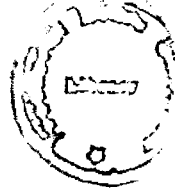


**FOREIGN INSTITUTIONAL INVESTMENTS AND
PERFORMANCE OF INDIAN STOCK MARKETS
FROM 1991 TO 1996**



*Dissertation submitted to the Jawaharlal Nehru University
in partial fulfillment of the requirements for
the award of the Degree of*

MASTER OF PHILOSOPHY

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21st. July, 1997

CERTIFICATE



This is to certify that this dissertation entitled **FOREIGN INSTITUTIONAL INVESTMENTS AND PERFORMANCE OF INDIAN STOCK MARKETS FROM 1991 TO 1996** submitted by *Suman Saurav Sahoo*, in partial fulfilment of the requirements for the award of degree of **Master of Philosophy (M.Phil.)** of this University, is his original work and has not been submitted for the award of any other degree of this University or of any other University.

We recommend that this dissertation be placed before the examiners for evaluation.

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CHAIRPERSON

*DEDICATED TO MY
BELOVED NATION*

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Suman Saurav Sahoo
(SUMAN SAURAV SAHOO)

INTRODUCTION

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The debt crisis in first half of the 1980s had left many developing countries with a miserable balance of payments position. In order to tide over the situation, they had to rely heavily on external borrowing. Much of the lending to developing countries had taken the form of official lending from international financial institutions, with stringent conditionalities attached to them. As a part of these conditionalities, the developing countries had to adjust their policies and institutions so as to re-establish macroeconomic balances and transit to more open economic regime. In the second half of last decade, private capital inflows to these countries increased sharply and thus, reduced their dependence on external debts. Much of this new capital inflow came in the form of portfolio investments. These portfolio investment flows, chiefly Foreign Institutional investments(FIIs), have increased quite sharply since 1989. The share of net equity flows to developing countries had increased from almost 6 percent to over 9 percent of total net flows from 1989 to 1992. As a result, the recent years have seen FIIs assuming a significant role in the emerging stock markets. Portfolio investment are likely to be an increasingly important source of finance for developing countries in the coming years.

The programmes of stabilisation and structural adjustment started in India in the year 1991. Since then, India has been resorting to delicensing privatisation, etc at the behest of IMF and World Bank. As a part of these measures, norms relating

to foreign direct investments were relaxed in 1991. But, the actual flow of such investments has not increase substantially. So, the government of India decided to allow portfolio investments. An all important policy decision, in this regard, was taken in 1992, which changed the entire structure of our capital market. FIIs were allowed access to Indian markets and domestic firm were allowed to raise funds abroad through GDRs and ECBs, with some restrictions. It was believed that the presence of FIIs in the domestic market would enhance its functional efficiency. Moreover, FII investment would add to our foreign exchange reserves and meet the resource scarcity faced by our industries.

FII investments have picked up remarkably in recent years. With financial assets at over Rs. 30,000 crores and a clout no less than domestic financial institutions ,they have started to dominate the market. They seem to have become the new force driving domestic stock markets with as much as 30 percent of the equity stock in a company allowed to be collectively held by them.

The integration of domestic markets to global markets have made them sensitive to developments in other markets. For instance, the instability in Mexican market had led to rapid FII withdrawals in 1995. Similarly the downslide of stock prices in Thailand and the handing over of Honkong to China have resulted in the pumping in of massive FII funds into the Indian market in the first half of this year. The share prices of specified groups also seem to follow the trend of FII investments.

FII investments or withdrawal have also affected our forex market. RBI has been intervening frequently to keep fluctuations in the exchange rate, arising out of changes in forex market due to the volatility of FII investment flows. Within limits large inflows in recent months has sent the RBI's forex reserves to mind unusually high levels. The repercussions of large inflows including exchange rate appreciation which adversely affects export growth or an uncomfortable rise in money supply.

A retrospective analysis of the developments in the capital market as well as in overall economy raises some questions about the prudence of allowing large FII investments into India. They are mentioned below;

1. Is our capital market as developed as is claimed in the studies by World Bank, IMF and international rating agencies. Are these studies trying to gloss over certain inherent limitations in order to induce our policy makers to opt for even greater liberalisation?
2. Have the liberalisation measures, undertaken so far, affected the interests of the small and big players in the stock markets? Have FIIs pipped the major players for greater control over the market?
3. Does the volatility in share prices have anything to do with the capricious investment behaviour of FIIs? Is the volatility of FII inflows affecting our foreign exchange reserves, exchange rate, money supply ? What has been RBI's role in checking the highly fluctuating rupee-dollar exchange rate?

This dissertation seeks to examine some of these issues. The entire study is divided into three different chapter dealing with these issues separately. A brief outline, of the procedures adopted in each chapter, is presented below.

An Outline of Chapters

The first chapter is subdivided into two sections. In the first section, we discuss some important indicators of stock market development. The point is to see how these indicator are used by the policy advisors of World Bank, IMF et al. to rank India among other emerging economies. We have attempted to bring out the fundamental shortcomings in the nature and construction of these indicators. In the next section we present a summary of the events which could have resulted in the gradual increase in FII investments in India during the initial years of capital market liberalisation. This section ends with a critical review of the discriminatory policy changes, with respect to FIIs, in the capital market since the year 1992-93.

The second chapter looks into the change in the roles of small and big players in our capital market since the advent of the FIIs. In this context, the household savings in financial instruments, such as shares and debentures, are analysed to see the impact of capital market reforms and FII investments on small investors. Next we analyse the change in activity of the big players in the capital market, such as the operations and investment decisions of UTI, in the four year period after

liberalisation. Our objective is to examine the relationship, if any, between such change of FII behaviour.

For convenience, the third chapter is sub-divided into two different sections. Beginning with a review of the existing literature on the effect of FII inflows on the domestic capital markets of emerging economies, the first section tries to establish empirically a relationship between share price volatility and FII investments. A brief survey of Indian capital markets during the 3 year period 1993 to 1996 is also presented. The survey emphasizes the events, which took place during these three years, resulting in rapid investment withdrawal of funds by FIIs. It seeks to relate the volatility of FII investments with that of that sensex for each month.

In the next section, we try to assess the effect of increasing flow of FIIs in recent months. An effort is made to establish a link between FII investments and foreign exchange reserves, exchange rate, RBI intervention, export growth as well as money supply. Finally we sum up some of the important conclusions arrived at in different chapters.

CHAPTER I

INDIAN CAPITAL MARKET: ITS POSITION AMONG OTHER EMERGING MARKETS

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Indian capital markets have been placed among the coveted group of fast improving emerging markets. Several indicators of measuring capital market development have been used from time to time in order to give credence to such a classification. However, the manner, in which they are used, fails to present a satisfactory assessment of our stock markets. The first section of this chapter tries to expose the inherent deficiencies in such an approach, with the help of some of the extensive literature in this regard.

The second section seeks to ascertain the factors, prevalent in the initial years of capital market liberalisation, which aroused interest in FIIs to invest in our markets. The section ends with a brief discussion on some discriminatory policy changes in our capital market with a view to attract larger portfolio investments.

SECTION 1: INDIA'S RANKING AMONG EMERGING MARKETS: A CRITIQUE OF THE DEVELOPMENT INDICATORS

The indicators used for the measurement of stock market development are briefly described below.

1. **Stock Market Size**: This can be known from the market capitalisation ratio, which is the value of listed shares divided by the country's Gross Domestic Product (GDP). It may be more than or less than one depending upon the size.

The number of listed companies serves as an additional measure of market size. However, the marginal differences in the number of listed companies for different countries are not true indicators of market size and only the extreme values are useful.

2. **Liquidity**: Generally, two related measures of market liquidity are used. First, the Turnover Ratio (TOR), which is the value of total share traded divided by market capitalisation. A higher turnover ratio implies a lower transaction cost and thus a more liquid market. It is important to note that a large stock market is not necessarily a liquid market. Even a large but inactive market will have a high market capitalisation ratio but a small TOR.

A second measure of market liquidity is the value traded ratio. It is equal to the total value of shares traded in the stock market divided by GDP. The value traded ratio importantly differs from the TOR. While the value traded ratio captures trading relative to the size of the economy, turnover ratio measures trading relative to the size of stock market. Thus, a small, liquid market will have a high turnover ratio but a small value

traded ratio. However, together with market capitalisation, these two ratios reflect both the size as well as liquidity position of the stock market.

3. **Concentration:** The degree of concentration in a stock market is measured by the share of a certain number of (say 'n') listed companies, which are the largest in terms of market capitalisation of total capitalisation.

4. **Volatility:** Volatility can be measured for many aspects of the stock market, but this study deals only with the share price volatility. It can be measured by a number of methods such as hourly percentage changes in share index, standard deviation and coefficient of variation. Although, the degree of volatility does not necessarily show the extent of stock market development, a less volatile market is said to be a more efficient market.

5. **Regulatory and Institutional Indicators:**

This indicator is based on various features of the institutional set up in the stock market and the economy such as the regular publishing of price-earning ratios, internationally acceptable accounting standards, investor protection laws, existence of credit rating institutions, disclosure requirements, etc.

The above mentioned are the five major indicators of stock market development. Several studies have used the indicators to rank countries according to

the performance of their respective stock markets. India too has been ranked in the list of emerging markets.

India's Position vis-a-vis Other Emerging Markets:

India has been rated high among emerging markets. According to International Finance Corporation, the market capitalisation, which was just \$ 6.6 billion in 1981 has gone up to \$ 98 billion in 1993 and India ranked 22nd in terms of market capitalisation among 40 countries including developed as well as emerging markets. The Centre for monitoring Indian Economy (CMIE) report on the capital market claims that the number of listed companies in India to was more than 10,000 by the end of 1996, which is the largest in the world. Moreover, an IMF study in 1994 stated that Indian stock markets represented 6% of emerging equity capitalisation and 9.7% of global equity market capitalisation.

