. A supply side explanation (featured by information asymmetry among other factors)

to the pecking order of finance seems to be relevant in the case of small firms.

However, the theory, though applicable to the financing practices of non-publicly traded small firms, is subject to certain modifications and restrictions<sup>7</sup>. Literature (Holmes and Kent, 1991 and Ang, 1991) suggests a pecking order theory for the small firms with reinvestment of profits as the most preferred source followed by trade credit, use of personal credit card, long-term loans from existing owners and owner-managers (that is, quasi-equity) and their families and friends. The next best option for the informationally opaque small firms is the new equity capital from existing owners and owner-managers and other uninvolved parties (including new owners and owner-managers, venture capitalists, business angels etc.). It is only when all these sources are exhausted firms consider using external short term debt followed by long term debt. External equity is absent in most cases

### **Empirical Test of the Relevance of Pecking Order Theory**

Having discussed the peculiarity of small firms and the relevant capital structure theory, the paper delves to explore how far the pecking order theory of capital structure explains the financing pattern of small enterprises as suggested in literature. For this purpose a data set collected through a primary survey, using a structured questionnaire, from two districts of the state of West Bengal, India, over a five year period (2009-2010 to 2013-2014) has been empirically analysed.

This paper uses a combination of secondary literature and primary face-to-face interview experiences for justifying the research issue. Based on the secondary data (review of survey-based papers) on financial issues of SMEs, the survey questionnaire was constructed with special attention to specific aspects of the sample enterprises while trying to avoid biases induced by the questionnaire and, at the same time, maximizing the response rate. The questionnaire ultimately attempts to focus on the capital structure design of the firms and bring out the factors influencing the same.

To cater to the research objective the paper tries to investigate into two financing aspects of the sampled firms: i) the combination of debt and equity in the capital structure

of the firms and ii) the role of information in obtaining external finance by the firms.

The survey instrument canvassed on 100 small enterprises has been developed on the same line as that of the works of Francisco Sogorb (2002), Abor and Biekpe, (2005), and many others. At a general level this survey based study gathered demographic information about the enterprise and the entrepreneur and skeleton financial details about the business. This constitutes the first part of the questionnaire.

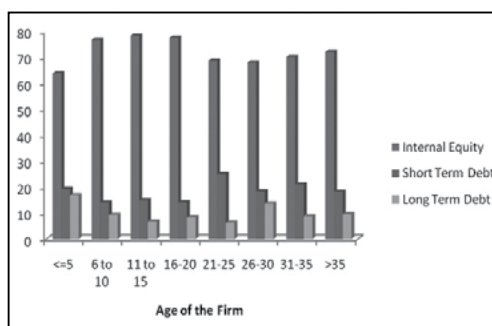
Survey results indicate that irrespective of the firm's age internal equity (owner's capital and reserve and surplus) seems to dominate the capital structure of the sample firms. It is evident from Table 1 and Figure 1 that short term debt is the preferred external source followed by long term debt. This result is in line with the financing order specified in the pecking order theory.

**Table 1: Capital Structure Design of the Small Enterprises**

Age (Years)	Internal Equity (Avg Per Cent)	Short Term Debt (Avg Per Cent)	Long Term Debt (Avg Per Cent)	Total
<=5	63.91	19.25	16.84	100
6 to 10	76.76	13.96	9.27	100
11 to 15	78.41	14.87	6.72	100
16-20	77.60	14.06	8.34	100
21-25	68.74	25.01	6.24	100
26-30	67.98	18.42	13.60	100
31-35	70.18	21.01	8.81	100
>35	72.17	18.21	9.62	100

Source: Survey Results, 2013-2014

**Figure 1: Financing Pattern of the Small Enterprises**



Source: Survey Results, 2013-2014





As a further test of the appropriateness of pecking order theory, the sampled firms are categorised into homogeneous groups (Table 2) with respect to their capital structure into 'predominantly equity' (with approximately 92 per cent internal equity in total capital), 'moderate debt' (with approximately 53 per cent debt in the total capital) and 'predominantly debt' (with approximately 64 per cent debt in the total capital) with the help of cluster analysis. This brings out an even better picture substantiating the proposition of pecking order theory. A majority of the sampled small firms (61 percent) uses about 92 percent internal equity, followed by short term debt and a nominal percentage of long term debt.

**Table 2: Cluster Analysis Based on Financing Pattern of the Sampled Firms**

Measures Of Leverage	Cluster		
	Predominantly Equity	Moderate Debt	Predominantly Debt
Proportion Of Short Term Debt To Total Capital	5.52	44.24	20.34
Proportion Of Long Term Debt To Total Capital	2.37	9.23	43.66
Proportion Of Internal Equity To Total Capital	92.10	46.53	36.00
Number Of Cases	61	25	14

So far the paper draws out the financing pattern of the sampled firms which is in conformity with the theory of pecking order. The relevance of information, which is the basis of the theory, is addressed in the following section.

**Information- The Basis of Pecking Order Theory**

The second part of the questionnaire captures the issue of information exchange from the perception of the respondents (expressed on a likert scale). Questions are asked about the necessity of information disclosure, scientific accounting and documentation in the process of acquiring external finance. The questions have been framed with a purpose to examine the quality of information disclosure by the firms. The entrepreneurs recorded their opinions on a five point scale with degrees ranging from 1 ('strongly disagree') to 5 ('strongly agree').

In order to operationalise this understanding the perceptions of the respondents on the incidence of providing information along with the balance sheet and income statement information and the importance of such information on debt procurement has been taken up.

**The respondents were asked their views on the following statements**

- \*It is important to provide the bank manager information about the organizational structure.
- \*It is necessary to provide the bank with personal information of the entrepreneur.
- \*It is necessary to supply 'soft information' along with 'hard information' to bank /financial institution
- \*It is necessary to supply information about the market to bank

The response to these statements was collected from all respondents and following the partial summative method the analyses has been done with respect to their financial leverage. The discussion here is focused on the views of 69 firms who had actually used some amount of debt so as to study the prospective importance of information which could possibly contribute to the design of the financial leverage of the sampled firms.

**Table 3: Debt Usage and Information Disclosure of the Sampled Firms**

DEBT USAGE	Managerial Information			Personal Information			Soft Information			Market Information		
	SD&D	N	A&SA	SD&D	N	A&SA	SD&D	N	A&SA	SD&D	N	A&SA
NO (31)	8	2	21	3	1	27	16	1	14	10	2	19
YES (69)	16	1	52 (75%)	11	0	58 (84%)	28	1	40 (58%)	23	0	46 (67%)
TOTAL (100)	24	3	73	14	1	85	44	2	54	33	2	65

**Source:** Likert scale, Survey 2013-2014

**Note:** Percentage is calculated on the number of firms using debt (69 firms)

**SD&D** = Strongly disagree and disagree; **N**= Neutral; **A&SA**= Agree and strongly agree

It may be observed from the Table 3 that while 84 per cent of the respondents using debt agree (and strongly agree) that personal information of the entrepreneur is essentially provided for procuring debt; 75 per cent agree (and strongly agree) that information about the organisational structure is an important parameter in sanctioning debt. Information about the market does not appear to be as important as the managerial and personal information as a lower percentage (67 per cent) of the debt users agree (and strongly agree) that information about the market is important. Moreover 58 per cent agree (and strongly agree) that soft information is an important variable influencing the acquisition of debt. As the credibility of a small enterprise depends greatly on the credibility of the entrepreneur (Rozycki, 2006) personal information is of utmost importance to the lenders.

As the chances of misappropriation of loan amount is less with respect to loans having short maturity period, the chances

of moral hazard is minimized and thereby the importance of information. This could be a probable reason for the use of short term debt by the sampled firms not considering information disclosure to be of much importance.

An index has been designed to capture the level of importance that the entrepreneurs assign on managerial, personal information, soft and market related to the lenders for procurement of loan. This is called Information Index (II).

$$II \text{ of a respondent} = \frac{\sum_{i=1}^n R_i}{n}$$

where, n = number of statements and  
 $R_i$  = response of one entrepreneur on statement 'i'

Since there were four statements, the maximum score that can be generated by an entrepreneur is '5' and minimum is '1'.

