
A STUDY ON IMPACT OF STOCK MARKET PERFORMANCE ON ECONOMIC GROWTH IN INDIA: AN EMPIRICAL APPROACH

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ABSTRACT

In today's era of globalization, economic growth in any country is much beyond its productive mechanism and capacities rather, it is much more affected by its economic environment and financial set up. Not only stock markets are referred as barometer of the economy, they tend to set in waves of change but even strengthen the mantle of a country's economic growth. On the same lines, the present paper examines the impact of the activities in Indian capital market on its economic growth. In this attempt, it brings forth the nature of causal relationship between stock market and economic growth empirically. The study deploys econometric models like Granger Causality, Johansen-Co integration test etc. to the time series data for a dataset of fifteen years. The data at National Stock Exchange of India Limited is used as a proxy representation of capital market activities in India and the data of Gross Domestic Product is taken as a synonym for economic growth.

Keywords: Co-integration, Economic Growth, Globalization, Granger Causality, Stock Market,

JEL Classification: C3, G0, D5, C5, G1

INTRODUCTION

The transition of Indian economy through the process of three fold reforms via Liberalization, Privatization and Globalization has led to a pace of growth almost unparalleled in the history of any economy. The wave of globalization and financial sector reforms have set in waves of financial architecture which has roped the Indian Stock Market into an altogether different attire. The Stock Market which had its humble beginning in the eighteenth century is now seen blooming with innovations like dematerialization, derivatives etc. there by leading to a phenomenal growth of equity markets. Such increased level of economic/financial activities tends to develop linkages with the economic growth/development of the country. The underlying reasoning for holding such a linkage as is based on the

premise that activities in capital market lead to investment process via financial intermediation and thereby increasing productive capacity of a country. Further, the study of the relationship between economic growth and capital market development has gained paramount importance and has been the pivot of several researches in the past. There exists a rich gamut of literature over the relationship between stock market development and economic growth. There exist different sets of belief about the probable impact of stock market activities on the economic growth of the country. Initially, researches have tried to find answers to the query whether or not stock market affects economic growth of the country and thereafter the focus has shifted on findings of the direction of the relationship between the two and economic activities.

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One school of experts strongly believes that there exist strong and close linkages between stock market development and economic activities. The rationale behind such a belief is that increased financial activities in stock market escalate economic growth leading to a rise in GDP. It is held that capital market channelize savings into production investments, leading to an increase in economic activities, specifically economic growth. Another set of experts are of the opinion that it is the economic growth, represented by GDP which is seen affecting the stock market. This makes the finance growth nexus a never settled issue.

Owing to the dilemma existing over such an unresolved issue, the present study endeavors to examine the impact of capital market development empirically and not the stock market. No doubt, the developments in the capital market have been succeeded by good economic growth; it becomes rather imperative to study the several constituents which as a whole represent capital market proposition. This study proceeds to establish the impact of capital market development on the economic growth of the country; imbibing several representation/variables into the study. The study does not merely uphold capital market return in arriving at a valid conclusion rather takes into consideration other indicators viz. market capitalization, turnover etc.

LITERATURE REVIEW

The relationship between stock markets and macro economic variables has been the pivot of several studies in the past. A plethora of studies have also been carried on the linkages between stock market activities and economic growth. Studies as early as of Levine (1991), Bencivenga (1996) have been well sufficed that developed markets are a positive inducement for economic growth. These studies have

upheld the fact that capital market development is helpful in raising capital in production activities and there by gear up economic growth.

Further, Humpe and Peter (2009) has carried out a study in context of US and Japan for a time frame of forty years. The empirical results worked out on the monthly data series pinpoint that there exists significant relationship between stock market activities and economic growth in general. The studies based on cross country data sets have also echoed and backed the notion of capital market escalating economic growth [Hamid & Sumit (1998) and Ben & Ghazouani (2007)].

.However, in the context of India, there have been studies which have imbibed macro economic variables like exchange rates, national income etc [Bhattacharya & Mukherjee (2002), Chakradhara Panda (2001)]. This study is necessitated on the ground that it is one among the few exclusive studies which have concentrated on core capital market performance in an attempt to explore the status of economic growth.