Secondly, the regulatory and institutional setting in India confirms to the international standard and in this respect India has an edge over the other South Asian countries.

A study by A.D. Kunt and R. Levine has made an attempt to rank the countries according to the aforesaid indicators. By using the data for 44 developing and industrial countries from 1986 to 1993, the study has assigned ranks to the countries taking into account the five indicators used for measuring market development.

India's ranking for each indicator, among the average number of countries studied is shown in the table below;

India's rank	Market Cap/GDP	Total Value Traded / GDP	No. of Listed Companies	Turn over	Market concentration	Volatility	Institutional Development
India's rank	31	25	2	9	3	24	8
Ave. No. of Countries Stud-ied	41	41	43	41	26	37	20

The study found India to have a low market capitalisation to GDP ratio and a high turnover ratio, suggesting that India has a small stock market which is very active. Secondly, India has a low degree of concentration and high regulatory and institutional standard, as per the table above. However, the volatility has been very high which was 0.06% for 1986-93, calculated by 12 month rolling standard deviation.

R.A. Feldman and Manmohan S. Kumar in their study have mentioned several characteristics of mature, developed markets. Taking these attributes as yardsticks for

assessing the development of stock markets in developing countries, the emerging markets are divided into four broad groups. India has been placed in the group which comprises of markets with higher liquidity, wide variety of companies quoted and better opportunities for foreign investors. In India's case, the study shows that the equity market is smaller in relation to the economy as a whole, but the corporate sector relies increasingly on equity financing. However, India lags behind other competing as well as more advanced emerging markets which are less volatile and have internationally competitive levels of equity risk returns (i.e. risk adjusted returns relative to the short term money market interest rates).

All these studies have forecasted that the Indian stock markets are fast maturing and are about to move to the advanced stock markets category. This prediction rests on the viability of the indicators, which serves the basis. Although the indicators used for the purpose have their own merits, the measures, used to reflect different indicators, are not comprehensive and say little about the actual performance of markets. The short-comings can be discussed in the following manner.

On Market Capitalisation: Bombay Stock Exchange (BSE) can be taken as the representative of Indian stock markets since it accounts for 60% of total annual turnover. The growth of market capitalisation of companies listed on BSE was sluggish till mid 1980s. But the market capitalisation doubled from Rs. 9798 crores in 1984 to

Rs 20,783 crores in 1985 and from 1985 till 1991, the market capitalisation of BSE has grown at the annual rate of around 37 percent. The reasons for this substantial growth can be stated below.

(a) The primary market boom, which took place in BSE during 1980s.

(b) The large number of new listing such as listing of PSUs following their disinvestment & large number of issues by nationalised banks like SBI and other financial institutions could have resulted in such a leap in market capitalisation.

2. **On Concentration:** In the above studies, the number of maximum traded stocks has been taken to be only ten irrespective of the total number of companies listed. For India, the number of listed companies is very high and so for measuring concentration, the number of maximum traded stocks should also be more than ten. According to BSE sources, only 25 scrips accounted for 75% of overall trading business in 1988, which shows a high degree of concentration.

ON Liquidity: A measure of liquidity should encompass all costs associated with trading including time costs and certainty of finding a counterpart and settling the trade. Liquidity, which is the most important attribute of investor participation, is determined by the extent of investor participation. The higher the number of share holders, higher is the trading volumes and so is market liquidity. Indian stock markets have been

plagued by the lack of liquidity. Certain features, which have reduced liquidity, are discussed below.

(a) Over three-fourths of the market capitalisation in the Indian stock markets have been held by promoters and development financial institutions. This has reduced floating stocks to a very low level. Moreover, according to estimates by Punjab National Bank (PNB) in 1994, the holding period of securities, in Indian markets, is very long. Only 20 to 25% of individual share holders of a company normally transfer their holdings in a year.

(b) The physical transfer of shares in almost all cases of transaction and the unduly large settlement periods delay the trading process. The settlement systems in India, therefore, carry settlement risks.

(c) Although the number of listed companies in India is very high, estimatedly over half of these companies are very small in size and very thinly or barely traded according to a recent CMIE publication.

On Volatility: The Indian stock markets are found to be much more volatile in comparison to other emerging markets. In a study by Mohd. El-Erian and Manmohan S. Kumar (1995), the volatility, for the period 1989 to 1992, was calculated to be 11.6

when measured by the standard deviation of percentage change in equity prices (month-end figures) in domestic currencies. The reasons for this high degree of volatility were stated to be the relative illiquidity in the markets and a more sporadic availability of information regarding companies. The excess volatile condition in Indian markets weakens investor confidence and thus hinders investment. Moreover, the existence of "bubble" trading by intermediaries, who trade in price differences without capabilities to pay or deliver securities in time imparts illiquid conditions in the markets.

Security Exchange Board of India(SEBI), even after being granted statutory regulatory authority of capital markets, has not been successful in checking "insider" trading, though this activity exercises heavy influence on the markets. There is a pressing need for effective policing of end-use of funds by SEBI, in order to ensure the return of investors to the market. In the absence of policies to discipline such unwanted activities, the Indian stock markets cannot rise to the levels of advanced ones.

From the preceding analysis, it is abundantly clear that using the prescribed indicators to measure the development of Indian stock markets overlooks the more disturbing features prevailing in these markets. Certain other factors are considered prerequisites for the successful functioning of the emerging markets.

According to Farida & Dera Khambata (1988), these factors are (a) a stable political environment and a growing economy, (b) a sufficient demand for and supply of stocks and (c) a regulatory framework which protects the investors. According to the authors, too few shares deter investors from entering the market and when at a later stage trading becomes active, this situation results in violent price movements. Apart from this, the rapid growth of trading by domestic financial institutions should precede the capital market integration so as to impart stability in share prices.

In addition to the above mentioned limitations, Mohd. El-Erian and Manmohan S. Kumars study (1995) has revealed some more glaring shortcomings in the emerging economies. They are as follows :

(a) Companies divulge less information to investors which limits the investor's knowledge of company performances.

(b) Companies are subjected to less investment research.

(c) Existence of structural institutional bottlenecks such as fragmented capital markets which are less organised, difficulties in detecting and discriminating among investment opportunities in these markets, existence of dichotomy in the financial activity between organised and unorganised money markets etc.

Almost all the developing economies face these problems in varying degrees. However, the concepts such as efficiency, volatility and bubbles need particular mention if one intends to compare the emerging markets with the developed ones. In the following paragraphs a brief mention of the ongoing debates pertaining to these concepts is given.

Volatility, Bubbles & Efficiency:

There is considerable disagreement over the existence and effects of excess volatility

In terms of market volatility, Bradford DeLong et al (1989) argue that excessive stock market volatility can hinder investment. But disagreement continues over the existence and effects of excessive volatility. A.D. Kunt and R. Levine mention that the degree of volatility does not necessarily show the extent of stock market development. However they concede that a less volatile market is generally a more developed market. However, the treatment of volatility has a particular significance for emerging markets since its cause is different from that of developed ones. Volatility in case of developed markets is more because of fundamental factors (domestic) where as in the other case it is driven more by external factors. Especially, the short-term volatility in stock prices in emerging markets is in excess of volatility in the underlying

fundamentals relating to corporate profits, dividend payments and interest payments, etc. (Mohd El-Erian & Kumar 1995).

Another related aspect of volatility, which has troubled the emerging markets, is the frequent appearances of speculative "bubbles". A bubble is said to exist if the stock price is high today only because investors believe that the price will be higher tomorrow (Stiglitz's definition in the "Symposium on Bubbles"). The prices of equities keep on increasing for a very long time relative to the levels they should be according to the fundamentals. And all of a sudden, when the market sentiments change abruptly, the prices crash. Although the existence of bubbles is also a feature of developed markets, the emerging markets don't have the required resilience to counter a sudden crash in prices.

The concept of an efficient market is one of the most contentious ones. In an efficient market, the stock prices should reflect fully and correctly all the publicly available information and should also react speedily to that information. That is to say, the prevailing equity prices should be a good estimate of their intrinsic values owing to competition. Again, this intrinsic value is ill-defined. According to the controversial Efficient Market Hypothesis, in developed markets, there is instantaneous adjustment to the new information received and the successive stock price changes are independent. But the emerging markets are relatively less active and the successive

changes in their stock prices show a greater degree of dependence. (El-Erian and Kumar) Only competitive rates of returns prevails in long run in the developed markets.

SECTION II : FACTORS STIMULATING FII INVESTMENT IN THE INITIAL YEARS OF LIBERALISATION :

This section presents a summary of the situation, prevalent during the years 1993 and 1994 which attracted large volumes of FIIs. Towards the end of this section, a brief analysis of the reform measures, taken in the capital market since 1992, is given.

At the outset, the factors that have led to an increase in foreign portfolio capital flows from the developed countries to the developing economies are discussed. First, after the debt crisis in the initial years of 1980s, the developing countries diverted their attention towards the private non-bank finances. Most of these countries undertook measures to reduce or remove the barriers hindering such flows and indulged in a competition to attract more and more of such investments.

Second, the interest rate differential between industrial and developing countries provided an opportunity for fund managers in developed countries to diversify their portfolios. Low interest rates in the early 1990s, especially in US,

attracted investors to the high yields from investments in bonds and equities in emerging markets of developing countries.

Third, the slow and uneven recovery phase after recession in the developed countries in the 1992 and 1993, implied a depressed demand for capital and low anticipated rates of return. Besides, the relaxation of norms relating to capital outflows in US as well as structural changes in the developing countries resulted in huge volumes of capital flows to the later, much of which was in the form of portfolio investments. The proportion of foreign portfolio investment from industrial countries, that was directed towards emerging markets, rose from 0.5% to 16% between 1987 and 1994. (Richards, IMF Staff Paper, 1996).

Structural reforms were undertaken in the Indian economy from 1991 onwards with the purpose of stimulating foreign investment. Towards the end of 1992, the FIIs were permitted to invest in the domestic capital markets.