**Table 4: Debt Usage and Score on Information Index of Sampled Firms**

	Score on Information Index									
		<2	2-<3	Per cent	3-<4	4-<5	5	Per cent	TOTAL	Per cent
DEBT USAGE	NO	0	3		12	10	6		31	
	YES	1	9	<b>14</b>	21	26	12	<b>86</b>	69	<b>100</b>
TOTAL		1	12		33	36	18		100	

**Source:** Liker scale, Survey 2013-2014

54 respondents obtain a score of four or more on the Information Index which indicates that they feel banks assign more importance to managerial, personal, soft and market related information in sanctioning loans. 13 respondents have low score (less than three) on this Information Index; 10 among them have used debt in their capital structure. In this connection detailed look into data indicate that among these 10 respondents, six have been using only short term loans from the banks. This may lead the research to explore other underlying issues that govern the sanction of loan besides providing managerial, personal, soft and market related information.

A detailed analysis on the basis of the experiences of the sampled entrepreneurs may supplement the findings to pin point the major obstacles to loan procurement especially by small firms of West Bengal. This would help to diagnose the exact issues in the area of the small firm financing and help formulate policies.

As a post script of analysis of financing pattern followed by the sampled firms, the study brings into light the real life scenario faced by the respondents. The respondents were enquired about their experiences in raising debt capital. The institutions which were major loan providers to respondents were nationalized banks, foreign banks and government institutions. of the 69 firms availing external debt, 12 obtain loan from government institutions, 52 For the study three major outcomes of loan application has been considered: refusal or denial of loan, delay in loan sanction and reduction in the amount of loan applied. The probable reasons for the outcome have also been diagnosed (Table 5).

For the study three major outcomes of loan application has been considered: refusal or denial of loan, delay in loan sanction and reduction in the amount of loan applied. The probable reasons for the outcome have also been diagnosed (Table 5).

**Table 5: Reasons for Loan Refusal Vs Form of Business and Lending Institution**

Outcomes of Loan Application		Lending Institutions	
		Govt. Financial Institutions	Banks
NO LOAN (A)	<b>31</b>	nap	nap
REASONS BEHIND DELAY OR AMOUNT REDUCTION			
<i>Formalities/Paper Work</i>	<b>14</b>	<b>10</b>	<b>4</b>

Outcomes of Loan Application		Lending Institutions	
		Govt. Financial Institutions	Banks
Bank's Fault	1	0	1
Project Viability	1	0	2
Unstable Business	2	0	2
Amount Of Loan	1	0	1
New Applicant	2	0	2
<b>TOTAL (DELAY/REDUCED)(B)</b>	<b>22</b>	<b>10</b>	<b>12</b>
<b>SANCTIONED IN TIME (C)</b>	<b>47</b>	<b>2</b>	<b>45</b>
<b>TOTAL (A+B+C)</b>	<b>100</b>	<b>12</b>	<b>57</b>

**Source:** Likert scale, Survey 2013-2014

Nap= not applicable

The issue of formalities / paperwork appears to be the most common reason of delay or reduction in loan approval. It is observed that out of the 12 sampled firms who had applied to government financial institution for loan; only two firms have been granted the required amount on time. The issue of paperwork and formalities as a reason of delay/reduction has received the maximum weightage especially in the government institutions (100 per cent). It is also a major issue (33 per cent) in the banking sector.

## Conclusion

This paper endeavours an analysis of the relevance of different financing theories for explaining capital structure choice in the Small Enterprises. The results indicate a typical financing pattern followed by the sampled firms using more of internal equity, followed by short term debt and a meagre or zero percentage of long term debt (Table 1 an 2). This choice is probably guided by the issue of information. Internal sources i.e., fund provided by the entrepreneur requires no information disclosure whereas external sources of finance entails a certain level of information disclosure by the lenders (banks and financial institutions). This hierarchical choice of finance by the sampled firms hints at the pecking order theory of capital structure.

To further justify the relevance of pecking order theory in explaining the capital structure of the sampled small firms, the paper proceeds to enquire into the issue of information. By questioning entrepreneurs through the primary survey about their perceptions about the need for information disclosure (Table 3) and its influence on debt acquisition, we find evidence that the respondents confirm information asymmetry to be a major constraint in external loan (Table 5). The positive association of the score on Information Index and debt usage by the sampled firms (Tables 4) is an indication of the importance of information disclosure in debt procurement. Moreover an analysis (Tables 5) of the outcomes of the loan applications of the sampled firms in the earlier section revealed the issue of documentation, paperwork and insufficient information about the enterprise to be the primary cause of loan refusal and the reduction of loan amount. This further substantiates the importance of information disclosure in procuring debt.

The study brings out two important observations: the sampled firms adhere to a hierarchical choice of capital with preference towards the internal equity followed by short term debt and long term debt and information is a major requirement in acquiring external finance (both short term and long term). These consequential observations indicates that a modified



pecking order theory finds support, both statistically and economically thus making it appropriate in explaining the small firm (sampled) capital structure.

The underlying justification of this research follows the supply-side rationale offered by pecking order theory, i.e., the opaque small firms are refused credit due to the presence of information asymmetry. On the other hand, the manager's propensity of keeping the firm lowly geared so as not losing part of the control (demand side explanation) is not germane to this research issue.

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## (Endnotes)

<sup>1</sup>One important factor in the growth process is the availability of financing, as evidenced by the fact that industries that have easy access to external financing sources tend to grow faster (Rajan and Zingales, 1998).

<sup>2</sup>In countries like Germany and France where the corporate ownership is particularly dominated by family ownership, dependence on the banking system is more as compared to market, probably because dilution of ownership is a great concern to them. India, where three-fourth of the largest companies is family business prefers a similar pattern of financing (Chakraborty, 2010). Therefore, dilution of ownership is critical to the determination of capital structure. Furthermore the domination of banks (nationalized bank) and development financial institutions over the Indian economy since her independence also result in dominance of private lending over public debt.

<sup>3</sup>Demircug-Kunt and Maksimovic (1996) have argued that with the increase in stock market activity, firms' preference for equity over debt increases.

<sup>4</sup>Apart from the changes in capital market conditions, other macroeconomic changes that affect the capital structure decision of firms in the corporate sector are deregulation of interest rate, reduction of Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (Chakraborty 2010).

<sup>5</sup>SMEs in general demonstrate higher earnings volatility and failure rates than larger firms. Furthermore, they also have shorter asset maturities, and occupy different industry sectors and greater growth opportunities than larger firms (Scherr and Hulburt 2001).



<sup>6</sup>Van der Wijst (1989), Walker (1989a,b), Holmes and Kent (1991), Norton (1991), Van der Wijst and Thurik (1993), Chittenden et al. (1996), Hamilton and Fox (1998), Jordan et al. (1998), Michaelas et al. (1999), Wagenvoort and Hurst (1999), Hall et al. (2000), Ocaña et al. (1994), Maroto (1996), Boedo and Calvo (1997), López and Romero (1997), Selva y Giner (1999), López and Aybar (2000), Aybar et al. (2001), Cardone and Cazorla (2001) and Melle (2001).

<sup>7</sup>Although pecking order theory (POT) is pertinent to both the small and large enterprises, its application to the small is constrained by the following two factors:

\*Small firms usually do not have the option of issuing additional equity to the public.

\*Owner-managers are strongly averse to any dilution of their ownership interest and control (which are normally one and the same). This is in contrast to the managers of large firms who usually only have a limited degree of control and ownership interest and are therefore prepared to recognise a broader range of financing options.

Thus small firms seem to face a more extreme version of the pecking order theory described as a 'constrained' POT by Holmes and Kent (1991) and a 'modified' POT by Ang (1991).

<sup>8</sup>While canvassing the questionnaire the respondents were given an idea of the meaning of 'soft information'. Soft information refers to any kind of data other than the relatively transparent public information about the firm such as financial statements or the availability of collaterals.



# Restructuring India's B-Segment Automobile Industry using Socio-Demographic and Psychological Factors

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Hardik Vachhrajani

## Abstract

*In current market scenario, India's automobile industry is transforming very rapidly. Manufacturers too remain untouched by this quickly changing environment, especially B-segment car manufacturers. In recent times, more focus is on B-segment car due to increasing disposable income and easy finance, making automobile's B-segment industry very lucrative. Further traffic and parking problems also shifted luxury segment consumers to B-segment category. Thus, it becomes very important to investigate internal as well external factors influencing the behavior of car purchasing customers in this segment. This research paper applies a quantitative approach on data collected from upcoming city of Gujarat, i.e. Vadodara through a self-administered questionnaire. Further, Chi-square test was used on demographic data to determine whether any statistical relationships among variable exists or not. In addition, it was observed that there is a statistically significant relationship between ownership and each of the independent variables; namely annual income and occupation except education. Moreover, the factors which are playing a crucial role while making a purchase decision about car is mileage, price & music system above and beyond the safety features like ABS & airbags. The findings of this study will improve automobile manufacture's understanding of consumer buying behavior of rapidly*

*growing cities. Apart from that, the study also provides valuable insights in understanding on how different factors affect the consumer buying behavior.*

## Key Words

*Automobile Industry, Customer Behaviour, Customer Perception, Chi-Square Test*

## Introduction

India's automotive industry is one of the largest markets in the world and had previously been one of the fastest and rapidly growing industries globally, is now seeing a negative or flat growth rate. India's commercial and passenger vehicle manufacturing industry is the 6th largest industry in the world, with a yearly production of more than 3.9 million units in 2011. According to recent reports by Bsmotoring.com (2011), India overtook Brazil and became the 6th largest passenger vehicle producer in the world (beating such old and new auto makers as Belgium, Italy, Canada, United Kingdom, Russia, Spain, Mexico, France, Brazil), growing 16 to 18 per cent to trade around three million units during 2011-12.