This study has a broader spectrum in comparison to the past studies which have merely focused on stock market. Rather, this study takes capital market development to understand its linkages with GDP. In extending the scope of stock market to the capital market, the study focuses on the first hand financial transactions which actually have direct bearing on the productive capacities of the country. This paper presents a genuine attempt to enrich the existing literature on the linkages between capital market and economic growth.

OBJECTIVE OF THE STUDY

This research paper endeavors to evaluate the impact of developments in Indian Capital Market on the economic growth of the country. In common parlance, one can visualize correlation between the two but for arriving at a valid conclusion; the observation must be backed by empirical investigation and results.

The paper is an improvement over the previous studies as it is based on a broader time frame and is supplemented by more than three exogenous variables in determining the probable impact of the capital market performance. The study proceeds to unfurl valid conclusion to the following queries:

- (i) Is there an impact of capital market development on the economic growth of a country?
- (ii) What is the direction of relationship between capital market activities and economic growth?

With the following objectives, the next section of the study unfolds the present state of Indian Capital Market, status of Economic Growth in India, data and methodology etc.

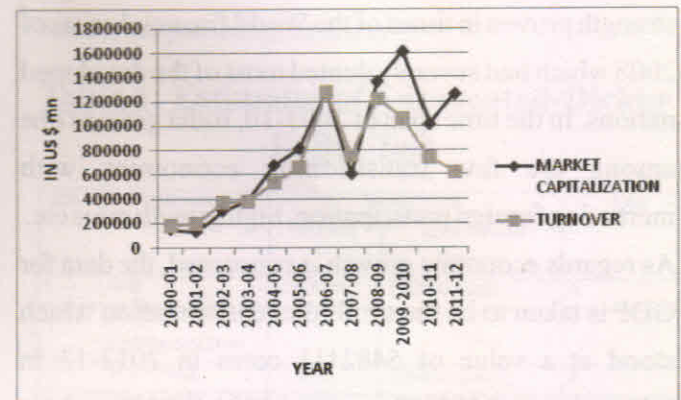
OVERVIEW OF INDIAN CAPITAL MARKET

The tale of development of Indian Capital Market is echoed by the milestones received in the past when the market capitalization has grown leaps and bounds. The upsurge in the trading volume has risen from 2002-03 onwards.

Not only this, the resource mobilization by Government and corporate sector rose by 21.5% (from Rs. 9926 million) in 2011-12 to (Rs. 12060 million) in 2012-13. The growing participation of corporate entities can be seen in the increase in the number of listed companies from 4987 (2010) to 5112 (2011) and 5191 (2012).

The global economy has continued to grow at a slower pace in 2012 and the same has turned contagious for the Indian economy as well as far as GDP is concerned. In India, the growth rate of the economy has been on a lower side consecutively for 2011-12 and 2012-13, the decadal average being 7.9% during 2003-04 to 2012-13.

Figure 1: Trend in Indian Stock Market



The Indian economy registered a growth rate (at Factor Cost) of 6.2% in 2011-12 and 9.3% in 2010-11. This slump in the growth rate can be attributed to both domestic factors as well as factors evolving from rest of the world; the major force being the economies of advanced nations. However, this lethargic growth is not a random spurt rather can be traced to the lower growth rates witnessed in quarterly pattern. For instance, the cumulative growth in the first two quarters of 2012-13 was just 5.4% in a sharp contrast to 7.3% in the corresponding time frame of 2011-12. Further, the gross domestic savings as a ratio to GDP came out to be 30.8% in 2012 which falls short of in comparison to its figure of 34.0% in 2010-11.