Among the various measures undertaken to attract FIIs were the simplified common application forms for registration of FIIs with SEBI. Even foreign brokers were allowed to assist FIIs in their transactions. However, they could operate on behalf of FIIs only by transmitting orders to buy and sell securities to the members of stock exchanges.

Although Foreign Direct Investment was quick to respond, the FIIs were hesitant to start with. The foreign institutional investment picked up sharply only after October 1993. The transaction costs in Indian markets were very high and settlement procedure was still very cumbersome. Physical transfer of shares and its associated high cost were other major deterrents. Still, FIIs chose to invest in India. This confirms that FIIs were primarily attracted by some other factors. A study by Ajay Shah and Susan Thomas enquired into the causative factors influencing FIIs. The prospect of higher return is one of the motivating factors. The long run average rate of return on the SE-P500 index (of US stock markets) is around 0.93% per month, whereas the corresponding figure for Indian market is 1.6% per month. Even after allowing depreciation of 6 percent per year, this figure for India is found to be higher than US.

The second crucial factor, for the inflow of foreign institutional investment, is the degree of correlation between the return from investment in stocks of source and recipient countries. If this correlation is high, the FII inflows to the recipient country will be low and vice versa. The same study finds a very low correlation between monthly returns on SE-P500 and Nifty (the NSE-50 index). The overall average correlation between these two indices, using seventeen years of data, turned out to be - 0.0198.

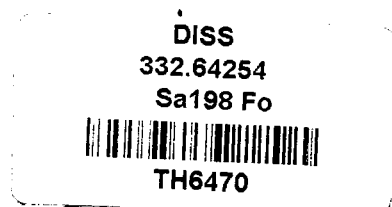
The correlation calculated by the study is found to be very low as compared to that between OECD countries/ other emerging markets and US. This points to the profitability associated with the diversification of funds towards Indian stock markets. Secondly, the negative correlation proves that Nifty can work as a hedge against the SE-P500.

A stable exchange rate over a period of time may not be a criteria for FII flows. But it certainly ensures a gradual and steady flow of foreign capital. The rupee was made fully convertible on current account in early 1993. The exchange rate depreciated a little between February and April, 1993, but remained more or less stable for the rest of the year. The stability of rupee vis-a-vis dollar instilled confidence in FIIs.

The foreign institutional investors are believed to be bullish in nature and tend to invest in shares with an extremely high price-earning ratios. A survey by Kulshreshtha in Feb. 1994 found that 32 out of 92 shares in the specified group of the Bombay Stock Exchange had P/E levels exceeding 80, which was very high.

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Above all, the basic characteristics of the Indian economy as a whole was favourable to the profit seeking FIIs. A well established stock market and a well know corporate sector with excellent track record of performance and finally a strong and



favourable institutional and regulatory set up helped India have an edge over the competing South Asian countries (IMC Factbook, 1994).

POLICY CHANGES IN THE CAPITAL MARKET: A CRITICAL ANALYSIS

1. The FIIs were allowed to undertake investment in the domestic capital market in September, 1992 with the condition that the combined investment of all FIIs taken together should not exceed 24 percent of market capitalisation. The investment limit of an individual FII was set at 5 percent which has been subsequently raised to 10 percent in 1996-97.

The limit of 24 percent seems very high. Until now, their combined investment has been between 1 and 3 percent of total market capitalisation. But, seeing their control over the movement of share prices as well as the exchange rate, an investment level anywhere near the upper limit can have serious consequences for the economy.

2. The 1993-94 budget had announced a 30 percent tax on long-term capital gains for FIIs. The dividend tax was 20 percent. The tax on capital gains has been further slashed to 10 percent in subsequent budgets. The long-term capital gains tax in case of NRIs was also reduced to 10 percent in the 1996-97 budget. On the other hand, domestic companies/institutions as well as other investors had to pay 30 percent as capital gains tax which was reduced to 20 percent in the 1996-97 budget. This is still

higher than what FIIs and NRIs have to pay . This gross discrimination exposes the government's failure to provide a level playing field.

There have been some policy changes which have met with limited success. FII investments in debt securities of companies, as 100 percent debt funds, have been allowed, subject to certain guidelines. Similarly, they are allowed to invest in gilt-edged government securities again within the framework of guidelines.

Indian investments abroad are eligible for automatic approval by RBI only upto US \$ 4 million again subject to certain conditions. But FIIs and NRIs, undertaking portfolio investments in India, are permitted to bring in and repatriate their funds net of taxes (if any) to be paid by them.

Thus, FIIs can keep their exit door open and at slight hint of trouble they can flow out in herds just as they have come in. The absence of a lock-in period certainly exposes our market as well as the whole economy to the whims of FIIs.

CHAPTER II

ROLE OF SMALL AND BIG INVESTORS, BEFORE AND AFTER CAPITAL MARKET LIBERALISATION

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The massive investments by FIIs have altered the position of small as well as big players in the stock market. This chapter inquires how their role has changed after 1992-93, which incidentally was the year of capital market liberalisation. Then the possible reasons for this change are discussed along with the implications for the capital market as well as the economy as a whole.

Small Investors: Before & After 1992-93

Private individual investors are also known as small investors (or households). An increasing proportion of their savings was being invested in the banking sector since the nationalisation of banks in 1969. However, there was a shift in the allocation pattern of their funds since 1985-86. Their investment in shares and debentures, as a proportion of total investments in financial assets, has been rising along with the boom in stock markets from the year 1985-86. The rising trend of investments in shares and debentures by households is another indication of the capital market's importance in their portfolio.

The situation has changed since 1992-93. In that year, more than one-tenth of total market capitalisation was accounted for by the Household sector. Their participation in the market has declined in the later years. A study of table 2.1 confirms this.

**TABLE 2.1:SAVING OF HOUSEHOLD IN SHARES & DEBENTURES
AND BANK DEPOSITS:**

Years	shares & debentures	as pc to fin.ast	Bank Deposits	as pc to fin.ast	Mar. Cap.	Inv in share / Mar. Cap
1980-81	412	3.4	5550	45.8	N.A.	N.A.
85-86	1394	5.5	10603	41.5	N.A.	N.A.
89-90	2655	5.5	14763	30.1	55409	0.00812
90-91	4972	8.4	16600	29.2	110279	0.00526
91-92	6800	10	20755	29.3	354106	0.00376
92-93	8212	10.2	27542	36.4	177066	0.00395
93-94	10067	9.2	29220	29.8	398349	0.00108
94-95	8461	6.1	57426	42.4	433100	0.00065
95-96	5880	4.7	N.A.	N.A.	471039	4.2E-05

Source : RBI Report on Currency & Finance, 1994-95.

An analysis of table 2.1 reveals certain interesting features about household saving. The investments by the household sector in shares and debentures as a percent to investment in all financial assets was 3.4 per cent in 1980-81. It increased to 5.5 per cent in 1985-86 and was the same in 1989-90. Subsequently it had risen rapidly. This rising trend culminated in the year 1992-93 when it was 10.2 per cent. However this growth has been reversed from that year and investment, as a percentage to total investment in financial assets, has fallen sharply. Within three years it had reached 4.7 per cent in 1995-96.

However, when the absolute amount is taken, the investment in shares and debentures has increased since 1992-93. This increase may be due to a rise in gross domestic savings by household sector over these years. The role of individual investors in the capital market has also diminished since 1992-93, as gauged from

the table. To see this, the investment in shares and debentures as fraction of total market capitalisation, is taken. This fraction was higher and was between 4 to 5 prior to 1992-93. The following years witnessed a sudden fall from the levels prevailing before 1992-93. The decline has continued and so has the faith of private individual investors in capital markets. The investment in domestic financial institutions such as UTI and LIC has also behaved in a similar manner as is obvious from the table 2.2.

TABLE 2.2: UTI, LIC'S SHARE IN HOUSEHOLD SAVING

Years	as pc to Inv. in fin.ast	UTI	as pc to Inv. in fin.ast	LIC
1980-81	3.4	31	0.3	915
85-86	5.5	586	2.3	1779
89-90	5.5	2179	4.5	4415
90-91	8.4	3438	5.8	5599
91-92	10	9087	13.3	7003
92-93	10.2	5612	7	7114
93-94	9.2	4705	4.3	9548
94-95	6.1	3908	2.8	11344
95-96	4.7	262	0.2	13481

Source : Same as table 2.1.

The share of UTI, in the total household investment in financial assets, had increased from a meager 0.3 percent to 13.3 percent during the period from 1980-81 to 1991-92. However, it has fallen since then so rapidly that this share has become only 0.2 per cent in 1995-96. The share of LIC had also shown an increasing trend upto 1991-92. It has declined but remained between 8 to 9 percent since then.

Savings of households in bank deposits as a ratio to gross financial savings, which was increasing since 1969, reached 45% in 1980-81. This implies that banks

as intermediaries were performing well. But the trend was reversed in 1980s. There was a gradual fall in the ratio, which gathered momentum, particularly in the second half of the 1980s. Beginning from 36.9% in 1988-89, it reached the lowest at 29.2% and 29.3% in the years 1990-91 and 1991-92, respectively. However, since then the ratio seems to have recovered its upward movement in a rapid manner. Within one year it reached 36.4% in 1992-93. For 1994-95, the ratio is 42.4%, which as high as in 1980-81.

The ratio of household savings in bank deposits seems to bear an inverse relation with that of shares and debentures. When there was almost no competition from other financial intermediaries until 1985-86, banks attracted about half of their savings in financial assets. But the primary market boom, which occurred after 1985 turned the attention of households to the opportunity thrown open by the capital market. Thus, the household investment in shares witnessed an upward trend since then. The very high investment in shares and extremely low deposits of households with banks during the security scam period, necessitates a study. Prices of almost all shares rose abnormally towards the end of 1980s. It was basically a "bubble", which persisted till 1992. Given the fact that households (or small investors) have limited access to specified group shares, they saw a chance to maximise their gains by investing in group "B" shares, whose prices were increasing too. This reduced their funds deposited with banks, giving rise to a threat of disintermediation for banks. However, once the "bubble" burst and the capital markets slumped to depressed condition, they started to switch over to bank deposits again. Since then, household savings in bank deposits has

been rising. The lower mobilisation by mutual funds has also contributed to this process.