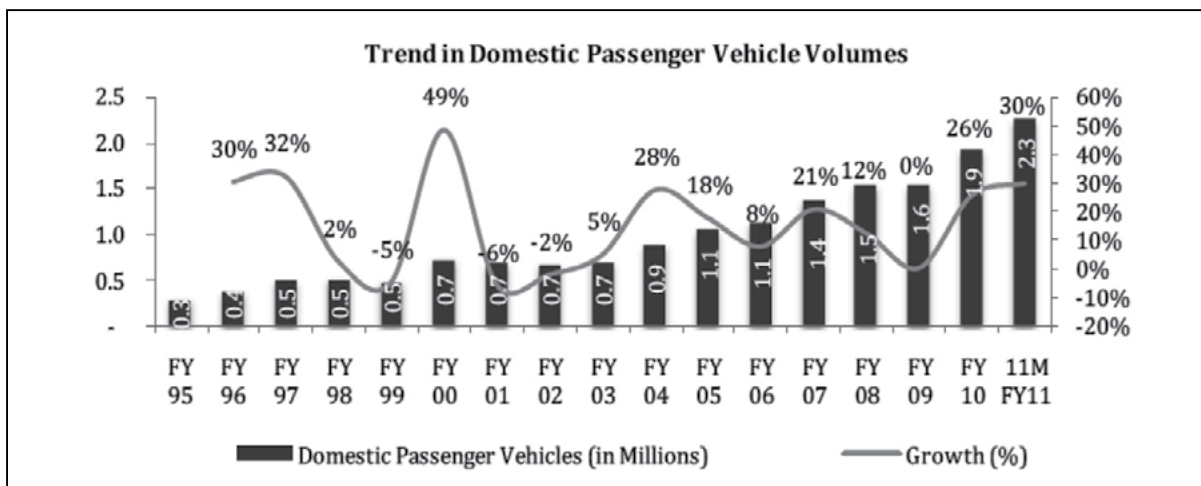
India's automobile market is the fastest-growing market after

China. In 2010, India had experienced a production of more than 3.7 million vehicles, i.e. an increase of 33.9%. As of 2010, 40 million passenger vehicles were reported in India. According to the Society of Indian Automobile Manufacturers (2012), by 2015 annual vehicle sales are projected to touch 4 million. By 2050, the country is anticipated to top the world in car volumes with roughly 611 million vehicles across the nation. In 2008-2010, the automotive industry saw the crisis as part of a global financial downturn. European and Asian automobile manufacturers were also remained untouched from this financial downturn. But American automobile industry felt the maximum heat of such crisis. Actually, this was a period when consumers started looking for a small car with higher performance at an affordable price rate. Thus automobile market got shifted toward the B-segment car.

**Market size**

After de-licensing in July 1991, Indian automotive industry has experienced an outstanding rate on an average of 17% for last few years. The industry has achieved a remark turnover of USD \$35.8 billion and an investment of USD 10.9 billions. The industry has also contributed immensely in lowering unemployment rate by providing direct as well as indirect employment to 13.1 million people. At present, automobile industry is contributing nearly about 5% of India's total GDP (Gross Domestic Product). India's current GDP is about \$1.4 trillion and is estimated to expand to \$3.75 trillion by 2020. In 2016, the estimated size of the India's automotive industry varies between \$122 billion to \$159 billion including USD 35 billion in exports. This translates into a contribution of 10% to 11% towards India's GDP, which is more than twice the current contribution.

**Figure 1: Trend in Domestic Passenger Vehicle Volumes**



**Source:** SIAM, ICRA's Estimates

From the Figure 1, it is clear that automobile industry is going to boom at spectacular rate and will attract many domestics as well as international players. The advancement of new technologies and its availability at a cheaper rate all goes well for the customers. For instance, a few years ago, having a car was considered to be a luxury, today it has become a necessity for the people. In short, a robust economic growth, rising disposable income levels, favorable demographics, easy financing environment and relatively a low car penetration has been the prominent growth drivers for this industry. Foreign OEMs too got attracted with such an optimistic

development which is taking place in India's domestic market. On another hand, renowned and established domestic players are preparing and repositioning themselves in such a manner that foreign OEMs find a tough competition.

In recent scenario, all players are launching small cars, which are designed keeping in mind specifically the Indian consumers. From the Figure 1, it is clear that growth rates of domestic passenger vehicles are going to expand at a significant rate. In near future, India is likely to emerge as a small-car production as well consumer hub. Thus it becomes utmost important to



study the behavior of Indian consumer which are valuable assets for any automobile organization in order to capture major share and becoming leader. Consequently, predicting the consumer's behavior is a challenging job (Armstrong, 1991) with more complex products that look alike making consumer's decision process more difficult (Mitchell and Walsh, 2004), but invariable efforts had been made to understand consumer's purchasing motives (Schiffman and Kanuk, 2007) and decision making style (Sproule, 1985). Further certain research work studied the impact of social-psychological factors on individual consumer (Proctor and Stone, 1982). As far this research is considered, focus is on 'B' segment cars with special reference to Vadodara city. Some of the 'B' segment cars' which have been included in this research are as follows:

Maruti 800	Maruti Suzuki Alto
Maruti Suzuki Wagon-R	Maruti Suzuki Swift
Maruti Suzuki Zen	Tata Indica
Chevrolet Spark	Chevrolet U-VA
Hyundai Santro	Fiat Palio Stile

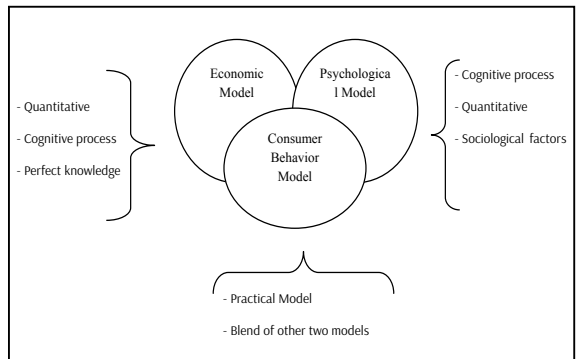
In this article, focus is on both the parameters i.e. socio-demographic & a psychological determinant of consumer's buying behavior. By doing so, this research paper aims to provide better understanding of individual as well of situational predictors impacting on consumer's buying behavior to researchers, practitioners and policy-makers.

### Conceptual frame work

Before developing a model for purchase decision of 'B' segment cars, one has to understand buyer decision process/consumer behavior models. A potential market transaction undertaken by buyers in order to avail or purchase of a service or product is made through decision known as buyer decision process. A buyer decision process is a continuous process i.e. continuously happening before, during, and after the purchase. Most usual examples are: deciding what to drink/eat and shopping, etc. As decision made by buyer is never "seen" and can infer from observable behavior only, thus decision-making is termed as psychological event. In general, there are three ways of analyzing consumer buying decisions. It is shown with

the help of Figure 2 with major points included in that model.

