

# Asian Resonance

## The Behaviour of Stock Market in India

### Abstract

Market efficiency has always been the concern of market regulators, investors, and researchers. Market efficiency testes showed different and mixed evidences in the developing markets. The Present study deals with the testing of weak form of efficiency and the efficient market hypotension on indian stock market in the form of random walk, during the period of 2007-2008 based on closing prices and daily returns on the indian stock market three representative indices: S&P CNX 500, CNX 100 and BSF 200.

The paper discusses and examines three types of anomalies namely Monday Effect, Friday Effect and Day of the week Effect. The findings of this study bring out that none of the above anomalies exist in the indian stock market as information ally efficient.

**Keywords:** Stock Market, Efficiency, Indian Stock Market, Financial Market, Market Development

### Introduction

There had been important theoretical developments relating the development of financial markets and economic growth of the country. Since the stock market has been the principal agency for the development of the capital market, It is worthwhile to study the theoretical underpinnings of the relationship and establishing empirical inference of the study. The object of this study is to study the behavior of stock market in juxtaposition with pre liberalization and post liberalization period. The paper has been divided into four parts. The first part relates to the comparison of the stock market and banks as providers of liquidity. The second part relates to the stock market development studies relating to India. The third part relates to the nature of data basis, The fourth part discusses the role of flow of funds from abroad. Lastly the volatility of the stock market is discussed in the Indian context.

Theoretically Cho (1986) has applied the theory of capital rationing to the activities of stock market. The basic argument in favor of stock markets as efficient allocator is that there is perfect information in the stock market as compared to other credit allocating agencies such as banks and also there is no moral hazard involved in the stock market as compared with banks. Thus sound development is an essential condition for financial liberalization and development of economy in a country. World Bank research group has done the first comprehensive study relating the role of stock market and the growth of the economy by Lavine and other scholars. The important conclusions of this study are as following:

1. The development of financial intermediaries and stock market is positively related if a cross sectional analysis is made.
2. While in developed countries the development of stock market replaces is facilitated. debt market with equity market, in the developing countries, the debt market is facilitated.
3. The development of stock market may be regarded as a contributor to the long run growth.
4. The growth of financial intermediaries and stock market are complementary to each other.

There are two channels through which financial functions may affect the economic growth These channels are capital accumulation and technological innovations. The important financial functions are to mobilize savings, to allocate resources, to facilitate risk management, to monitor managers and to facilitate the smooth exchange of goods and services.

Levin has pointed out that banks are traditionally ameliorating information acquisition costs and stock markets may be offering vehicles for trading risks. But these functions may overlap.

### Review of Literature

The studies with reference to India were done mainly by Nagraj (1996) and Singh (1998). The basic conclusion that emerges from these studies is that with the growth of stock market in India the savings in

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general and financial savings in particular have not increased. The development of the stock market activities in eighties also support these conclusions, wherein there was much hue and cry in the stock market, but total savings volume did not increase. What is more startling is the conclusion reached by these two studies is that the proportion of financial savings has remained unchanged.

1. This implies that shareholders in general have reduced the volume of their bank savings. This may have important bearings on portfolio adjustment, which is an interesting study in itself but this concludes that portfolio selection in financial savings is scanty related with economic growth.
2. The second important conclusion of these studies is that the corporate sector has in general relied on external finance (instead of ploughing back the profits) which may be result of poor profitability of the corporate sector. Thus the correlation between the annual growth rate of fixed capital formation and the external finance become statistically significant.
3. The real value added in the corporate manufacturing sector has lesser growth rate than the registered manufacturing sector implying that firms which were outside the orbit of stock market were growing faster.
4. There was a secular fall in profitability of corporate firms as a result of in small-scale sector.

More competition due to internal liberalization and product improvement on real variables. The studies clearly indicate that the growth of stock market had little impact on real variables. But this conclusion must be taken with a pinch of salt. Because in another study done by Shah and Thomas (1999) a different view emerges.

The basic thrust of their argument is based on the comparison of banking sector versus the stock market. Their study is based on two parameters namely the minimization of the transaction cost and the maximization of information processing. To these authors, the stock market has a better institutional set up than the banking sector. Thus the stock market can contribute to the real growth of the economy. They can use small savings and meager resources in more efficient ways. They also concluded that the flow of foreign funds have a positive impact on the real economy via lowering the cost of capital and the assets.

Why the banking sector has a disadvantage in information processing in Indian context is not difficult to understand. The banking sector in India is controlled by government in term of finance, it has been adopting close door policy till recently and due to larger holdings of government securities it had high reserve ratio with lower yields. It may even be added that the banking sector was so far in shackles and acted as a schoolboy under the headship of RBI That it has acted as subservient to the wishes of the central bank which The other point and in turn was more prompt in managing the ever-increasing fiscal deficit than following an independent monetary policy. Thus

even if the banking sector had valuable pieces of information, it went in vain.