Big Investors: Before and After 1992-93

Domestic financial institutions, especially investment institutions such as UTI, LIC have been major players in the capital markets. UTI, whose investible fund, has increased remarkably over these years, has come to occupy a powerful position in the capital market in India. Its investible funds has increased manifold from Rs. 1261 crores in 1983-84 to Rs. 11834 crores in 1989-90. Most of these funds are invested in equity shares and debentures. The huge investments in the private corporate sector, unlike other financial intermediaries in India, has enabled UTI to have greater control over the capital market.

But things have changed since 1992-93 with the entry of FIIs into Indian markets. Of late, FIIs have become potential competitors of domestic financial institutions especially of UTI. An analysis of the table 2.2 below reveals some basic facts about the "big players" in the market today. UTI's investment in equity shares has been increasing over these years and the rise has been substantial since 1989-90. It increased from Rs. 3494.58 crores in that year to Rs. 8704.19 crores in 1991-92. But as a percent to market capitalisation, it declined from 6.3 to 2.4 over the same period. The sudden spurt in 1992-93 was as a result of the security scam. The fraction to market capitalisation increased to 8.4 all of sudden. Since 1992-93, this fraction has been fluctuating.

In recent times, there has been a move towards institutionalisation. It has further aggravated the problem of lack of liquidity, which has always been one of the major weaknesses of Indian capital markets. Historically, over threefourth of market capitalisation in our markets have been held by the promoters and development financial institutions reducing floating stocks to quite low levels. The amendment of The Securities Contracts (Regulation) Act permitting high firm allotment to institutional investors has further worsened the liquidity condition in the market. The long holding periods of securities held by large financial institutions such as GIC and LIC, who hardly turnover their portfolios, does not help in releasing stocks for individual investments.

Immediate victims of the illiquid conditions are the small investors. Many capital market regulations, which have sought to increase the role of institutions in the market, have worsened the liquidity situation and thus reduced small investors' participation in stock markets. Moreover, the entry of FIIs has increased the role of institutions in market transactions. The small investors have not gained much from the stock market booms in recent times as FIIs have garnered much of the profits and rest has gone to large domestic financial institutions. Again, the increase in market volatility, which seems to have something to do with the whimsical investment behavior of FIIs, has added to their woes.

Changing Role of Domestic Non-bank Financial Institutions (UTI & LIC)

The advent of FIIs, in Indian capital markets, has forced the domestic institutions to change their game plan. This change can be noticed from the table 2.3.

TABLE 2.3: SHARE OF UTI & FIIs IN MARKET CAPITALISATION

Years	UTI Inv. Rs crores	Mar.Cap.	UTI Inv/ Mar. Cap	Net FII Rs mln.	Net FII/ M.C (%)
89-90	3494.58	55409	6.306882	N.A.	N.A.
90-91	4235.18	110279	3.840423	N.A.	N.A.
91-92	8704.19	354106	2.458075	N.A.	N.A.
92-93	14838.19	177066	8.380033	N.A.	N.A.
93-94	21051.44	398349	5.284672	51261.9	1.286
94-95	28459.66	433100	6.571152	47961.8	1.107
95-96	27995	471039	5.943245	69441.5	1.474
96-97	N.A.	534132	N.A.	N.A.	N.A.

Source : Same as table 2.1.

We have taken only UTI as a representative of domestic financial institutions (non-bank). The investment of UTI in shares has fluctuated and remained very low in years from 1993-94 to 1995-96. The ratio of share investment as a percent to total market capitalisation has also behaved in a similar manner. However, on close observation, this fluctuation can be seen to have an inverse relationship to that of FIIs. The ratio of FII net investment to gross market capitalisation has also fluctuated, but not in the same manner. For FIIs, it was 1.4 in 1993-94, which came down to 1.1 in the following year. But, for UTI, it was 5.28 in 1993-94 which increased to 6.57 in 1994-95. The higher ratio for FII in 1993-94 was due to their higher purchases in the last part of 1993 and beginning of

1994. This had put strain on supply of stocks in the market. UTI sold heavily in that period in order to take advantage of high share prices resulting from heavy purchases by FIIs. The sales were so much that brokers pressurized SEBI to put a cap on UTI sales. Similarly, in the following year, the situation was just the opposite and FII sales were very high following the Mexican debacle. In the same year UTI stepped up its purchases to minimise its losses or enhance its prospects for future gains.

Thus, a point can be made about the game plan of UTI in the changed scenario after the entry of FIIs into domestic markets. When FIIs undertake massive investments, the sensex rises. Sensing an opportunity to cash in, UTI releases its holdings to the market and books 'out of turn' profits. It reverses its action following a sudden withdrawal of funds by FIIs. Therefore, in the post liberalisation scenario both UTI and FIIs stand to gain.

As mentioned earlier, UTI and other financial institutions hardly turn over their share holdings. But the preceding analysis showed that UTI is active in the market, both in terms of purchases and sales of shares, in recent times. So, who among FIIs and UTI, who has emerged as a market leader is very difficult to ascertain. However, one point is clear. Whatever trading takes place, it does so only at the margin.

Moreover, in the ensuing tussle the households have gained little. This is obvious from their declining share in total resources mobilised by UTI from the market.

Since, data on LIC's participation in the market is inadequate, we can't draw similar conclusions for LIC in this regard. However, data for 1993-94 and 1994-95 are available and on the basis of it, the investment by LIC in shares as a percent to market capitalisation is calculated. It has turned out to be 4.8 for 1993-94 and 6.7 for the next year. This confirms that even LIC has joined the competition for market supremacy.

Going by the above analysis, it can also be concluded that FIIs have been consolidating their position in the market through increasing investments over these years. The net investment of FIIs now amount to Rs. 8481 crores and as a percent to market capitalisation, it has increased to 1.58 in the year 1996-97. So, FIIs are going to undertake substantial investments in future. One wonders as to which direction the market will move.

CHAPTER III

IMPACT OF FII INVESTMENTS ON INDIAN CAPITAL MARKETS AND ITS MACRO ECONOMIC IMPLICATIONS

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IMPACT OF FII INVESTMENTS ON INDIAN CAPITAL MARKETS AND ITS MACRO ECONOMIC IMPLICATIONS

The large inflow of foreign institutional investments into the developing economies, in recent times, has opened up a serious debate on their role and consequences for these economies. Their advent and the related discussion are of special importance, since most of the emerging economies are ill-prepared to deal with the adverse implications of such flows. Various studies, that are to be discussed in this chapter, have focused on three different aspects of such flows. These are, the impact of opening up of markets (1) on stock returns, (2) on stock price volatility and (3) on exposure to foreign volatility.

1. Impact on Stock Returns :

Generally, it is believed that stock market returns have a tendency to increase soon after liberalisation. But this is only a one-time event and the returns fall back to the normal rate in the long run. The reason for the increase in returns, in the initial period of liberalisation, is not far to seek. The domestic firms expect that they would be able to access lower cost funds from international investors, when the stock market is opened to the latter. Therefore, stock prices also increase just after opening, thus increasing stock returns.

E.Han Kim and Vijay Singal (1993) have calculated the mean standardized return for four representative countries (emerging markets). One year

prior to opening, it was 0.579, which was not significantly different from 0.497, which was calculated for the second year from the year of opening of domestic markets.

On the behavior of stock returns in the post-liberalisation period, a study by Anthony J. Richards contends that the volatility of returns becomes less. The domestic capital in the pre-liberalisation period, though not "hot", is capable of bringing about large changes in asset prices. But after opening, the FIIs would flock in gradually and a larger number of investors would now share a given amount of risk which should reduce the volatility of returns. A sudden increase in volatility soon after opening, according to the author, is due to the greater attention the FIIs, along with international financial press, pay to the large price changes in emerging markets.

2. Impact on Stock Price Volatility :

The FIIs come in flocks and normally invest in large volumes. So, the stock prices in developing markets, which are believed to be not directly determined by underlying fundamental factors in the economy, are bound to be affected by their sudden decisions to either invest or withdraw in bulk. However, some studies have negated this viewpoint on empirical grounds.

The study by E Han Kim and Vijay Singal, had gone into this aspect. The volatility for each country was standardized and averaged across 16 countries

(including India) for each month relative to market opening. The mean relative volatility was 1.110, twelve months prior to opening, but remained almost at the same level of 1.039, even 12 months after opening. Similarly, for 24 months prior to opening it was 1.131, but for 24 months subsequent to opening it dropped significantly to 1.030.

The results thus suggest that the stock market became less volatile after opening to foreign equity flows.

By using both monthly and weekly data for 16 emerging stock markets including India for the period between 1975-95, Anthony J. Richards also arrived at the same conclusion.

Another study by Bekaert (1995) also finds volatility to be negatively correlated with a measure of market integration.

3. Exposure to Foreign Volatility:

After most of the capital markets are integrated through liberalisation, the risk of exposure of the domestic market to volatility in the foreign market has become greater. The bitter experience of Latin American countries, in the recent past, gives validity to the argument. However, most of the studies have shown an insignificant correlation between domestic stock price volatility and world stock price volatility. That is, domestic price volatility is not sensitive to the world

capital markets when the economy is closed and the same is true even after opening.

The same study of E. Han Kim and Vijay Singal has found that there was no change in stock market volatility due to the opening of markets, when it is controlled for changes in volatility of industrial production. Moreover, the correlation between stock price volatility and industrial production was found to be positive.

In line with the above study Folkerts Landan & Ito (1995), suggest that it is the domestic investors, and not foreign investors, who play a dominant role in determining the volatility and level of asset prices.

