

Impact of Capital market reforms on the Indian Stock Market since Globalisation

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Abstract: *The capital market reforms and its relationship with the Indian stock market is of great significance from the point of view of growth and development of the Indian economy. Pre- globalisation capital market reforms did not have major positive impacts on the volatility, liquidity and various other economic indicators of the stock market. However, the post- globalisation reforms led to a marked improvement for the stock market development which has led to the economic growth in India and the relationship between them have proved to be long term as well as beneficial to the Indian economy.*

Key words: *capital markets, globalisation, liquidity, market capitalisation, reforms, volatility*

I. Introduction

Capital market is a market where buyers and sellers engage in trade of financial securities like bonds, stocks, etc. The buying/selling is undertaken by participants such as individuals and institutions. Capital markets help channelize surplus funds from savers to institutions which then invest them into productive use.

After Independence the capital market in India progressed remarkably. The first organised stock exchange was established in India at Bombay in 1887. When the Securities Contracts (Regulation) Act 1956 was passed, only 7 Stock exchanges i.e. Mumbai, Ahmedabad, Kolkata, Chennai, Delhi, Hyderabad and Indore received recognition. By the end of March 2004, the number of stock exchanges increased to 23.

After liberalisation policies of 1991 and the abolition of capital issues control with effect from May 29 1992, the primary market got a tremendous boost with new Capital Issues by Private Sector, increase in issue of Public Sector Bonds and Mutual Funds. Financial Intermediaries are the latest trend in Indian Capital Market and play an important role in field of venture capital, credit rating etc.

There have been a large number of recent reforms introduced in the Indian Capital Market and the Government has taken several measures to develop capital market in post-reform period, with which the capital market reached new heights. Some of the important measures including the setting up of the Securities and Exchange Board of India (SEBI) and National Stock Exchange (NSE), Dematerialisation of Shares, Screen Based Trading, Investor Protection and Rolling Settlement. Setting up of The Clearing Corporation of India Limited (CCIL) and The National Securities Clearing Corporation Limited (NSCL) as well as Trading in Central Government Securities, setting up of Credit Rating Agencies, Accessing Global Funds Market etc. changed the face of the Indian stock market and triggered its growth and expansion.

The paper aims to identify all the capital market reforms since globalisation (1991) in India and seeks to determine the impact of these reforms and the direction of the impact of these reforms (viz. positive or negative) on the efficiency, volatility, liquidity and market capitalization in context to the Indian stock market.

Since globalisation, the Government has introduced a variety of capital market reforms with a vision to improve the working and size of the Indian stock market and a mission to attribute the positive implementation of these reforms to the increased growth of the Indian economy. However, all the reforms have not been able to successfully fulfil the purpose with which they were initiated and implemented in the first place. Thus the problem which needs specific attention is that whether the reforms have truly led to the increased growth of the Indian economy or is the change attributed to various other factors which affect the functioning of the stock market.

II. Review Of Literature

Mohan (2005) conducted a research to evaluate the financial system and its performance after the reforms. He indicates that most of the reforms took place in the securities market, with a high SLR ratio increasing its market and steps to increase the transparency of the market were taken as well. The insurance sector, mutual funds welcomed new participants and the Institutional Investors were also welcomed and they enjoy capital convertibility. Ramaratnam and Jayaraman (2012) have investigated the changes in the capital market with respect to industry, size region, sector wise classification of equity capital, and foreign investment inflows in the stock market. Reforms have attracted foreign and domestic institutional investors. The foreign investment inflow also had a drastic change in these years. Therefore, the changes brought about by globalization have mobilized funds for investment and created a link between the investors and industrialists.

Goel and Gupta (2011) study the impact of globalization and its reforms on stock market, through measures of stock market size, liquidity and volatility. They used ratio analysis technique and found that MCR and liquidity ratios are increasing whereas volatility is said to decrease annually. The correlation between turnover ratio and value traded ratio is as high as 0.8 whereas the other measures don't show much correlation. Thus, the primary and secondary markets have grown due to reforms since 1991.

III. Research Methodology

3.1. Objectives of the research

The objectives are:

- To identify the reforms of the Indian government on the Indian capital market since 1991
- To determine the impact of these reforms on the Indian capital market
- To determine if the reforms had a positive or negative impact on the Indian economy through the Indian capital market.

3.2. Research period

The research period is 1991-2012. Data about the reforms, market size, volatility and liquidity obtained from the Handbook of Statistics on the Indian Securities Market, Handbook of Statistics on Indian Economy, and Handbook of Statistics on Indian Securities market) along with various research journals, periodicals and websites (SEBI Annual Report). Questionnaire and Interview method was also used which helped provide the direct views, opinions and feedback regarding the economic scenario since the implementation of the reforms.

3.3. Operational Definitions

3.3.1 Capital market

Market for lending and borrowing of medium and long term reserves where interest for long term funds originates from industry, exchange, agriculture and government. The supply of funds originates from individual savers, corporate funds, banks, insurance agencies, specialised financial institutions and government.