The other point raised by learned authors against the banking sector was related with transaction costs. The public sector banks in general had high cost ratios and a strong trade union, which was not in tandem with principals of prudential banking. It lacked automation and lagged behind in adopting modern means of communication. The result was catastrophic in terms of profitability. If the NPA is added to the volley of arguments it may be said that the overhauling of the banking structure of India was needed. Thus the comparison between the stock market and the banking system in India is difficult to make. It has been rightly pointed out by Nagaishi that the transaction costs of the stock market has dropped considerably after 1993 The key lies in adopting information technology and not in the system itself. But the banking sector in general has to use information technology on a vast scale and penetrate the technology into the rural markets.

### **Salient Features of the Indian Data**

It may be pointed out that there is no gainsay in comparing the absolute figures in rupee terms because the figures are nominal in nature. Instead we may use financial assets as reported in Report on Currency and Finance of RBI for various years in percentage terms. The figures are highly volatile in nature and the investment in shares and debentures, which was as low as 3.4 percent out of the total financial assets of the household sector. This increased to 8.4 percent in 1990-91 and it was up to 10.2 percent till 1992-93. Then the share of this portfolio declined to 3.8 percent in 1996-97. Both the rises in this last decade and subsequent fall may better be attributed to sharp changes in the value of stock exchange index rather than change in the investment habits of the people. Thus the conclusion drawn in the beginning seems to be correct that the development in the stock exchange has not changed the saving habit of the households and to that extent it has not contributed to the growth process of the Indian economy. In the same period the gross savings of the household sector in the form of financial assets to the GDP has increased from 9.8 percent to 12.1 percent. The major gainers are non-banking deposits and LIC and claims on government. What is more revealing is the fact in the same period the banking deposits as percentage of financial assets of the household sector has also declined from 45.8 percent in 1980-81 to 38.2 percent in 1996-97. Thus the savings were in general diverted to other sectors and portfolios.

I need not to point out that in the same period the Indian economy grew by leaps and bounds considering the simple and yet impressive fact that we have broken the barrier of Hindu Growth Rate of less than three percent to some six percent per annum. There is almost no correlation in the economic growth and the investment in stock market.

### **The contribution of Foreign Inflows**

The contribution of foreign inflows has gained importance recently. One of the arguments given in favor of liberalization was that it would

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provide more capital to the corporate sector. The net foreign investment was 103 US million dollar in 1990-91, it increased to 557 and then shoot up to 4235 in 1993-94 increased to 5838 in 1996-97 but it declined to 2401 US million dollars. It is interesting to note that China in spite of different ideological background invites fifteen to twenty times more FDI. The India's share is less than two percent in the developing world. It is even less than what is invested in Thailand, Mexico or Korea. Also the foreign portfolio inflows as a percentage of GDP are less than two percent though they were almost negligible before liberalization. But considering the low base of foreign investment its importance has increased recently.

In the Indian context the economic growth is not dependent on foreign investment directly. Because after 1993 we have considerable reserves of foreign exchange, which are increasing till now. Thus our economic growth is not handicapped by the shortage of foreign exchange. Further there are some agencies which can provide loan at reasonable rates of interest.

Nugaishi "It is no exaggeration to say that the possibility of sustained economic growth driven by FPI is by no means a reality in the Indian context" has rightly pointed it out. Also there is a related question of short term and long term capital flows. The question is very significant in the

Indian context because in the crisis of 1991 the short term deposits fled such as Mexico, Korea and Thailand there was sharp decline in the inflow of rapidly. It has been called 'Hot money' due to its volatile nature. In countries such as Mexico, Korea and Thailand there was sharp decline in the inflow of foreign short term capital inflow but in the Indian context the percentage of short term capital as a percentage of GDP has been less than one percent except in some years Yet it was not more than 2.15 percent of GDP.

But there is no such thing as safe limit because it is psychological in nature and therefore short-term capital inflows should in general be avoided to restore investor's confidence. Some studies point out that the safe limit is 4 to 5 percent but even this may cause a crisis. Thus a strict monitoring and comfortable foreign exchange reserves are the answer. It may be interesting to note that the standard deviation of short-term capital inflows was less than that of other countries but this matter requires further probe. But a long and careful investigation is required including the built in safeguards so that the BOP position does not endanger country's stability and growth.

#### Stock Market and Financial Intermediaries

As mentioned above The World Bank research group has done comprehensive study on the relationship between stock market and economic growth. The main findings of these studies are as follows:

A. The stock market development is positively associated with economic growth. This is evident from the cross-country growth regressions.