The studies, discussed so far, are found to be unanimous in one respect, i.e. volatility becomes less as emerging markets are integrated to world capital markets. Secondly, significant volatility found in any country is wholly due to domestic factors than otherwise. Thus, they make a case for liberalisation of capital markets in emerging economies.

Drawbacks:

These studies suffer from some inherent shortcomings, which call for a debate on these issues. One, they deal with basically short-term movements i.e. month-to-month changes in capital flows and stock prices. The policy makers in the developing economies are mainly concerned with the long swings in capital

flows and asset prices. So, exogenous shocks have always the danger of triggering a crash in the domestic market.

Two, liberalisation of the domestic stock market is a gradual process and exact date for the opening of the markets, which is used in these studies, is misleading.

Third, by using normalised figures for several countries together, the treatment of volatility gives a result favorable to liberalisation argument. However, a case by case study for each country may yield diametrically opposite results when raw data is used.

There have been a few studies pointing towards the increase in volatility in the aftermath of stock market liberalisation. Williamson (1993) found that "bubbles" in asset prices may develop due to the herdlike behavior shown by foreign institutional investors in their purchases/sales. Goopta (1993) supported his argument saying that increased volatility may result from herding as well as rapid switching of portfolios between different markets. Secondly, the shortage of good quality, large capitalisation stocks may result in rapid overheating of stock markets in emerging economies, when domestic and international interest is stimulated by sweeping capital market reforms. Howel (1993) suggests that in the absence of domestic long-term investors in the emerging markets, the foreign

investors are marginal investors and their high mobility will result in high price volatility.

The FIIs and especially the equity related investments by private foreign investors and managed funds (e.g. country funds and mutual funds) aim at short-term returns and thus are governed by cyclical fluctuations both within the domestic economy and outside. They indulge in "enmasse" profit booking and force sales which injects rapid volatility into the markets. A study by IMF (1994) and later by Halmut Reiser (1996) has confirmed that the crisis in Mexico and some other dedicated emerging markets, in the later part of 1994, was a result of this phenomenon. Only the cyclical external factors accounted for approximately 30 to 50 percent variation in private capital flows to developing countries.

After this discussion of the studies relating to emerging capital markets as a group, the following paragraphs analyse, in some detail, the issues of stock returns, market volatility, etc. in the Indian capital market since it was made open to Foreign Institutional Investments in 1992. The studies have attempted to establish a worthwhile relationship between foreign portfolio investments and volatility.

Rajan Goyal (1995), in his study on stock returns, has used the vector autoregressive model (VAR), taking 3 endogenous variables and one exogenous variable. The exogenous variable is in the form of a dummy to capture the impact

of globalisation of Indian capital markets. In its findings, the study denies that globalisation of capital markets, through investments by FIIs and GDRs, has added significantly to stock market volatility. One of the reasons stated is that the cumulative net investments by FIIs have not been more than 1.4 percent of market capitalisation of scrips listed on BSE during any month of the study period, i.e. between January 1993 to March 1994. Similarly, the total capital issued through GDRs, till March 1994, formed only 1.5 percent of market capitalisation of listed scrips.

The findings by Rajan Goyal thus seems to be in line with Kim and Singal (1993). They had examined (following the same method) the impact of foreign portfolio investments on the volatility levels, in case of nine emerging markets belonging to Europe, Latin America and Asia during January 1988 to September 1992.

Swapan Sen's study essentially looks into the relative role of foreign capital vis-à-vis internal economic factors (such as industrial output growth, interest rate, etc.) in influencing the share price movements in India during period 1985 to 1994. He used the change in foreign exchange reserves as a proxy for the portfolio investments.

The study revealed that stock prices in India showed an upward trend after 1987, that is, long before the initiation of structural adjustment programmes and

advent of foreign investments in large volumes. Share prices showed a sharp increasing trend between 1988-91, even though foreign exchange reserves declined sharply. The industrial production index for this 4 year period showed a steady increasing trend. So, according to Sen, the pre-1991 rising trend of the Sensex was driven by internal factors. But, the share price rise beyond 1991 appeared to be greatly aided by inflow of foreign equity funds.

The regression results indicated a significantly positive relationship between movements of indices of share prices and industrial production for the period 1986 to 1994. The study established that domestic factors triggered the stock price increase which was then augmented by subsequent flow of funds from abroad.

The influence of equity capital inflows was studied for the period of 11 months from December 1993 to October 1994. Short term interest rates, forex levels, industrial production were taken as dependent variables and stock prices as independent variable. The regression results confirmed a positive relationship between stock prices and interest rates, as well as forex levels. But the relation with industrial production was negative and not significant. The study concluded, thus, that foreign portfolio investments have been crucial in sustaining stock prices. However, Swapan Sen's study has been of little practical importance because of the use of changes in forex levels as a proxy for FIIs.

Another study by Himanshu Joshi has empirically observed the factors, other than stock returns, that have resulted in the variations of FII inflows from May 1993 to September 1995. The variables considered are (i) outstanding net FII investments, that is purchases net of sales in each month, in US \$ terms, (ii) BSE sensx with base at 1978-79 and (iii) Nominal Rupee - US dollar exchange rate. It was found that increasing risk or volatility in the market has led to a decline in fresh investments. Such behavior exemplifies caution and averseness to country risk in the first place. However, net FII investments responds positively and significantly to optimistic expectations about the Sensex. Moreover, the exchange rate variation was found to be negatively related to net FIIs, which implies their averseness to a depreciation of rupee.

A review of the foregoing studies brings to light some truths regarding FIIs.

- (a) The FIIs have influenced the stock price movements,
- (b) A risk free and less volatile market has attracted more FIIs in any particular month.
- (c) The stability of exchange rate is very crucial for retention of FIIs investment in the market. Any fall in the rupee value against dollar has resulted in withdrawals by FIIs.

The above points are in part strengthened by a survey of capital markets in India (represented by BSE in this case) for the three year period from 1994 to

1996. Using graphs and tables to show trends in the movements of FII investment as well as the Sensex (BSE), an attempt has been made to highlight the factors encouraging or discouraging FII flows. Secondly, the control exercised by FIIs in the capital market can also be deciphered from the survey. (See Appendix).

Developments in the Capital Market (BSE) During the Period (1994-96) :

A rising trend in the BSE sensex was seen from the beginning of the year 1994 leading to a peak in the month of March 1994. The net FII inflows had been trickling in till October, 1993, but suddenly jumped to Rs. 10,795 million in November 1993, which was more than the aggregated FII net inflows in the first eight months of that year. They reached the highest peak so far at Rs. 12,219 million in January 1994, but since then remained well above Rs. 5000 million for a long time.

The BSE sensex continued to remain above the 3700 mark till mid-September 1994. The rising trend of both sensex and FII net inflows implied a high degree of correlation between the two in that period.

The reasons for this buoyancy in the capital market may be the flow of encouraging corporate results for the year 1993-94 and the onset of a normal monsoon. But the predominant cause seems to be the sustained buying support of domestic financial institutions, mutual funds and more importantly the large volume of net FIIs Investments. This period also saw an increase in the trading

activities of FIIs in the capital market both in terms of purchases and sales. Thus they had started to influence the capital market slowly but surely.

However, from October 1994 onwards FIIs continued to withdraw their funds, thus triggering a declining phase in the capital market. The BSE sensex declined, but remained over the 4000 mark before touching a low of 3900 in the last fortnight of December 1994. The net FII flows also fell sharply from Rs. 5668 million in October to only Rs. 301 million in November and Rs. 485 million in December 1994.

The reason offered by advocates of capital market liberalisation, for the decline in FII purchases, was the lack of adequate custodial facilities in India. FIIs are used to the Central Electronic Depository Systems and so found the then existing system of transfer mechanism to be too tedious. However, the truth was otherwise. The withdrawal had started as soon as there was a development in interest rates abroad. Secondly, the GDR prices in the international markets had weakened and so the domestic market was adversely affected. The exchange rate could not have been a cause as it was more or less stable throughout the year 1994.

The fall in the sensex which started in the month of September could be attributed to profit-taking by domestic financial institutions and operators. But the

sharp fall in sensex in the last two months of 1994 was apparently due to rapid withdrawal of FII funds.

The declining phase of sensex, which had started in 1994, also continued in 1995 upto the month of April. The sensex dropped to the 3000 mark in the last week of April. The net FII flow remained between Rs. 1000 million and Rs. 2000 million for the first five months of 1995. It was about to pick up in January but suffered reversals due to massive sales by FIIs. They sold more than 50 percent of their purchases in the first five months only. For instance, in the month of January, the total purchase was Rs. 4963 millions, whereas the sales was equally high at Rs. 3316 million thus giving a net investment of only Rs. 1647 millions. This implies that the net inflows declined though the trading activities of FIIs increased through large sales. The withdrawals were so rapid that some of the shares, held by them, sold at a discount i.e. at a price below the market price. This injected large volatility into the share prices for the first four months, when seen on month-to-month basis.

Causes for rapid withdrawals, as given by FIIs, were the high tax rates, cumbersome share transfer procedure (especially during purchases), illiquid shares and delay in settlement processes. However, the most obvious reasons, for the rapid volatility in their investments, could be the setback they suffered in Mexico, the political uncertainty prevailing in India during that period and the fall in GDR prices, which entailed huge losses to FIIs. The Mexican crisis was followed by

capital flight from almost all the emerging capital markets and so India cannot be an exception. The continuance of bearish conditions could be the result of Govt.'s indifference to correct it. However, this period saw a noteworthy development in relation to FII investments. The focus of their activities changed to the secondary rather than primary market.

The investment climate showed some signs of recovery towards the end of September, 1995 and the sensex crossed the 3500 mark. However, the FIIs had already stepped up their purchases in June and July. The net FII inflows rose from Rs. 3673 million in June to Rs. 6577 million in July and for the next two months, it remained well over the Rs. 4000 million level. But the spurt in FII flows was temporary and might be due to the various primary and secondary market reforms undertaken in those months.