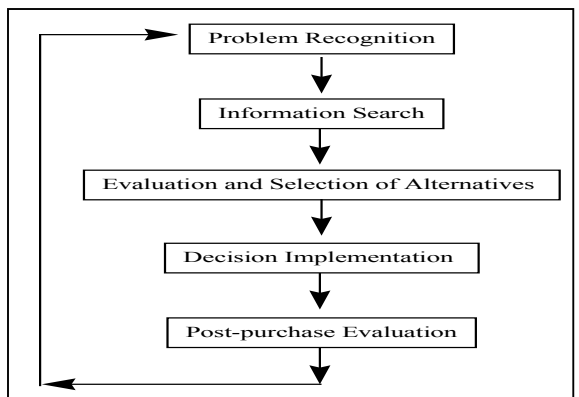
**Figure 2: Analyzing Consumer Buying Decision Models**



Source: en.wikipedia.org

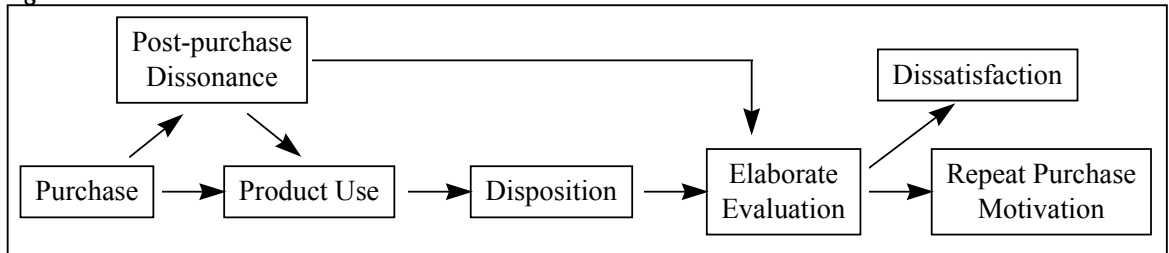
Out of three models represented graphically in Figure 2, a consumer behavior model is recognized as most important one by marketers due to two major reasons. Firstly it is believed that consumer behavior model is most practical model and secondly, it is providing benefits of other two models i.e. economic model and psychological model. Lot of literature is available on consumer buying behavior. Further, it is elaborated under the heading of literature review. But, before moving to next section, it is compulsory to understand the five stages which a consumer often goes through when he/she purchases the product/service as indicate in Figure 3 and Figure 4 describing post-purchase evaluation. These stages also subsist because of normal human psychology.

**Figure 3: The Consumer Information Processing Model**



Source: Consumer Behavior, 6th edition, Michael R. Solomon

**Figure 4: Elaborate Post-Purchase Evaluation**



**Source:** Adopted from Hawkins, Best, and Coney (1983)

**Literature Review**

The study started with the literature survey via various reputed journals, magazines and special articles published in a newspaper as well on the internet, which facilitated to know various facts about the automobile industry. Additionally, more emphasis has been given to understand the latest trend occurring in the industry. The sources also provide the basic knowledge about the industry and the marketing actions followed by the automobile companies, which in return helped in understanding the customers' expectations and further facilitated in designing the questionnaire. Various literatures tried to study the impact of the socio-demographic and psychological factors on consumer buying behavior (Vijayalaskhmi, S. et al, 2013), impact of attitudinal, physical and social factors on consumer behavior (Stanton, 1997; Pride and Ferrell, 2000). Further, research is also carried out with physical, social and cultural factors (Lancaster and Reynold, 1995; Kotler and Armstrong, 2007). In 1999, Straughan and Roberts studied the impact of life style on consumer's behavior. But selected literatures are studied and reviewed in detail are as follow:

Dongyan and Xuan (2008) studied the car purchasing behavior of adolescent Chinese consumers of Beijing city. Outcome of research revealed that while making a purchase decision youthful Chinese paid more attention to characteristics like safety, value for money and riding comfort. Characteristics like resale value, equipment and interior were least important for them.

Gupta, S. (2013) studied various parameters influencing car-buying decision of 191 respondents of New Delhi city. It was observed that the parameters like price, fuel efficiency and reference group had highest impact-ability on buying decision. Further positive association between main influencer and

respondents' age in buying a passenger car was reinforced through this piece of paper.

Nigam and Kaushik (2011) assessed the impact of brand equity on customer purchase decisions of hatchback car's owners in central Haryana for the period of January to July 2010. This study revealed that strong brand equity helped the company to increase their profits by retaining the existing customers. Research also highlighted that the right marketing mix influences the purchase decision in order to have a repetitive sale of product.

Shende, V. (2014) analyzed the consumer behavior of passenger car customers across all the segments like small, compact, super compact, executive and premium class segment. Disposable income was considered as a main driver for car purchase. Parameters like safety, value for money, driving comforts and brand image was top priorities of customers while making a purchase decision. Thus majority of the research are silent on issues like impact of customer's knowledge on preference, relationship between ownership, education, occupation and income, redefining the concept of an ideal car.

Kumar, S. (2014) highlighted the impact of academic qualification of 405 consumers of Chennai city on searching of information about car for the period of 2010-11. Impact of educational qualification was observed across all the three segments, i.e. small, mid and premium segment. It was concluded that there is no significant difference between the various educational qualifications of respondents with regard to the level of information search.

Aghdaie, S.F.A. et al (2014) investigated the effects of

involvement in a consumer's decision process based on an individual, social and behavioral factor. 300 customers, who purchased from Ball chain stores of Isfahan city, were studied in 2013 through random sampling method. Results demonstrated that the involvement has a positive impact on a consumer's decision process. However, social factors couldn't be able to mark considerable impact on a consumer's decision process.

### Objectives of the Study

1. To investigate the relevance of socio-demographic and psychological factors in buying behavior of B-segment car consumers.
2. To unearth possible dependency between car ownership, education, occupation and income.
3. To redefine the concept of an ideal car.

### Research Methodology

To fulfill the research objectives, this study used the pure quantitative approach. Primary data was collected from 140 respondents of Gujarat's fast growing city, i.e. Vadodara through a self-administered questionnaire over a period of 30 weeks during 2014-15. Respondents included in this study are pre-existing car owner as well non-owners (potential customers who are intended to purchase a car within the 6-month period). Questionnaire was designed using the open ended; close ended, ranking scale and likert scale to obtain the suitable response. Before finalizing the sample size, pilot test was conducted on a small group of 10 respondents. Based on the equation's result, the sample size of 140 respondents was finalized at 5% significance level.

### Equation

Where,  
 $n = p.q (z/e)^2$                       n= Sample size  
 $= 0.9 \times 0.1 \times (1.96/0.05)^2$     p = Probability of positive response  
 $= 0.09 \times 1536.64$                       q = 1-p (Probability of negative response)  
 $= 138.29$                                       z = 1.96 (Table value)  
 $\approx 140$                                         e = 0.05(Significance level)

A convenience sampling method was employed in this study. The questionnaire comprised of two sections where the first section of the questionnaire covered the demographic details of the respondents. Demographic variables covered in the study are gender, age, highest educational attainment and monthly income. Second section deals with independent variables influencing the buying behavior. Three statistical hypotheses were formulated and tested during the research period.

- $H_0$ : Ownership and education are independent of each other
- $H_1$ : Ownership and occupation are independent of each other.
- $H_2$ : Ownership and income are independent of each other.

### Summary of Findings

The data collected through a questionnaire, is arranged sequentially and tabulated in the systematic order. Simple statistical tools like hypothesis, cross tabulation, Chi-square test are carried out in Microsoft excel for analyzing and interpreting the data. Further 't' test is used to examine validity of an above-said null hypothesis. In a current scenario, automobile industry is flourishing by car producers, having different models with unique features. So to compare at collective platform, data is interpreted on familiar attributes like price, product features, brand and service.

**Table 1: Background of the Respondents**

	N	%		N	%
<b>Gender</b>			<b>Occupation</b>		
Male	101	72.14	Service	60	42.86
Female	39	27.86	Businessman	41	29.29
<b>Education</b>			Professional	19	13.57

Undergraduate	22	15.71		Housewife	2	1.43
Graduate	89	63.57		Others	18	12.86
Postgraduate	23	16.43		<b>Annual Income</b>		
Others	6	4.29		2 to 2.99 Lacs	41	29.29
<b>Age</b>				3 to 4.99 Lacs	66	47.14
≤25	12	8.57		5 to 7.99 Lacs	22	15.71
26-35	65	46.43		8 Lacs & above	11	7.86
36-45	40	28.57		<b>Car Usage Frequency</b>		
>45	23	16.43		Everyday	55	39.29
<b>Ownership/Usage</b>				3-4 days in a week	53	37.86
Own/Frequent User	87	62.14		Once in a month	20	14.29
Own/Rare User	20	14.29		Once in a half year	12	8.57
Don't Own/Frequent User	22	15.71		Once in a year	0	0.00
Don't Own/Rare User	11	7.86				

### **Demographic Characteristics of Respondents**

In this survey, participation of male respondents (72.14%) is higher than their female counterparts (27.86%). A high proportion of the respondents is within the age group of 26-35 (46.43%), followed by age group of 26-45 (28.57%). A small proportion of the respondents came from the age group of below 25 (8.57%). Majority of the respondents (95.71%) have completed their higher secondary education. 63.57 and 16.43 percentage of respondents are at graduate and postgraduate level respectively. Only 4.29% of the sample didn't complete their formal education (higher Secondary education).