ECONOMIC GROWTH: THE STORY SO FAR

With its unparalleled growth in the recent past, Indian economy continues to occupy not only a prominent place in Asian markets but is even traced as the fourth largest economy in terms of purchasing power just behind U.S.A., China and Japan. The confidence in the statute of India has all the more increased owing to its strength proven in times of the World financial crisis of 2008 which had severely dented most of the developed nations. In the time span of 2003-10, India grew as one among the few transitioning economies with increasing foreign participation, high growth rates etc. As regards economic growth is concerned, the data for GDP is taken to be the symbolic representation which stood at a value of 5482111 cores in 2012-13 in comparison to 2474962 cores of 2001-02. Not only in absolute terms, has the Gross Domestic Product in India shown rising trends in quarterly time frame too. These can be attributed to the wave of economic environment stirred by a series of ambitious reforms of LPG which have gone a long way in stimulating economic growth in India. This has led to the development of capital markets which facilitate mobilization and allocation of savings, risk diversification, enabling exchange of goods and services and there by quicker and improved acquisition of information.

The economic growth, as measured in terms of Gross Domestic product, has shot up too high from its humble beginning of Rs. 936270 mn in 1983-84 to Rs. 2348481 mn (2000-01) and recorded a value of Rs 5505437 mn by the end of 2012-13. Further, the contribution of agricultural sector tot GDP has subsided to a share of 13.69% (2012-13) from the chunk of 34.42% of 1986-87. In the last two

decades, there has been a steady rise in the share of "service sector" from Rs 600366 in 1991-92 to a share of Rs 3279364 mn at the end of 2012-13.

This has led to the belief in the "theory of development in economic sector preceding financial development". As economic growth appears as a consequence of development in stock market, this study is necessitated to unfurl the truth in the context of India.

DATA

The present study is based on secondary data obtained from the official websites of National Stock Exchange of India, Planning Commission of India, Reserve Bank of India etc. The study period spans from 1st April, 1999 to 31st March, 2013. As the study attempts to study the impact of the working of Indian Capital Market on economic growth of the country; there are certain exogenous variables which have been imbibed into the study. The data set of National Stock Exchange of India has been used to represent the Indian Stock Market and the value of GDP at constant prices has been inculcated into the study for the representation of economic growth.

The other capital market performance variables include market capitalization, turnover, total new issues and private, government mobilization through new issue markets. The data has been collected and compiled for a time frame of fifteen years. Out of the several representative variables in the capital market domain, the choice of "Turnover" is made and is symbolized as TOVER.

Also, the variable of market capitalization is chosen and abbreviated as MKTCAP where as the total new issues floated is represented by NI. Lastly, the total listed equity and Government stocks are portrayed as PGMOB. The values of GDP has been fetched from the website of Planning Commission and is simply

denoted as GDP in the methodological part.

HYPOTHESES OF THE STUDY

The study proceeds to unfurl the truth underlying the following hypotheses:

METHODOLOGY

The present study rests on the time series data for a period of fifteen years from 1999 to 2013. As most of the financial time series data are inherently non-stationery, the unit root test is applied in the initial phase for testing the presence of unit root. Further, if the data set turns out to be non-stationery, the application of traditional Ordinary Least Squares turns to be futile as the results would be spurious. In order to rule out such deficiencies in the OLS estimation, the Error Correction Model is used. The co-integration test is also deployed to study long run relationship amidst the variables under purview. This rules any chance of short run dynamics infecting the relationship not to hold true in the short run.

A cue has been derived from the suggestion made by Kunt and Levine (1996) to study the relationship between stock market and economic growth. After operating the data set on the parameters of stationery, the study proceeds to the modeling of co integration. Coming on to the choice of the variables, the study imbibes four variables to represent stock market performance which are as under:

- MKTCAP → Market Capitalization
- TOVER → Turnover
- NI → New Issues
- PGMOB → Private and

Government Mobilization In combination to these, the study uses values of GDP to inculcate the proposition of economic growth. To arrive at valid estimation and sound impounding, a set of non-stationery variables are to be co-integrated. Taking a clue from the study

made by Ewah (2009), this study attempts to explore between capital market and economic growth.