The brief recovery of the market ended soon and the sensex began to move downwards from mid-October and this trend continued for the rest of the year. The slump was drastic in the month of November. Similarly, the net FII inflows, which had begun to decline at a moderate rate after attaining the peak in July, was lowest in November for the entire year. The ostensible cause for the sharp decline was the excess depreciation of rupee in the second half of 1995 due to speculative pressures on the exchange rate. The rupee depreciated by 4.9 percent against the dollar in September and further by 3.9 percent in October.

The year 1996 saw large upswings and downswings in BSE sensex. The rising trend in the first half was followed by a declining trend in the other half of the year. Consequently, the highest peak was reached in June at 4069 points and lowest trough in December at 2798 points. The net FII investment had been robust in the first seven months, thus sustaining the steady rising trend of sensex in that period.

The monthly net inflows of FIIs had been between Rs. 10000 million and Rs. 15,000 million for first 7 months of 1996. But it fell sharply to only Rs. 2887 in August owing to probable causes such as issuing of non-voting shares and introduction of MAT. But the actual reason seems to be redemption of some FII funds leading to large scale selling. Following such huge sales, short sellers took over and the sensex plummeted in the last half of 1996. This half was an exception as for the first time FII investment and sensex were seen to be uncorrelated. FII investments continued to rise after a brief set back in August, but sensex fell throughout. Cause was the diversification of FII funds. They were investing mostly in group 'B' shares after weekly settlement was introduced. Moreover, the introduction of depository system was yet another stimulus for FIIs. The noteworthy feature was the purchase of PSU shares by FIIs in large numbers after they were permitted to trade in gilt-edged securities.

This survey reveals some disturbing developments in the capital market since 1993. Especially the rise in FII investments, in earlier part of 1994, and the associated buoyancy in stock market, raises a fundamental question. Was it an

artificial buoyancy or it owed its strength to Indian stocks? There are allegations that FIIs help in price rigging and thus create a scenario of grey market manipulation. Some companies are also alleged to be involved in inflating their stock prices prior to EuroIssues. The possibility of such a phenomenon cannot be ruled out.

FIIs & Volatility (1993-1996):

The movement of domestic share prices has become very unpredictable over the years. It can be observed from table 3.1 that when compared with FII inflows, volatility has been more in the months which witnessed higher FII investment. Indian stock markets had been volatile even before the arrival of FIIs. But with the entry of FIIs, the volatility seems to be regulated more by their activities than otherwise. This hypothesis needs substantiation which is the main purpose of this chapter.

Data Source & Methodology

An attempt has been made to collect primary data for the study. The daily sensex figures are obtained from the Bombay stock exchange. For our study purpose, only the "closing day" figures are used. The FII gross investment, gross sales and net investments for each month, has been collected from "India Data Com" on internet.

The method of study is simple since the idea is to find a relationship between FII and volatility of sensex for every month during the period 1993 to 1996, that is, for 31 months. Last 5 months of 1996 have been excluded due to unavailability of data for gross investments and sales.

We have used gross investments, whereas previous studies have used net investments. Our assumption is that volatility is affected more by either gross purchase or gross sales than by net purchases, since we are studying FII's effect on monthly volatility. Moreover, earlier we have seen that for certain months gross investments or sales have changed perceptibly, although net investments have remained almost the same. However, during the study, a little modification will be done to the above statement for a particular year.

Volatility is used as a measure of fluctuations of BSE sensex around the average calculated for each month. Previous studies generally used standard deviation or variance to calculate volatility. However, coefficient of variation (that is $\text{standard deviation}/\text{mean} * 100$) is used in the present study.

The correlation coefficient has been calculated for each year to find the relationship that might exist between monthly gross FII investments and monthly volatility. An yearwise account of the relationship found between these two variables is given in detail below.

Findings of the Study

In the year 1993, FII investments saw a gradual upward trend from the month of April. The inflow was not significantly large until May. Starting from May, it reached the peak in August and after a marginal decline, it attained the highest for the year in November. When related to monthly volatility, it is found that volatility figure was also the highest in November and very high in August.

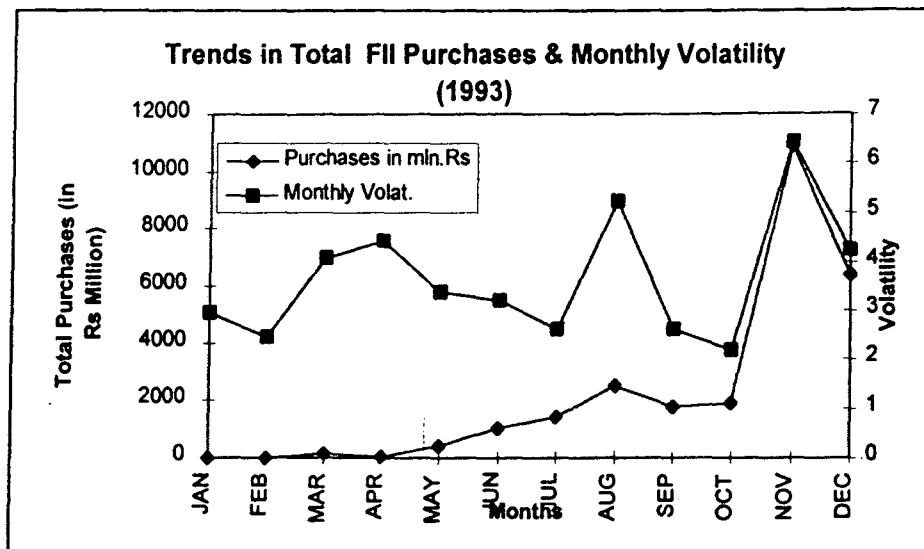
This trend can be observed from the table 3.1.

TABLE 3.1: CHANGE IN FII INVESTMENTS & VOLATILITY (1993)

1993				
Months	Purchases in mln.Rs	Net.Inv.	Net/Pur	Monthly Volat.
JAN	5.6	5.6	1	2.95406
FEB	12.6	12.5	0.99206	2.45025
MAR	155.7	115.4	0.74117	4.0786
APR	50.1	46.1	0.92016	4.43693
MAY	417.6	413.5	0.99018	3.38948
JUN	1041.9	1037.1	0.99539	3.21296
JUL	1434.5	1413.8	0.98557	2.62432
AUG	2510.5	2368.8	0.94356	5.24547
SEP	1781.5	1743.7	0.97878	2.62427
OCT	1891.5	1816.6	0.9604	2.19681
NOV	10895.2	10795.7	0.99087	6.44224
DEC	6422.2	6181.7	0.96255	none

Source : collected and computed from INDIA DATA COM.(internet)

Graph 3.1:



The correlation coefficient calculated between the two variables, FII gross inflow and volatility, has turned out to be +0.695, which is very significant. The positive sign indicates that whenever FII inflows have increased in any month, the volatility of sensdex has also increased though not by the same degree.

For the year 1994, trend of FII investments has shown sharp fluctuations. To start off, it was at its highest level, for the whole year, in January. Gradually declining it reached the lowest for the first half of the year in April. Again from May it declined gradually and reached the bottom in November. The whole year saw three peaks as well as three lows, which confirms that FII inflow was not steady in 1994.

When related to monthly volatility, it is found that monthly volatility was highest in the first month of 1994 and so also FII investments. Again, it was the

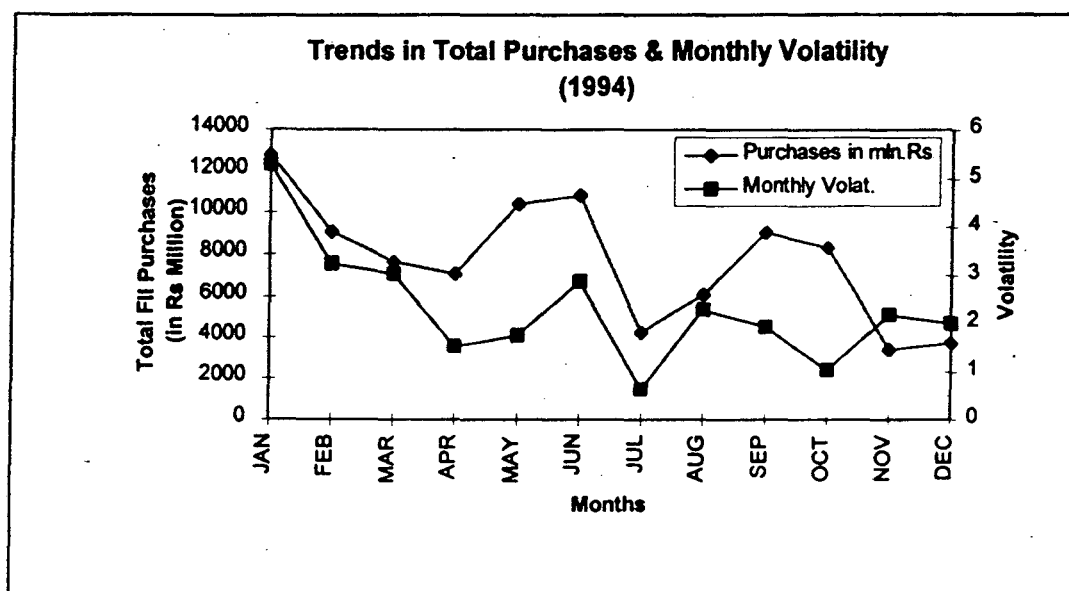
lowest in July, when FII investment was at one of its lowest levels for the entire year. The correlation coefficient calculated for these two variables was 0.590, which is significant too. This can be observed from table 3.2 and graph 3.2.