When the respondent's annual income is examined, it was found that 66% of samples are within the range of 3 to 4.99 lacs, followed by 2 to 2.99 lacs group (29.29%). Majority of the sample (62.14%) own and frequent user of the car. A

high proportion of the sample (42.86%) is engaged in service occupation, followed by businessman (29.29%). Only a small proportion of sample is a housewife (1.43%). 55% of the respondents are everyday user of the car.

### **Statistical hypothesis test**

Chi-square test for independence is a statistical hypothesis test that indicates how significantly the two categorical variables from a single population are associated. The result reported in Table 3 indicated that there is a statistically significant relationship between ownership and each of the independent variables namely annual income and occupation except education at 5% level of significance.

**Table 2: Frequency Distribution as per Sample's Time Purchase of Car**

Class Interval (Months)	Frequency	Percent	Cumulative Percent
Don't Own Car	33	23.57	23.57
0-6 months	18	12.86	36.43
7-12 months	23	16.43	52.86
13-24 Months	31	22.14	75.00
24 & above	35	25.00	100
Total	<b>140</b>	<b>100</b>	

**Table 3: Summary of Chi-square Test**

Variables	Chi-square Test (Calculated Value)	Chi-square Test (Table Value)	N of items	Interpretation (Null Hypothesis)
Education ( $H_0$ )	8.92	21.02	12	Accepted
Occupation ( $H_1$ )	94.70	26.29	12	Rejected
Annual Income ( $H_2$ )	61.08	21.02	12	Rejected

$H_0$ : Ownership indicators of car and education are independent of each other.

Since the calculated value (8.92) is less than the table value (21.02) at 5% significance level, the null hypothesis is accepted. Further it can be concluded that there is no statistical relationship between ownership and level of education.

$H_1$ : Ownership indicators of car and occupation are independent of each other.

Since the calculated value (94.70) is more than the table value (26.29) at 5% significance level, then one rejects the null hypothesis of independence. Further it can be concluded that there is a certain association between ownership and occupation.

$H_2$ : Ownership indicators of car and income are independent of each other. Since the calculated value (61.08) is more than the table value (21.02) at 5% significance level, the null

hypothesis is rejected. Further it can be concluded that there is a significant relationship between ownership and level of annual income.

**Psychological Characteristics of Respondents**

A psychological factor is one of the main factors influencing consumer behavior. Further, psychological factors can be divided into 4 categories: motivation, perception, learning as well as beliefs and attitudes. In this survey, psychological characteristics are studied and summarized in Table 4. Majority of the respondents (56.43%) perceive ownership of the car as both (Need as well a status symbol), followed by group of respondents of need (29.29%). 50% of respondents preferred the price range of 3-4 lacs, followed by preferred price range of 4-5 lacs. 50.71% of respondents are looking for mileage between 15-20, followed by above 20 mileage group. Surprisingly not a single respondent opted for below 10 mileage group. Majority of the respondents 61.43%, 72.86%

and 77.86% opted for extended warranty upto 2 year, metallic color and leather interior respectively. 59.29% of the respondents are looking for car with three cylinders. Wagon-R with 24.29% emerged as the most preferred car, followed by Santro (17.86%). The most preferred brand is Maruti Suzuki with 46.43%. A small proportion of the respondents opted for Fiat (3.57%). A high proportion of the respondents (72.14%) opted for a bank finance scheme as a promotional offer.

**Table 4: Summary of Psychological Characteristics**

	N	%		N	%
<b>Perceive</b>			<b>Preference</b>		
Need	41	29.29	Palio Stile	2	1.43
Luxury/Status	20	14.29	Indica	12	8.57
Both	79	56.43	U-Va	1	0.71
<b>Preferred Price</b>			Spark	2	1.43
2-3 Lacs	30	21.43	Santro	25	17.86
3-4 Lacs	70	50.00	Swift	18	12.86
4-5 Lacs	40	28.57	Wagon-R	34	24.29
<b>Mileage (Km/litre)</b>			Zen	14	10.00
8-10	0	0.00	Alto	20	14.29
10-15	29	20.71	Maurti-800	12	8.57
15-20	71	50.71	<b>Brand</b>		
>20	40	28.57	Maruti Suzuki	65	46.43
<b>Extended Warrantee</b>			Chevrolet	19	13.57
Upto 2 years	86	61.43	Hyundai	28	20.00
More than 2 years	54	38.57	Tata	23	16.43
<b>Color</b>			Fiat	5	3.57
Metallic	102	72.86	<b>Promotional Offers</b>		
Simple	38	27.14	Bank Finance Scheme	101	72.14
<b>No. of Cylinder</b>			Extra Features	39	27.86
Three	83	59.29	<b>Interior Design</b>		
Four	57	40.71	Leather	109	77.86
<b>Power (Bhp)</b>			Simple	31	22.14
Upto 50 Bhp	82	58.57	<b>Exterior Design</b>		
More than 50 Bhp	58	41.43	With Graphics	68	48.57
			Without Graphics	72	51.43

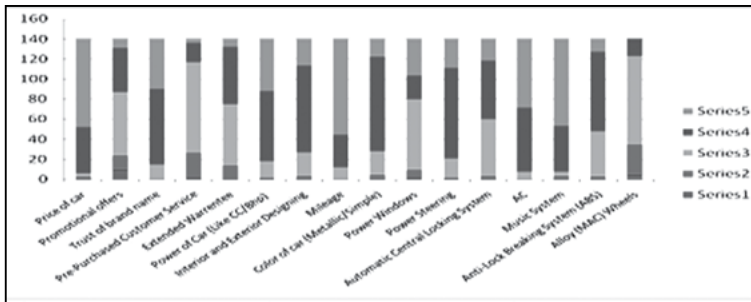
Further analysis is carried out about the impact of additional features on buying decision, which is summarized and represented in a tubular form as shown in Table 5. Features like power steering, central locking, air conditioner, music system has observed greater impact on buying decision as compared to other features like power window, ABS/airbags and alloy wheels.

**Table 5: Impact Summary of Additional Features**

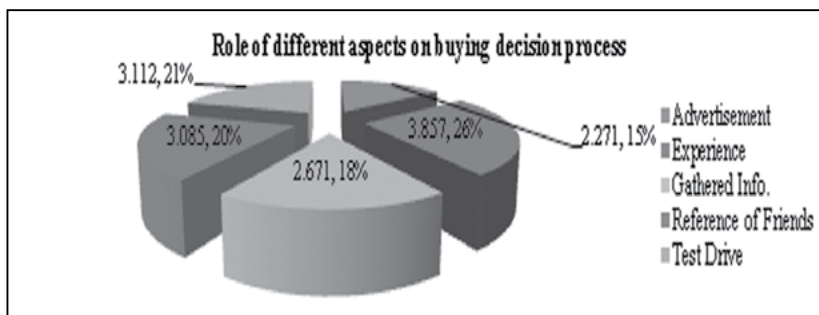
Particulars	Yes	%	No	%
Power Window	39	27.86	101	72.14
Power Steering	110	78.57	30	21.43
Central Locking System	95	67.86	45	32.14
Air Conditioner	135	96.43	5	3.57
Music System	130	92.86	10	7.14
ABS/Airbags	63	45.00	77	55.00
Alloy (Mac) Wheels	33	23.57	107	76.43

Graphical representation of a role of different aspects on buying decision process is shown in Figure 5. Experience is considered as the most valuable factor, followed by test drive. Advertisement scored least among all the factors.

**Figure 5: Role of Different Aspects on Buying Decision Process**



**Figure 6: Important Factors for the Ideal Car**



A comprehensive graphical representation of a significant factor for an ideal car is shown in Figure 6. The rating is done on

the scale of 1 to 5, where 1 is the least important and 5 is the most important. A graph suggests that mileage, price and music system are most significant factors, while pre-purchased customer service and alloy wheels are insignificant one.

## Conclusion

Based on the outcome of this study, it is clear that annual income and occupation have statistical momentous relationship with ownership indicator of the car (as highlighted by Shende, V., 2014). On another hand, education level has a minimum role (same outcome was obtained by Kumar, S., 2014). "B" segment cars are highly preferred by service as well business-class people (72.15%) for daily use and having the income level between 2 to 4.99 lacs (76.43%). It is also observed that male gender is still continuing to dominate this segment. This study also highlighted an experience as a most important aspect and advertisement as least important aspect while making a car purchase decision. But this result is just a contradictory to study done by Ayanwale et al in 2005, showing advertisement as most preferred instrument. Further, Nigam and Kaushik (2011) revealed that strong brand equity and right marketing mix influence purchase decision which is contradictory to results obtained through this study. This study revealed that mileage and price are the main factor influencing purchase decision (supporting the outcomes of Gupta. S., 2013)

Findings of this study improve our understanding of consumer behavior of Gujarat's upcoming city (Vadodara) towards B segment car. The factors which play a crucial role while making a decision about car is mileage, price & music system above and beyond the safety features like ABS & airbags (contradictory to outcome of study done by Dongyan and Xuan, 2008 except value for money factor). In current scenario, owning a car is considered as a need as well a status symbol. Surprisingly the pre or post purchased customer services like hospitality, behavior of staff and information guidance are least important for this segment. Nevertheless, in near future, these factors will play a significant part as the income and standard of living will rise or improve. A result of this study concludes that Maruti Suzuki is having a comprehensible edge over its competitors.