3.3.2 Market capitalisation

Market capitalisation (market cap) is the aggregate valuation of the company based on its current share price and total number of outstanding stocks.

The formula being:

Market Capitalization = Current Stock Price x Shares Outstanding

Market capitalization mirrors the hypothetical expense of purchasing the majority of an organization's shares, however more often than not will be not what the organization could be bought for in a typical merger exchange. To gauge what it would cost for a financial specialist to purchase an organization by and large, the enterprise value calculation is more proper.

Along these lines market capitalization is a superior measure of size than worth. That is, business sector capitalization is not the same as business quality, which can for the most part just be appointed when the organization is really sold.

3.3.3 Volatility

Volatility is a measure for variation of price of a financial instrument over time. Historic volatility is derived from time series of past market prices. An implied volatility is derived from the market price of a market traded derivative (in particular an option).

3.3.4 Liquidity

Liquidity is the term used to describe how easy it is to convert assets to cash. The most liquid asset, and what everything else is compared to, is cash. This is because it can always be used easily and immediately. In the market, liquidity has a somewhat diverse significance, albeit still tied to how effortlessly resources, for this situation, shares of stock, can be changed over to money.

The business sector for a stock is said to be fluid if the shares can be quickly sold and the act of selling has little effect on the stock's cost. By and large, this translates to where the shares are exchanged and the level of premium that financial specialists have in the organization. Company stock traded on the significant trades can generally be viewed as fluid. Regularly, nearly 1% of the float trade hands day by day, demonstrating a high level of enthusiasm for the stock. Then again, company organization stock exchanged on the pink sheets or over the counter are frequently non-fluid, with not very many, even zero, shares exchanged every day.

IV. Data Analysis

Table 1: Market Capitalisation

Year	Market Capitalisation (Crore)	MCR %
1992-93	188146	25.1
1993-94	368071	42.8
1994-95	435481	46.3
1995-96	526476	47.5
1996-97	463915	36.9
1997-98	560325	41.4
1998-99	545361	35.6
1999-00	912842	47.1
2000-01	571553	27.4
2001-02	612224	26.9
2002-03	572198	23.2
2003-04	1210207	43.5
2004-05	1698428	54.7
2005-06	3022191	84.4
2006-07	3545041	85.5
2007-08	5138014	109.5
2008-09	3086075	55.3
2009-10	6165619	95.5
2010-11	6839084	87.7
2011-12	6214941	69.2

Market Capitalisation has risen by 30 times over this period. 1990s saw a large increase in market capitalisation mainly due to greater participation by individuals and institutional investors in the capital market. Foreign institutional investors (FII) have been allowed to invest in the Indian capital market since September 1992. The highest contribution to GDP was in 2007-08 with MCR being 109.5%.

Table 2: Value Traded Ratio and Turnover Ratio

Year	Total value traded (crores)	VTR	% change in value traded	Turnover Ratio	Market Cap (crore)
1992-93	45696	6.1	-36.333491	24.2875214	188146
1993-94	84536	9.8	84.9964986	22.9673079	368071
1994-95	67749	6.7	-19.857812	15.5572803	435481
1995-96	50064	4.2	-26.103706	9.50926538	526476
1996-97	124190	9.1	148.06248	26.7699902	463915
1997-98	207113	13.6	66.7710766	36.9630125	560325
1998-99	310750	17.8	50.0388677	56.9806055	545361
1999-00	686428	35.4	120.893966	75.196803	912842
2000-01	1000032	47.9	45.6863648	174.967501	571553
2001-02	307292	13.5	-69.271783	50.1927399	612224
2002-03	314073	12.7	2.20669591	54.8888671	572198
2003-04	503053	18.2	60.1707246	41.567517	1210207
2004-05	518715	16	3.11338964	30.5408884	1698428
2005-06	816074	22.1	57.3260847	27.0027275	3022191
2006-07	956185	22.3	17.1689087	26.9724666	3545041
2007-08	1578857	31.7	65.1204526	30.7289353	5138014
2008-09	1100074	19.7	-30.324659	35.6463793	3086075
2009-10	1378809	21	25.3378409	22.3628641	6165619
2010-11	1105027	15.2	-19.856412	16.1575293	6839084
2011-12	2810893	8	154.373242	45.2279917	6214941

Total value traded has risen by more than 60 times from 1992 to 2012. It doubled from 1990-91 to 1991-92 and fell by 36% in 1992-1993. The total value traded rises in the late 1990s and falls sharply in 2001. The Value traded ratio has moved from 6.1% at the time of liberalization to 48% in 2000, which is the highest in all these years. It fluctuates from 2001 onwards. There were maximum activities in the market during 2000-2001. The turnover ratio has increased from 24% in 1992 to 45% in 2012. The highest turnover ratio is 175% which occurred in 2000-2001, the same period in which VTR was at its maximum. This shows high correlation between the two measures.