TABLE 3.2: CHANGE IN FII INVESTMENTS & VOLATILITY(1994)

1994				
Months	Purchases in mln.Rs	Net.Inv.	Net/Purchases	Monthly Volat.
JAN	12779.9	12220	0.95617	5.27218
FEB	9061.4	7621.7	0.84112	3.24233
MAR	7638.5	5603.5	0.73359	3.03612
APR	7102.2	5113.8	0.72003	1.52252
MAY	10408.6	8958.6	0.86069	1.75222
JUN	10840.5	8104.4	0.7476	2.86813
JUL	4248	2542.9	0.59861	0.63867
AUG	6056.7	4149.8	0.68516	2.28219
SEP	9088.9	7141.6	0.78575	1.92362
OCT	8337.7	5668.4	0.67985	1.04112
NOV	3395	301.8	0.0889	2.1776
DEC	3714.7	485.3	0.13064	1.9965

Source: Same as table 3.1

Graph 3.2:



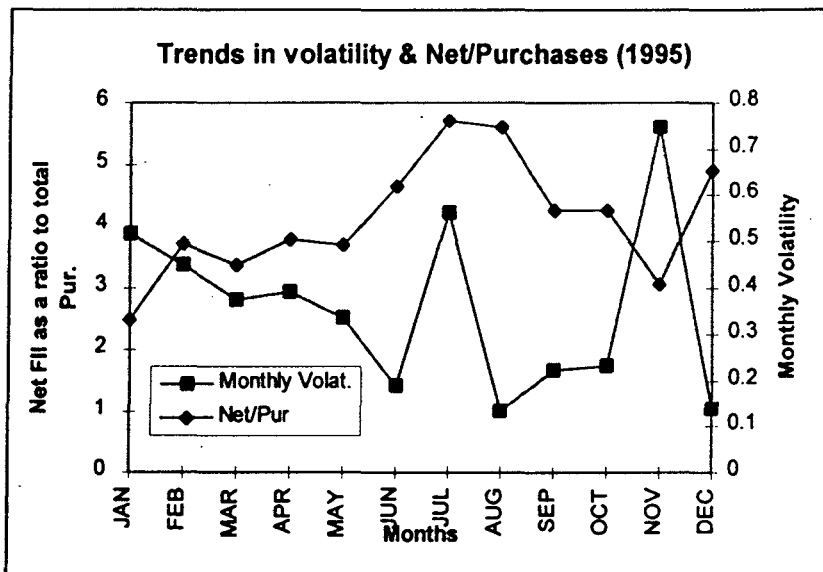
The year 1995 was a special case. The correlation coefficient, is -0.344, which is negative as well as insignificant. The FII inflow was affected by two major factors. First half of the year saw tumultuous trading activities by FIIs, as a result of the debacle in Mexico. All the emerging markets suffered from rapid withdrawal of funds by FIIs and India was no exception. The Indian capital market was marked by heavy selling activities by FIIs. Once the impact of Mexican crises subsided, the investment seemed to be picking up. But, again a downward trend started because of signs of fluctuations in the exchange rate of rupee. Thus, the second half was also marked by a declining investment trend though the sales activity had slowed down. This is observed from table 3.3 and Graph 3.3 .

TABLE 3.3: CHANGE IN FII INVESTMENTS & VOLATILITY(1995)

1995				
Months	Purchases in mln.Rs	Net.Inv. in mln.Rs	Net/Pur	Monthly Volat.
JAN	4963.2	1646.6	0.33176	3.8725
FEB	4087	2021.8	0.49469	3.36724
MAR	4066.6	1826.8	0.44922	2.81559
APR	3692.9	1864	0.50475	2.93909
MAY	4312.9	2119.7	0.49148	2.51719
JUN	5918.4	3673.9	0.62076	1.42274
JUL	8630.4	6577.6	0.76214	4.217
AUG	7524.9	5618.3	0.74663	1.00468
SEP	7163.7	4064.1	0.56732	1.68399
OCT	5690.2	3227.3	0.56717	1.74854
NOV	4130.5	1688.6	0.40881	5.60536
DEC	6477.2	4230	0.65306	1.04313

Source: Same as table 3.1

Graph 3.3:



Among all four years covered in the study, only 1995 has experienced the highest selling activity by FIIs. They sold more than half of their holdings in the first seven months. An attempt has been made in this study, to introduce a ratio which could capture the speculative trading by FIIs during that particular year. For convenience, this ratio may be called as "retention ratio", which can be defined as the ratio of net investment to total investment. More specifically, retention ratio is the net investment/total investment (purchases). An increase in this ratio implies more is retained in the form of net investment out of total investment made by FIIs. In other words, it implies less is sold as compared to purchases. On the other hand, a decrease in the ratio would mean less is retained and more is sold. An important qualification should be made about this ratio. It serves only as a proxy for the speculative activity of FIIs in the capital market in 1994.

When, the correlation coefficient is calculated taking monthly retention ratio as one variable and volatility as another, it turns out to be -0.5064, which is negative as well as near significant. The negative sign indicates that as the retention ratio declined, monthly volatility rose and vice versa. Even by looking at the table we can observe that the lowest value of this ratio at 0.408 coincides with highest value of volatility at 5.605, for entire year, in the month of November. Similarly, the highest value of this ratio at 0.746 coincides with the lowest value of monthly volatility at 1.004 in the month of August.

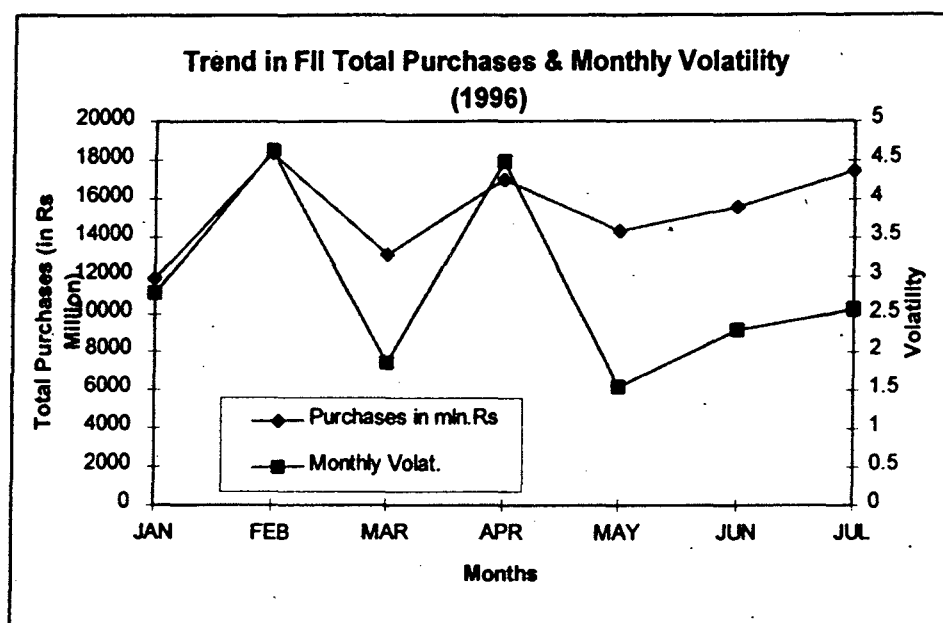
Again a significant as well as a positive correlation coefficient is obtained for the first seven months of 1996. It comes to 0.638. A look at the table reveals that total purchases by FIIs stood at Rs. 18380 millions, (the highest for first seven months) in February, and at Rs. 17041 millions in April. The monthly volatility was also 4.631 and 4.486 in those two months respectively, again the highest volatility for any month. The trend for investment by FII, though fluctuating, remained very high and even higher than the average for the earlier 3 years. This is observed from table 3.4 and graph 3.4 .

TABLE 3.4: CHANGE IN FII INVESTMENTS & VOLATILITY(1996)

1996 Months	Purchases in mln.Rs	Net.Inv.	Net/ Purchases	Monthly Volat.
JAN	11864	9974	0.84069	2.76296
FEB	18380	15665	0.85229	4.63145
MAR	13150	10739	0.81665	1.86618
APR	17041	14846	0.87119	4.48958
MAY	14310	10225	0.71454	1.54235
JUN	15588	12206	0.78304	2.28791
JUL	17485	10737	0.61407	2.56105
AUG	N.A.	N.A.	N.A.	N.A.
SEP	N.A.	N.A.	N.A.	N.A.
OCT	N.A.	N.A.	N.A.	N.A.
NOV	N.A.	N.A.	N.A.	N.A.
DEC	N.A.	N.A.	N.A.	N.A.

Source: Same as table 3.1

Graph 3.4:



On the basis of the study, it can be concluded that FII gross investment bears a positive as well as significant relationship with share price volatility. Even

though this does not imply a cause and effect relationship, it can be safely claimed that FII inflows may be a factor affecting volatility, a fact vehemently denied by many studies. Himanshu Joshi, in his empirical study, had found that whenever the risk or volatility has increased in the market, fresh FII investments has been less. The different indicators for measuring capital market development also show that a volatile market does not attract FII investment. So, high volatility can't cause larger FII inflow, rather a large and sudden inflow of FII investment may result in wide fluctuation of share prices.

Secondly, exogenous negative shocks do always have the potential to set off a crash in the domestic capital markets. The large scale selling activity by FIIs in the aftermath of Mexican crises in earlier part of 1995 confirms this apprehension. Finally, it was also seen that investments by FIIs has never been steady in any year so far. There have been large fluctuations when seen on monthly basis.

MACRO ECONOMIC IMPLICATIONS

The earlier section discussed the impact of FIIs on the domestic capital market, while the present section turns its attention to the impact on the foreign exchange market (Forex market) and other resulting problems for the domestic economy as a whole.

Foreign capital in any form can create massive macroeconomic problems for the recipient country. Bloated foreign exchange reserves, consequently an exchange rate appreciation and excess money supply in the economy, are the major problems faced by developing countries. This is particularly relevant in the case of volatile foreign portfolio investment. The Latin American countries have already experienced such problems.