Since this study is exploratory and crossed sectional in nature, the result of this study is limited to urban areas of

Vadodara district. Further in-depth analysis can be carried out on a national basis, including rural and smaller towns and with larger sample size to reflect an exact scenario of Indian automobile industry. Since this industry is growing and changing rapidly, to understand the consumer behavior is becoming more complicated. So to overcome this problem, more factors such as social factors, cultural factors and psychological factors to be considered in determining what affects the consumer behavior.

## Recommendation

From the findings and conclusion, it is very clear that most of the respondents in this segment are price conscious and having latest updates on an automobile industry trend. So the companies should try to keep their prices of the cars in an affordable range, i.e. approximately around Rs. 3-4 Lacs with additional features like music system, A.C. and power steering. In short, customers of this segment are looking for "Value for Money" product. This will result in higher sales and market share. The automobile industry should concentrate their efforts on the factors like experience and test drive apart from advertisement and reference. This will help them to penetrate in "B" segment cars in the best possible manner.

This study will help the manufacturers to understand the buying behavior of customers in order to come up with an innovative product mixes. Finally, buyer behavior acts as an imperative tool in the hands of manufactures/marketers to forecast the future buying behavior of customers and devise strategies accordingly in order to create long term customer relationship.

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#### Foot Note

<sup>1</sup>Selected those cars only which exists in the market over a period of time and foremost preference is given by middle-class family. A new entrant in this segment after 2010 has been excluded.

# Volume Based Measure of Financial Integration and Its Determinants in Select SAARC Countries

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Arup Chattopadhyay

## Abstract

*This study aims to gauge the financial integration of India, Pakistan, Bangladesh and Maldives using a volume based approach and tries to identify variables which could explain their integration and the co-movement of their integration indices. The study establishes that different indicators of financial integration of the countries concerned moves in different directions over time. While equity based measure of financial integration significantly increases over time, its trade based counterpart registers a sharp downward trend; on the other hand, its another measure IFIGDP does not show any significant trend. Using panel regression technique we find that trade openness, financial depth and GDP levels have a significant influence on the financial integration of countries. Further, on the basis of cointegration analysis we find significant co-movement of equity based integration measure among the selected countries, India, Bangladesh and Pakistan.*

## Key Words

*Financial Integration, International Investment Position, IFIGDP, GEQGDP, Panel Regression, Pooled Regression, Cointegration*

## Section I

### Introduction:

In the wake of globalisation and constant internationalization of countries there is increasing interaction among economies around the globe. The continuous dissolution of economic boundaries has led to free flow of all sorts of endowments and resources across the countries where those find more compatible shelter. Though such mobility has its bane but there is no denying the fact that it also presents opportunities, if tapped wisely, can lead to greater development and prosperity. Realizing this fact many countries around the 90s “freed” their economy to allow interaction with the rest of the world, make use of their resources and let others to utilise their own. In this process of interaction the economies tend to get more and more familiar to each other and get more and more integrated with each other.

The benefit of financial integration has been very aptly given by Pierre-Richard Agenor (2001). From these studies we see the major benefits of financial integration as strengthening macroeconomic discipline, establishing financial efficiency, risk sharing and consumption smoothing, and enhancing domestic investment and growth. With benefits there are also certain costs associated with the integrating process. Some of those costs are increasing volatility as well as its cross border transmission, concentration and contagion of capital flows etc, which can, however, be controlled under effective regulatory framework.



This paper tries to analyse financial integration of select constituent SAARC countries and find out whether the South-Asian region has been transacting with their neighbours in equal pace or not to usher the probable benefits of financial integration.

## Literature Review

Ideally, to measure financial integration among economies we need their cross border capital flows but such specific data are not forthcoming leading to indirect measures of financial integration measures in a specific approach called the volume based approach. Besides volume based measures, there is also a broad category of price based measures which also help in judging the extent of cross border financial interdependence among countries.

The volume based approach is detailed in an IMF Staff Paper by Lane and Milesi-Ferretti (2003) titled "International Financial Integration". The paper devises a formula for measuring financial integration by analysing the International Investment Position of different European countries and goes on to find out variables affecting it. It finds increased integration among the countries in the sample according to its formula and also notes the prevalence of Foreign Direct Investment and Foreign Portfolio Investment over International debt stocks. Applying the same methodology Jeon, Oh and Yang (2005) performs a financial integration exercise for ASEAN and three other countries. It also considers the imbalance between savings and investment as an indicator of increased cross border financial transactions. ASEAN financial integration has also been studied by Geert Almekinders, Satoshi Fukeda, Alex Mourmanras and Jraming Zhou (Feb 2015) in an IMF working paper.

Another vein of literature in the area runs on the lines of law of one price by looking at the asset prices prevalent in different countries' markets. If same prices prevail for the same financial assets class across borders those are taken to be financially integrated. Interest Rate Parity is used extensively for the above mentioned method. Khan and Sajid (2007) study financial integration of SAARC countries by empirically checking the Uncovered Interest Rate Parity among the sample countries. It finds low integration among money markets in the region. Hunter and Francis (2002) examine the extent of liberalisation or non-integration on the same Uncovered

Interest Rate Parity lines. Adam et al (2002) state the asset price convergence as a measure of capital market integration for their sample countries. A good number of literature exist to explain how and why both covered and uncovered interest rate parity hold and what could explain the deviations from them which can be used a valuable input to the asset-price based measure of financial integration. Frenkel and Levich (1975) account for the transaction costs present when there is an aberration in the actual forward premium from that implied by the theory. Lahmani-Oskooee and Das (1985) present theoretical as well as empirical results to explain diminishing role of transactions cost in explaining the deviation of actual forward rates from the forward parity theory.

Financial integration measurement by studying the stock markets is also undertaken by researchers. Ayuso J. and Blanco (1999) have undertaken such stock market integration study. The authors have noted that weight of foreign assets in agents' portfolio has increased. Jain S and Bhanumurthy (2005), study the financial integration of the Indian market and find a strong integration between Indian call money market and the LIBOR. Scheicher (2001) studies the global integration of stock markets in Hungary, Poland and the Czech Republic and finds the evidence of limited interaction: in return both regional and global shocks are identified, but innovations to volatility exhibit a chiefly regional character. The markets exhibit low correlations with international markets as well.

A few more notable studies on the topic are of O'Donnel (2002) and Edison and Warnock (2003) which have looked into the impact of international financial integration on various economic indicators. For Europe, Adam and others (2002) explore a variety of measures of international financial integration. Bekaert and Harvey (2000) have attempted to date the integration of emerging market stock exchanges with the global market, using an asset price model.

To the best of the authors' knowledge, volume based measure of financial integration taking India and other SAARC countries is lacking and a modest effort has been made here to meet this gap.

## Objective

The present study seeks to examine as to what extent has the financial markets among different economies have been

transacting with each other and becoming more and more integrated with each other. The paper tries to quantify the extent or magnitude of integration among the selected countries with the rest of the world by dint of a definite formula for a period of years and note its evolution over time. We also try to identify causal variables which might have a role to play in determining the integration and hence can be used as policy variables to alter the process in a favourable direction. Lastly we look for the co-movement of the indices of integration between countries. So our aim could be summarised as a stock taking exercise of financial integration among select countries and point out its causes.

### Data Issues, Sources and Methodology

We have collated necessary data on financial integration for India, Pakistan, Bangladesh and Maldives. The data for the analysis has been derived from the International Financial Statistics Yearbook 2013 published by the International Monetary Fund. All of the data for external assets and liabilities for all the years have been derived from the International Investment Position section of the publication for each country. The data is available for years 2000 to 2012 except for Pakistan which does not have data for three years 2000, 2001 and 2002.

Data on various aspects of the research have also been derived from two websites, namely: [www.theglobaleconomy.com](http://www.theglobaleconomy.com) and [www.tradingeconomics.com](http://www.tradingeconomics.com).