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B. The level of stock market development is positively associated with the development of financial intermediaries.

C. There is basic difference in the developing and developed countries in matter of debt finance. While stock market development induces substitution of equity finance for debt finance in the developed countries it is not so in developing countries.

D. Thus there is complementarity hypothesis of simultaneous development of stock market and financial institutions.

This observation as a result of World Bank research finding has been challenged by Nagaishi. He concludes that though in the Indian case both the financial intermediaries and stock market grew simultaneously it is challenged by the fact that bank credit to the commercial sector has no positive correlation with the indicators of stock market development In fact there is substitution between the stock market and financial intermediaries. Thus this does not lead to the growth of the economy.

#### Recent Developments in Stock Market

As to the relationship between Stock market and financial intermediaries, the following data:

In the Table No.1 the data for BSE Sensex and the market Capitalization are presented. The table shows that while BSE sensex has increased 26 times, the market capitalization has increased by 134 times. This shows that there had been heavy capitalization in this period in the stock market.

**Table 1: BSE Sensex and Market Capitalization**

Year	BSE Sensex	Market capitalization in Billions of Rs.
1990-91	1049.53	908.36
1991-92	1879.51	3233.63
1992-93	2895.67	1881.46
1993-94	2898.69	3680.71
1994-95	3974.91	4354.81
1995-96	3288.68	5264.76
1996-97	3469.24	4639.15
1997-98	3812.86	5603.25
1998-99	3294.78	5453.61
1999-00	4658.63	9128.42
2000-01	4269.69	5715.53
2001-02	3331.95	6122.24
2002-03	3206.29	5721.98
2003-04	4492.19	12012.07
2004-05	5740.99	16984.28
2005-06	8278.55	30221.91
2006-07	12277.33	35450.41
2007-08	16568.89	51380.15
2008-09	12365.55	30860.76
2009-10	15585.21	61656.20
2010-11	18605.18	68390.84
2011-12	17422.88	62149.12
2012-13	18202.10	63878.87
2013-14	20120.12	74152.96
2014-15	26556.53	101492.90
2015-16	26322.10	94753.28
2016-17	27338.22	121545.25

Source : Handbook Of Statistics of Indian Economy RBI 2017

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The regression equation for the stipulated data is as following. Here market capitalization has

been taken as independent and BSE Sensex has been taken as dependent variable.