Table 3: Volatility

Year	Volatility (BSE Sensex)
1992	3.3
1993	1.8
1994	1.4
1995	1.3
1996	1.5
1997	1.6
1998	1.9
1999	1.8
2000	2.2
2001	1.7
2002	1.1
2003	1.2
2004	1.6
2005	1.1
2006	1.6
2007	1.5
2008	2.8
2009	2.2
2010	1
2011	1.3
2012	1.3

*Volatility is the standard deviation of daily logarithmic returns for the respective period.

Source: BSE

The average volatility over this period is 1.61%. The volatility is 3.3 at the beginning of the period. This high volatility may be due to balance of payments problems and the changes due to initiation of liberalization. The data does not show any significant pattern in volatility with respect to increase or decrease on a year to year basis. But, if we divide the years into sub groups, the data does show decrease from one sub group to the next (Goel & Gupta, 2011).

Table 5: Pre and Post Globalisation Market Capitalisation

Pre Liberalisation	Market Cap (crores)	Post Liberalisation	Market Cap (crores)
YEAR	X ₁	YEAR	X ₂
1982-83	9769	1992-93	188146
1983-84	10219	1993-94	368071
1984-85	20378	1994-95	435481
1985-86	21636	1995-96	526476
1986-87	25937	1996-97	463915
1987-88	45519	1997-98	560325
1988-89	54560	1998-99	545361
1989-90	65206	1999-00	912842
1990-91	90836	2000-01	571553
1991-92	323363	2001-02	612224
Average	66742.3		518439.4
Standard Deviation	93882.9216		185972.8689

Hypothesis has been framed to test whether stock market development was affected by the reforms initiated in the 1990s. Due to inaccessibility of data regarding pre liberalisation liquidity and volatility, only market size has been considered.

- T test has been used to test the hypothesis as sample size is 20(years).
- Critical values have been considered for 5% L.O.S (level of significance)
- Market Capitalisation is used to represent market size.

Meaning of notations used:

n_1 = sample size of pre liberalisation period (x_1)

n_2 = sample size of post liberalisation period (x_2)

s = sample standard deviation

s_1 = sample SD of x_1 values

s_2 = sample SD of x_2 values

\bar{x}_1 = mean of x_1 values

\bar{x}_2 = mean of x_2 values

d.f = degrees of freedom

In notation form:

$H_0: \mu_1 = \mu_2$

$H_1: \mu_1 < \mu_2$ (Left tailed test)

Finding critical value (t_{tab})

$n_1 = 10$ $n_2 = 10$

d.f = $n_1 + n_2 - 2$
 = $10 + 10 - 2$

∴ d.f = 18

L.O.S = 5%

Therefore, critical value

$t_{tab} = -1.734$ (from t-table)

Test statistic t_{obs} is calculated as follows:

$$t_{obs} = \frac{\bar{x}_1 - \bar{x}_2}{s \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Where, $s = \sqrt{\frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_2 - 2}}$

$$s = \sqrt{\frac{10 (93882.92)^2 + 10 (186972.86)^2}{10 + 10 - 2}}$$

∴ $s = 15527.369972$

$$t_{obs} = \frac{66742.3 - 518439.4}{15527.36 \sqrt{\frac{1}{10} + \frac{1}{10}}}$$

$-6.5 < -1.734$

∴ $t_{obs} = -6.5$

∴ Market Capitalisation for post liberalisation is more than pre liberalisation period. Therefore, market size has increased due to reforms post liberalisation.

Primary data is collected through questionnaire and personal interview methods.

V. CONCLUSION

Our research concludes that, there has been significant improvement in the stock market after globalisation and the establishment of SEBI and its reforms. Stock market development and economic development are inter-related and have a positive impact on each other.

- Liberalisation of the securities market has contributed to its development and also towards the Indian Economy.
- Market Capitalisation Ratio, Total Value Traded Ratio and Turnover Ratio have increased tremendously, post liberalisation. Over the period 1992-2012, the average VTR is 17.55% and Turnover ratio is 41.22%.
- Correlation coefficient for VTR and Turnover Ratio is 0.8 (Goel & Gupta, 2011). The market size and volatility also shows a correlation of -0.4. The liquidity indicators are have high positive correlation.
- Volatility does not show any particular trend but it's at its highest (3.3) at the beginning of the period. This can be attributed to the fluctuations arising from initiation of Foreign Investment Inflows in 1992. Some studies say that volatility infact, increases due to liberalisation while others prove the opposite. Thus volatility shows mixed trends.
- FII has affected market size and liquidity but doesn't have a significant impact on volatility. There was outflow of FPI during 1998-89 and 2008-09. FDI is preferred to FPI and they both show positive correlation towards Sensex and Nifty. FDI however, has a much higher correlation.
- ADRs/GDRs are the highest during 2007-08, at \$6645 million. They were \$240 million in 1992 but have gone down to \$187 in 2012. There is both increasing and decreasing trends over the period.
- The hypothesis tested shows significant increase in market capitalisation after liberalisation. Other studies conducted have proven hypothesis that stock market development causes economic growth (Agarwalla & Tuteja, 2007) and there exists a long term relationship between them.

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