In the first part of the paper we actually follow the standard method prescribed by Lane Milesi- Ferretti (2003) for measuring financial integration. Next given the nature of our data we follow panel regression for estimating the impact of various regressors on financial integration of countries. It is needless to mention that panel regression method is more robust than any other regression method based on only time series or cross section data. In the study also we have used cointegration analysis for examining the long-run co-movement of integration measures of the countries concerned when the data under study are found to be non-stationary.

### Limitations of the study

Like any empirical study our work is also not free from limitation mainly arising out of unavailability of adequate

secondary level data. Due to data inadequacy we had to leave out Maldives from the cointegration analysis though it has been included in our analysis of financial integration.

### Section II

This section is basically a stock taking exercise as to how has been the selected countries for the analysis been integrated into the world economy financially by the dint of a volume based measure of financial integration used by Lane and Milesi-Ferretti, 2003. Following the measure, we quantify integration of a country by summing over its external assets and liabilities as obtained from its International Investment Position (IIP) and divide the sum by its Gross Domestic Product (GDP) for a each year.

However, our objective here is to study financial integration of a certain block of countries into the world economy. So, we sum over all foreign assets and foreign liabilities of the selected countries and then divide the sum by their combined GDP for a certain year and seeing the ratio we make a judgement about the level of financial integration achieved with the rest of the world. We then trace the evolution of the ratio over the period 2000 to 2012.

So the working formula of financial integration is

$$IFIGDP_{it} = \frac{\sum_i FA_{it} + FL_{it}}{\sum_i GDP_{it}}$$

where IFIGDP stands for International Financial Integration to Gross Domestic Product, FA and FL refers to foreign assets and foreign liabilities respectively. Subscript "i" and "t" are used for country and year respectively throughout the paper. Using the above process we obtain Figure 1.

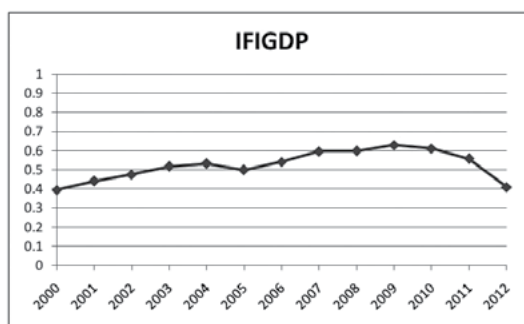


Fig: 1

The graph hints at somewhat rising level of integration in the region. The year 2010 registers an increase of 50% in the ratio as compared to year 2000, and then experiences a regression to near initial value in 2012. In a related graph, figure 2, we see that that IFIGDP across nations does not have a very significant dispersion over time.

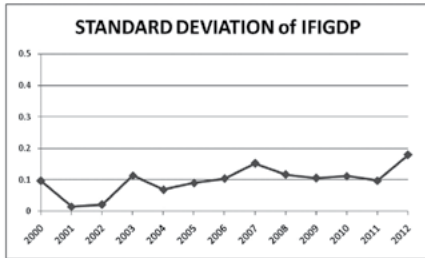


Fig :2

Trying to fit a log-linear trend on the IFIGDP measure we obtained the following equation

$$\ln Y_t = -0.786^* + 0.019t$$

signalling the fact that financial integration in India, Pakistan, Bangladesh and Maldives jointly remains trendless.

The above measure of integration considers the overall foreign assets and foreign liabilities of countries as defined by the IMF BMP5 manual, which includes the debt as well as the equity instruments traded by the respective countries. Since equity instrument trading of different countries are governed by different, probably idiosyncratic factors, we try to have an equity based measure of financial integration considering only the equity flows across borders of the countries in question ( Lane and Milesi-Ferretti, 2003). Instead of considering whole of foreign asset and liability, we consider only Foreign Direct Investment, both asset and liability, and portfolio equity investments, both assets and liability. Summing the above variables we divide it by aggregate GDP of the considered countries and get an equity based measure of financial integration.

The operational formula being

$$GEQGD P_{it} = \frac{\sum_i PEQA_{it} + FDIA_{it} + PEQL_{it} + FDIL_{it}}{\sum_i GDP_{it}}$$

where GEQGD P is defined as Gross Equity to Gross Domestic Product, PEQA(L) and FDIA(L) are the respective stocks of portfolio equity and FDI assets (liabilities) and other symbols have usual meanings.

Following the above method we obtain the adjoining diagram, figure 3.

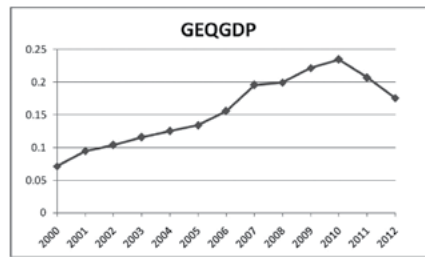


Fig :3

The diagram elucidates on the increasing tendency of the equity integration of India, Pakistan, Bangladesh and Maldives with the rest of the world. The ratio starts much below the IFIGDP measure but registers almost 300% increase till 2010. At the fag end of the sample period the ratio does travel southwards but finishes well above the initial level, more specifically at 240% higher than the original value.

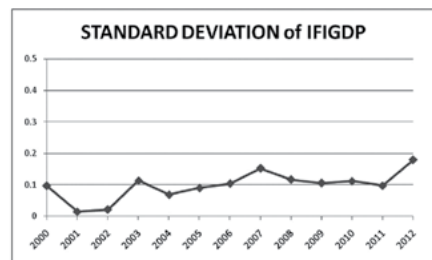


Fig :4

Figure 4 tries to gauge the dispersion of the equity based integration of the four countries under analysis. We notice here that the standard deviation of the countries is continually rising over the years though the magnitude of increase is low enough. We fit a log-linear trend on the data of GEQGD P to obtain the following equation.

$$\ln Z_t = -2.522^* + 0.087^*t$$

Where  $Z_t$  is GEQGD and the trend equation implies that the growth rate of the measure is 8.7% per year which is significant at 1% level.

Cross border exchange of capital leads to prosperity in production in countries in which the capital moves into, possibly in areas in which it has an advantage and encourages it to engage in international transaction of goods and services. Out of this interest we have tried to see the financial asset trade from the goods and services frame of reference. Meaning, we as before, summed over all the foreign assets and liabilities held by the countries concerned and divide it by the sum of all goods and services exported and imported by the countries rather than the combined GDP of the countries. Through this ratio we try to compare financial trade with the Goods trade.

The formula being

$$IFITRADE_{it} = \frac{\sum_i FA_{it} + FL_{it}}{\sum_i X_{it} + M_{it}}$$

Where IFITRADE is International Financial Integration to Trade, X and M are trade (i.e., export and import) in goods and services.

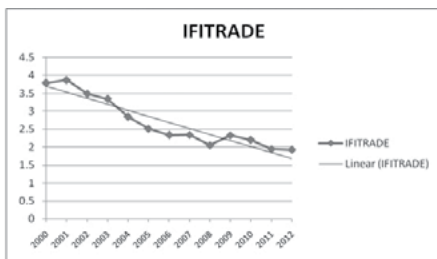


Fig :5

Figure 5 unequivocally delineates the fact that goods trade has been rising more in volume as opposed to rise in foreign assets and liabilities hence tracing a declining trend in the ratio over the sample period. The same method is applied to compare equity trade with goods and services trade.

Formula is:

$$GEQTRADE_{it} = \frac{\sum_i PEQA_{it} + FDIA_{it} + PEQL_{it} + FDI_{it}}{\sum_i X_{it} + M_{it}}$$

Where GEQGD is Gross Equity to Trade and other variables are same as defined previously.

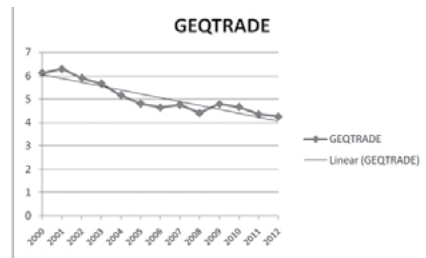


Fig :6

As evident from the above diagram, figure 6, also trades in goods and services tend to surpass the cross border flow of capital, though not as much as in the previous case where both equity and debt instruments were present. The final ratio is about 33% lower than what it started with.

This section of the paper shows how India, Pakistan, Bangladesh and Maldives have increased their cross border goods and services trade activity, while the financial activity is not commensurate. Whatever investments are transacted is highly unequally distributed in the region. The region could do with more investment friendly government policies. Having said that, we wanted to explore what could probably cause or explain financial integration, IFIGDP or GEQGD, which is our concern in the next section of the paper.