**Model : OLS, using observations 1990-2016 (T = 27)**

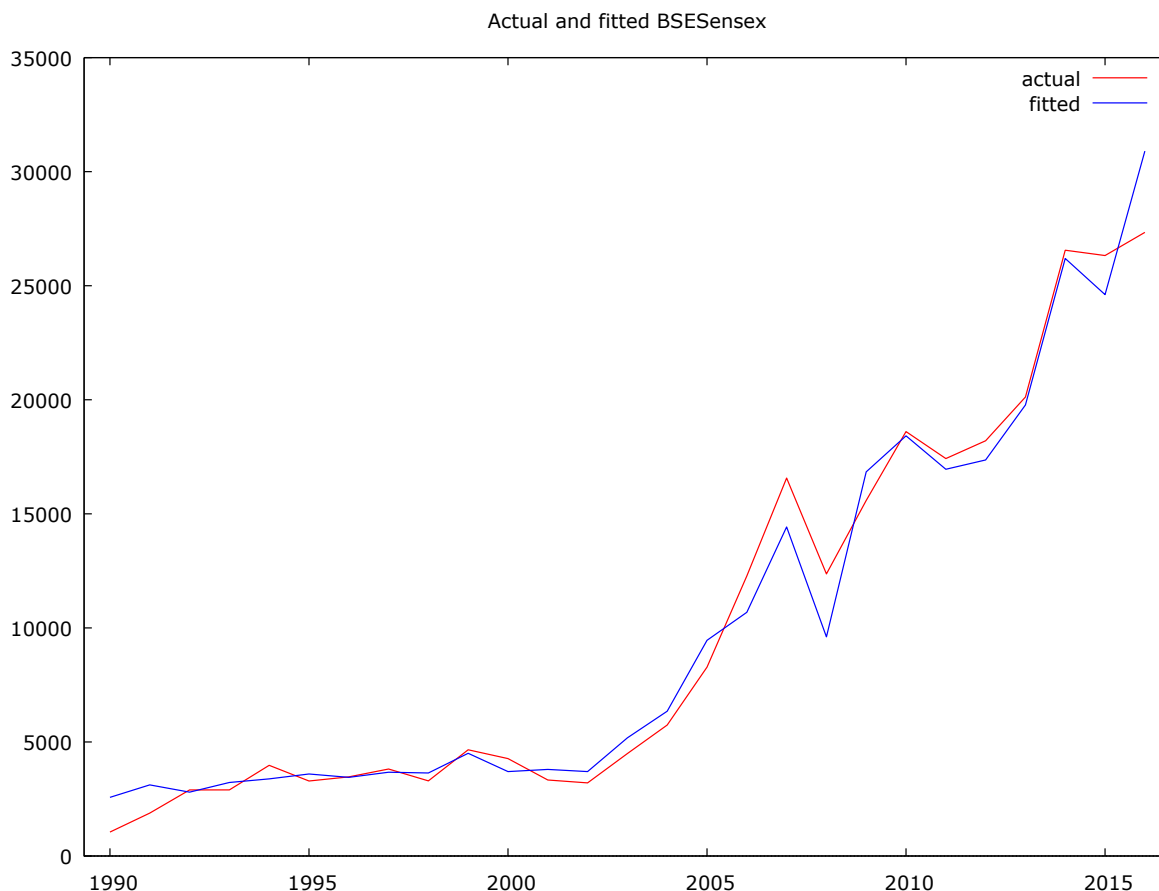
**Dependent variable: BSE Sensex**

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	2358.74	336.187	7.016	<0.0001	***
Market Capitalization	0.234843	0.00698685	33.61	<0.0001	***

Mean dependent var	10070.60	S.D. dependent var	8509.240
Sum squared resid	40756668	S.E. of regression	1276.819
R-squared	0.978351	Adjusted R-squared	0.977485
F(1, 25)	1129.772	P-value(F)	2.49e-22
Log-likelihood	-230.3798	Akaike criterion	464.7596
Schwarz criterion	467.3513	Hannan-Quinn	465.5302
rho	0.070291	Durbin-Watson	1.534617

The estimated equation has been represented by following Graph indication actual and fitted data.

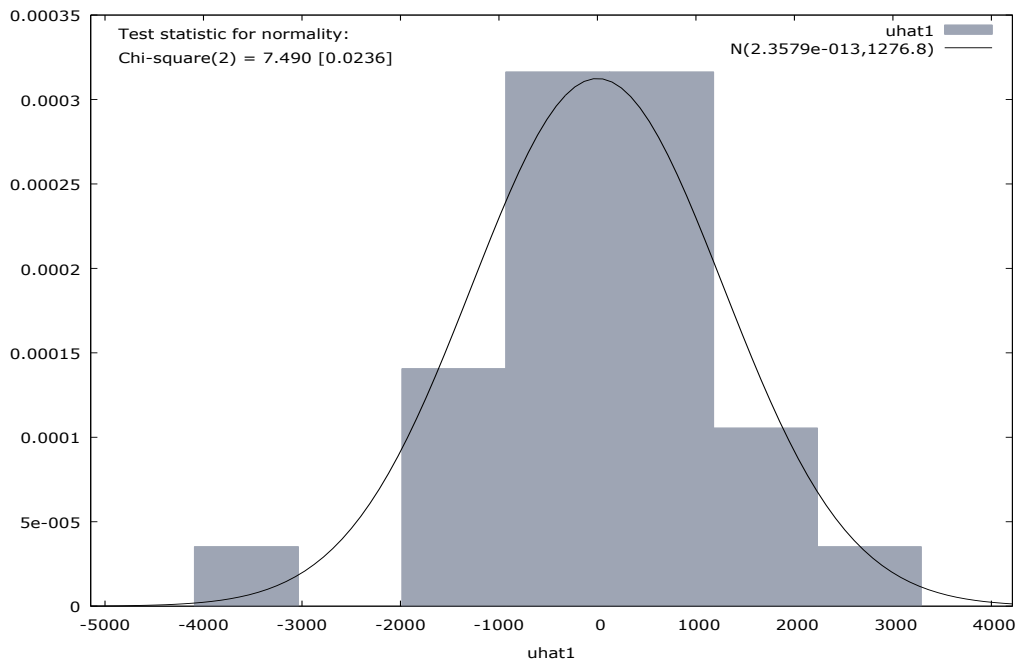
**Graph 1: Actual and Estimated BSE Index**



The Graph 1 shows that the actual and fitted values are quite close. Thus the market capitalization is good predictor of BSE sensex.

In Graph 2 below the normality test of above data has been represented. This shows near normal distribution except for the peak data.

Graph 2: Test for Normality of the fitted data



Graph 3: The India's Market Capitalization to GDP ratio



The overall conclusion is that the stock market in India cannot be compared with developed countries. There are institutional differences. While India has a very large population, people are afraid to invest in the equity market due to the volatile nature of the stock market. The India's Market Capitalization to GDP ratio as shown below shows volatility ranging between 52% to 146%.

Thus, much capital can be invested if institutions play a larger role.

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