EMPIRICAL RESULTS

This section presents the empirical results of the econometric techniques modeled on the time series collected for the study. The paper initiates with the inspection of the presence of unit root in the data set with the use of Augmented-Dickey Fuller test. The results are presented as under:

Table 1: Estimates of Augmented-Dickey Fuller Test

S.No.	VARIABLE	T-STATISTIC		LAG
		At Level	At First/Second Difference	
1.	GDP	-2.826789	3.625743 (First)	0
2.	MARKET CAPITALIZATION	-2.59277	4.27758 (First)	0
3.	TURNOVER	-1.76249	-5.866522 (First)	0
4.	NEW ISSUES	-2.893205	-4.120705 (First)	1
5.	PRIVATE & GOVERNMENT MOBILIZATION	-2.37036	-6.001318 (Second)	2

Source: Computed

From the above table, it is evident that GDP, Market Capitalization, Turnover, New Issues are stationery at first difference while Private and Government Deposits Mobilization as represented by PGMOB attained stationery after it is differentiated twice. The hypothesis of non stationerity is rejected. Further, the table also portrays the value of lag length on the basis of Schwatz criterion.

Table 2 presents the results of Johansen test of co integration for the variables under study

Table 2: Estimates of Unrestricted Co-integration Rank Test (Trace)

S.No.	No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
1.	None *	0.999408	139.6675	47.85613	0
2.	At most 1 *	0.848624	43.04688	29.79707	0.0009
3.	At most 2 *	0.758075	18.50304	15.49471	0.0171
4.	At most 3	0.004174	0.054374	3.841466	0.8156

Source: Computed

The result for Trace Test indicates two co integrating equations at 0.05 level. The co integration equation is given as under:

$$\text{GDP} = 0.11646 \text{ MKT CAP} + 17.36493 \text{ NI} - 0.186843 \text{ TOVER}$$

(0.00122) (0.77476) (0.01014)

As per the equation, the coefficient of MKTCAP, NI are positive while the coefficient of TOVER bears a negative sign. This negative sign shows the existence of inverse relationship between GDP and TOVER. The equation helps to derive the inference that an increase of 0.1164 will occur in GDP with a unit increase in MKTCAP and a unit increase in NI will lead to an increase of 17.364 in GDP.

Thus, apart from TOVER, all the other exogenous variables under study tend to have a positive impact on GDP. The results of the standard error test affirm the notion that the variables chosen for the study are relatively significant in affecting economic growth. Coming on to the results of Granger Causality test as presented in Table 3, much inference can be drawn on the direction of causality.

Table 3: Estimates of Granger Causality Test

No	NULL HYPOTHESES	OBSERVATIONS	F-STATISTIC	PROBABILITY
	MKTCAP does not Granger Cause GDP	13	5.44089	0.023256
	GDP does not Granger Cause MKTCAP		0.42632	0.66691
	TOVER does not Granger Cause GDP	13	5.78039	0.01058
	GDP does not Granger Cause TOVER		4.1478	0.026491
	NI does not Granger Cause GDP	13	0.13126	0.87884
	GDP does not Granger Cause NI		1.19059	0.35267
	PGMOB does not Granger Cause GDP	13	0.23408	0.79653
	GDP does not Granger Cause PGMOB		3.39558	0.08558

Source: Computed

There exists unidirectional relationship between MKTCAP and GDP but not vice versa. As the probability in the former case is 0.023 and hence null hypothesis is rejected i.e. alternate hypothesis that MKTCAP granger causes GDP.

On the other hand, in the respective cases of NI and PGMOB, one can say that there is absence of causality because the measure of probability is more than 0.05 where as in the case of TOVER, there is a situation of bidirectional relationship between TOVER and GDP. Thus, out of four representative variables of capital market, two of them show absence of causation while the other two variables show existence of causality; though of varied kind.

CONCLUSION

The study is a genuine attempt to discover the impact of Indian Capital Market activities on the economic growth in India. The analysis reveals that the variables under study are co-integrated there by indicating the existence of long term relationship amongst them. After testing the variables on the parameter of unit root, the variables are found to be stationery at first difference (except for the variable code PGMOB). Further, the results of the study pinpoint that there exists a causal relationship between stock market and economic growth. Out of the variables under question, the variable codes NI & PGMOB are seen having no causality but the other two representations of the capital market viz. TOVER & MKTCAP hold causality. Further, the analysis of the equation as given by Johansen test of co integration, it is seen that NI & MKTCAP have a positive impact on the growth of the economy while the NI is negatively signed.

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