### Section-III

From the review of the existing literature [Lehman J. and Eijffinger S. (1996), Lane P. and Melesi-Ferretti (2008), (2007), Ananchotikul N. et al. (2015) etc.] we enlist several variables as potential determinants of the financial integration. First of all we take into account trade openness as a regressor, defined as sum of exports and imports relative to GDP. The idea being that such trade would definitely lead to corresponding financial transaction and further will have a sort of familiarity effect leading to increased financial activity among the countries. Next we consider stock market capitalization relative to GDP as our second regressor, calling it STKGDP. Increased level of production activity in a country is considered to be a harbinger to increased financial activity and hence more cross border financial transactions making a case for inclusion of Gross Domestic Product in its natural logarithmic form as another

determinant of financial regression. Hence it is our third regressor. We next calculate financial depth of the economy by measuring equity shares relative to GDP and terming it as FINDEPTH. Corporate tax rate plays an important role in inflow and outflow of financial capital in a country. High taxation is bound to discourage investors since it will decrease their profit spread. So CPTAX is another regressor in our regression to determine the level of financial integration.

Hence we specify our regression equation as follows.

$$\Delta(IFIGDP_{it} \text{ or } GEQGD_{it}) = \alpha_i + \gamma * X_{it} + \beta * \Delta(Z_{it}) + \epsilon_{it}$$

Where we relate the growth in international financial integration to a set of country and time varying determinants,

$X_{it}, Z_{it}$ . We first differenced the data to do away with nonstationarity present in the levels of IFIGDP or GEQGD and all the regressors except the corporate tax.

In case of regressand, IFIGDP, on the basis of Breusch-Pagan Lagrange multiplier test statistic we find that the relevant chi-square value is insignificant implying thereby that Random Effects model of Panel Regression is inappropriate hence Pooled Regression Model can be estimated. Again to make a choice between Pooled Regression Model and Fixed Effects Model of panel regression we have compared the respective values of F-statistic from where we find that Fixed Effect Model having F value 3.48 is more suitable than Pooled counterpart having the value of 3.28. So we settle for Panel regression of Fixed Effects Model.

## Results

**Table 1: Estimated results of the panel regression explaining ifigdp**

Ifigdp	Coeff.	Std. Err.	t	P> t
<b>Tdop</b>	.1631836	.0496372	3.29	0.002
<b>Loggdp</b>	-.2235451	.120799	-1.85	0.073
<b>Stkgdp</b>	.0525849	.0597597	0.88	0.385
<b>Findepth</b>	.2990851	1.550358	0.19	0.848
<b>Cptax</b>	.0073218	.0055085	1.33	0.193
<b>Cons</b>	.1730826	.1467274	-1.18	0.247

Based on the regression above taking IFIGDP as explained variable, we find that trade openness and logGDP are significant at 1% and 5% level respectively while all other regressors turn out to be statistically insignificant. The results are put in Table 1. However, in case of the regressor GDP we get a paradoxical result of negative relationship with the explained variable, Financial Integration. This result pertained to all the financial instruments including equity instruments traded across the borders of the selected countries. We now check how the equity based measure of financial integration, namely GEQGD measure is explained by the same set of regressors.

As for non-stationarity we first difference all regressors and the regressand except the corporate tax rate like the previous case. As directed by the Breusch-Pagan Lagrange Multiplier test we discard the Random Effects Model and consider the choice between Fixed Regression Model and the Pooled regression model by comparing their respective F values. It turns out that the F value of the Pooled model is higher than that of the Fixed Effects Model at 3.15, hence making a case for pooled regression model.



**Table 2: Estimated results of the Pooled regression explaining GEQGD**

<i>GEQGD</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-0.03642	0.049896	-0.72993	0.471957
Trade openness	0.054871	0.117804	0.465783	0.645249
Stockmarket capitalization	-0.03229	0.025764	-1.25351	0.221176
LogGDP	0.026321	0.068092	0.386556	0.702231
Financial depth	2.038904	0.657462	3.101175	0.004597
Corporate tax	0.001035	0.001463	0.70765	0.485458

From table 2 we see that on GEQGD only Financial Depth is having a significant and positive value, which is the ratio of liquid liabilities of the countries relative to the GDP.

#### Section IV

We here try to test whether there is any long-run relationship between financial integration measure, either IFIGDP or GEQGD of the selected countries. To that end, we undertake cointegration analysis. Due to unavailability of data at different levels we were bound to take two countries at a time for testing cointegration and had to exclude Maldives from the analysis. Hence we have three countries for the analysis viz. India, Bangladesh and Pakistan.

As a prerequisite to the above mentioned analysis, we ascertain the presence of non-stationarity in the data using a non parametric test known as the Phillips-Perron test. Estimated results are presented in the table 3 below:

**Table3: Results of Phillips-Perron test.**

	<b>IFIGDP</b>	<b>GEQGD</b>
<b>India</b>	-0.126922 (0.6194)	0.661277 (0.8445)
<b>Bangladesh</b>	-1.311435 (0.1622)	-0.850231 (0.3268)
<b>Pakistan</b>	-1.507771 (0.1174)	-0.128296 (0.6125)

In table 3 above the estimated values show that there is the presence of unit roots in each case for both the data sets hence





cointegration analysis should be performed.

IFIGDP : We do not find any cointegrating relation between IFIGDP of India and that of Bangladesh as the observed value of Trace statistic is 10.27798 which is less than the critical value of 17.98038 even at 10% level.

Moving on to focus on such relationship between India and Pakistan we find cointegration relationship between the two as the value of Trace statistic 31.25995 is greater than the critical value 20.26184 at 5% level and the estimated cointegrating equation is

$$IFIGDP_{India} = -0.969942 + 2.710398 IFIGDP_{Pakistan}$$

(0.19465)            (0.32053)

Considering long run relationship between Bangladesh and Pakistan we see that there is no such relationship between the two as the Trace statistic value 15.67010 is less than the critical value of 17.98038 at 10% level of significance.

GEQGD : We do find a cointegrating relationship between India and Bangladesh as the Trace statistic (19.55268) is greater than its critical value of 17.98038 at 10% level of significance. The cointegrating equation turns out to be here as follows:

$$GEQGD_{India} = -1.105754 + 25.78840 GEQGD_{Bangladesh}$$

(0.60679)            (10.0565)

Moving forward to consider the cointegration between India and Pakistan we find a long run relationship as suggested by the Trace statistic value of 19.92349 which exceeds the critical value of 17.98038. The resulting equation being

$$GEQGD_{India} = 0.052243 + 1.094366 GEQGD_{Pakistan}$$

(0.03016)            (0.21528)

Finally we consider the long run relationship between Bangladesh and Pakistan for the given parameter of financial

integration. Here also we get a cointegrating relationship between the two countries as the value of the Trace statistic 18.07584 is greater than the critical value of 17.98038. Further,

$$GEQGD_{Pakistan} = -0.714564 + 14.20202_{Bangladesh}$$

(0.23375)            (3.81355)

which is the cointegrating relation between the countries concerned.

### Section V

### Conclusion

In our analysis mainly four SAARC countries have been included, India, Pakistan, Bangladesh and Maldives to test for their financial integration with rest of the world including themselves. The two ratios used do not show any significant rise of such integration over the sample period of 2000 to 2012 though the equity based measure does show an upward trend in the data. Interestingly when the financial trade is compared with the trade in goods and services we find that trade in goods and services are outstripping the financial trade by larger margins year by year, hence the computed ratio is declining over the years. In determining the drivers of financial integration in the area we come up with three significant variables, one being the trade openness, the second one financial depth and the third one being the GDP. Greater transaction of goods and services and higher involvement in equity shares lead to greater involvement of countries in the financial transaction. However, we are left with a perplexing result of negative relationship between financial integration and level of GDP, which deserves further research in future. When we consider the cointegration we find that in the IFIGDP scenario we obtain single cointegrating relation between India and Pakistan while in the GEQGD scenario all the combinations of the three countries show cointegration between them. Thus, broadly the countries concerned move in the same direction in the long-run in regard to their financial integration.

The present study can be utilised to see whether the general trend of liberalizing the economies at the end of the 20th

century has bore any fruit, as far as the SAARC region is concerned. Looking at the empirical results of the study it is evident that the select SAARC countries are moving somewhat jointly during the time period under study but their integration with the rest of the world is very weak. The variables which are found to have a positive and significant impact on the integration process of the countries concerned must be used judiciously to get higher integration, that, in turn, brings more efficiency in their financial markets and ultimately general development in the economies [Pierre-Richard Agenor (2001)].

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