The present study deals with the Indian economy in particular. There is widespread euphoria that foreign exchange reserves have improved dramatically over the last two years. A popular explanation for this phenomenon is that the external front has seen massive improvements. In fact, the foreign exchange reserves, which peaked at US \$ 25.2 billion at March-end 1995, declined to US \$ 21.6 billion at the end of May 1996. However, since then the foreign exchange reserves have been rising steadily and have stood at \$ 24 billion by January 1997. Compared to the position in 1990-91, we are certainly in a better position.

Foreign Exchange Reserves: The Truth

An analysis of Balance of Payments for the last three years unfolds the true state of our external sector. The trade deficit has increased from 0.9% of GDP in 1993-94 to 1.6% in 1994-95 and further to 2.7% in 1995-96. The current account deficit has also risen from 0.5% of GDP in 1993-94 to about 1.7% in 1995-96. However, the trade deficit in the period April-December, 1996, is \$ 2824 million, little less than \$ 3297 during the same period in 1995. The fall is due to a decline

in imports. The imports growth slowed down to 4.7% in the period April - November, 1996 from 31.4 percent in the corresponding period of previous year. Export performance has not, however, contributed to the fall in trade deficit. Growth rate of exports was only 7.8 percent in November-April, 1996, which is down from 24.5 percent in the year 1995.

The oil pool sector deficit has been burgeoning and is feared to go beyond Rs. 17,500 crores. The POL import bill went up by 27 percent in 1995-96, and it is higher by 41 percent in the period April-December, 1996 over the same period in 1995. This has put severe strain on BOP as well as general health of the economy. Moreover, positive invisibles balance, which had been offsetting the negative effect of import growth on trade balance, is likely to decline in 1996-97.

If the trade as well as current account deficit has been rising in recent times, what has led to the rise in forex reserves? Certainly, this deficit is more than made up by capital inflows, which have been of a very high order since 1993-94. Although a higher proportion of this flow has been of non-debt creating nature, its composition sends alarming signals for the economy.

Out of total foreign exchange reserves, at the end of December 1996, that is \$ 19.7 billion, about \$ 5 billion were FII funds and about \$ 2 billion were NRI deposits. India attracted \$6 billion worth of foreign investments out of which only \$ 2 billion were FDI and rest were volatile portfolio investment. The breakup of

total foreign investment inflows shows that the FDI accounted for \$ 1500 million and portfolio investments for \$ 1121 million in the period April-December 1995. The FDI and portfolio investments again accounted for \$ 1710 million and \$ 2343 million respectively, in the corresponding period last year. Out of total portfolio investments, FIIs contributed to the tune of \$ 1002 million and \$ 1511 million respectively. In recent times, the external commercial borrowings have registered an increase and as percentage of total capital flows, they have increased from 6.1 in 1993-94 to 13.6 in 1994-95 and 21.0 in 1995-96. This ratio is slated to increase even further in the year 1996-97.

The large forex levels which has come about by an unprecedented flows of FIIs and ECBs, impart temporariness to the total forex reserve position.

FIIs & Foreign Exchange Reserves:

The analysis in this section will now confine itself to the role of FIIs in increasing forex reserves and as a result, the fluctuations in exchange rate as well as the increasing intervention by RBI in forex market. By observing the table3.5, a similar trend of FIIs as well as forex reserves can be established.

TABLE 3.5: MONTHLY FII INVESTMENTS & FOREIGN EXCHANGE**RESERVES:**

Months	FOREX 1995	FOREX 1996	FII. INV. 1995	FII. INV. 1996
JAN	N.A.	20945	N.A.	279
FEB	N.A.	20652	N.A.	428
MAR	N.A.	21687	N.A.	312
APR	N.A.	21620	N.A.	435
MAY	24707	21620	66	295
JUN	24153	22091	117	357
JUL	24347	22441	210	303
AUG	23449	22441	179	81
SEP	23477	22900	123	123
OCT	22200	23635	104	233
NOV	21782	23752	49	111
DEC	22063	24110	121	98

Source : CMIE, various issues

In the year 1995, the FII investments started to pick up towards the end of May and the forex reserves also increased to \$ 24707 million. From July onwards, the FII inflows declined and the foreign exchange reserve also experienced a gradual decline. This continued till November, when FII investment were only \$ 49 million and foreign exchange reserves also touched a very low level of \$ 21782 million. But a spurt in FII inflows in December was followed by a sudden rise in forex reserves. A similar relationship between FII inflows and foreign exchange reserves can be deciphered from May to August in 1996. FII flows increased after slowing down in June and so also forex reserves. In August, the FII inflow was lowest at \$ 81 million for the year and forex reserves also stagnated at the previous month's level of \$ 22441 million. Again from August to October, the FII flows picked up and forex reserves also increased from \$ 22441 million to \$

23635 million dollars. Fortunately, there have been no massive withdrawals by FIIs in 1996, which would have either stagnated or even lowered the forex reserves drastically. The year 1997 so far, has seen a more distinct trend between FIIs inflows and Forex reserves. The forex reserves have continued their upward march despite the set back to industrial growth and export growth. Strong flows of FIIs along with ECBs have resulted in a record reserve position of \$ 29 billion by the end of April 1997.

FIIs, Exchange Rate and RBI Intervention

FIIs increase the supply of foreign exchange through their investments in capital market resulting in an appreciation of the exchange rate. On the contrary, when FIIs withdraw their funds rapidly, forex becomes scarce and the exchange rate also depreciates. This is the case with countries, where FIIs constitute a larger share of total forex reserves and the system of floating exchange rate is introduced. However, intervention by the central bank can correct the malady to some extent by undertaking regular purchase and sales operations of forex in the market.

Despite the shift to a market determined exchange rate system, the rupee-dollar rate had remained steady for over two long years (1993 to 1994). This was because of a large inflow of foreign portfolio investment in the year 1993 and most part of 1994. However, the govt. was forced to check appreciation by intervening in the market whenever required. Between March 1993 and

December 1994, about US \$ 13 million were added to the foreign exchange reserves because of RBIs dollar purchases. However, the reduction of net capital inflows, including FIIs, and the increase in current account deficit in 1995-96, ended the earlier period of surplus dollar availability. Thus, the normal supply and demand conditions in the forex market gave rise to expectations of a depreciation of exchange rate in the second half of 1995. The table 3.6 can show the slackening of FII inflows in the first month of August itself. Perceiving further depreciation, FIIs began to withdraw rapidly resulting a shortage of dollars in the market. In the process the rupee depreciated rapidly and the exchange rate which was hovering around at 31.37 until June, depreciated to 36.63 in a period of only 8 months. This period (between June 1995 to February 1996) experienced heavy RBI intervention, which is also found from the table 3.6 .

TABLE 3.6: FII INVESTMENTS, EXCHANGE RATES & RBI PURCHASES:

MONTHS	Net FII Inv. 1995	Net FII Inv. 1996	EXCH.Rt Agnst. \$ 1995	EXCH.Rt Agnst. \$ 1996	R.B.I. Net buys 1995	R.B.I. Net buys 1996
JAN	N.A.	279	31.37	35.73	N.A.	35.73
FEB	N.A.	428	31.37	36.63	N.A.	36.63
MAR	N.A.	312	31.65	34.39	N.A.	34.39
APR	N.A.	435	31.41	34.23	N.A.	34.23
MAY	66	295	31.41	35.01	N.A.	35.01
JUN	117	357	31.4	34.98	36	-1.02
JUL	210	303	31.37	35.5	338	-302.5
AUG	179	81	31.58	35.69	0	35.69
SEP	123	123	33.2	35.72	0	35.72
OCT	104	233	34.53	35.64	-784.5	820.14
NOV	49	111	34.74	35.73	-111	146.73
DEC	121	98	34.95	35.83	-56	91.83

Source : same as table 3.5

The table gives a detail account of the manner in which RBI has attempted to regulate the rapid fluctuations in the exchange rate in the last two years. The depreciation (market-led) of about 4.9 and 3.9 percents in September and October 1995, respectively necessitated sale of \$ 791.5 million by RBI in October. The downward pressure on rupee continued and RBI also went on with its sale of dollars in the market upto February, 1996.

However, the FIIs again became active and stepped up their investment in Feb. 1996 to the tune of \$ 680 million. With the availability of more dollars in the market, the downward trend of exchange rate reversed and rupee appreciated by 6.5 percent in March 1996. Seeing the upward pressure on rupee since then, the RBI continued to purchase dollars heavily throughout the year 1996. The appreciating tendency of rupee vis-a-vis dollar, since March 1996 till date, coincides with the huge volume of FII investments, pouring into country, in the corresponding period.

One point is clear from the analysis of the above table. The speculative pressure on the exchange rate of rupee is becoming more and more as a result of huge and highly volatile flow of FII investment. Severity of the exchange rate volatility can be gauged in certain months, when the RBI had to both purchase and sell dollars heavily in order to keep the exchange rate within limits. For example, RBI purchased \$ 1368 million and \$ 1192 million in January and July,

respectively. It also sold \$ 1770 million and \$ 898 million in these months, respectively.

A depreciated exchange rate is conducive to export growth, which fell from 21.4 percent in 1995-96 to only 4 percent last year (1996-97). The earnings from exports also rose from \$ 31.8 billion in 1995-96 to \$ 33.1 billion, a marginal addition of only \$ 1.3 billion. One of the reason for this fall is the appreciation of exchange rate last year. On the other hand, the depreciation of rupee has been one of the major causes of rapid FII withdrawal in second half of 1995. However, both FII and exports are sources of foreign exchange earnings. So, the Government seems to be in dilemma as to which one should take precedence.

The sterilized intervention by RBI to keep a tab on appreciating rupee, in recent times, has released too much domestic currency into the economy. It has resulted in the growth of money supply (M3) by 3.1 percent in first two months of fiscal year (1997-98) as compared to the same period last fiscal year. The money market is already suffering from excess liquidity because of low off-take by producers owing to industrial recession. This money supply growth when coupled with the rising public sector deficit could result in inflation. The inflation rate is already high at 5.8 percent in June 1997 as compared to 4.5 percent in June last year.

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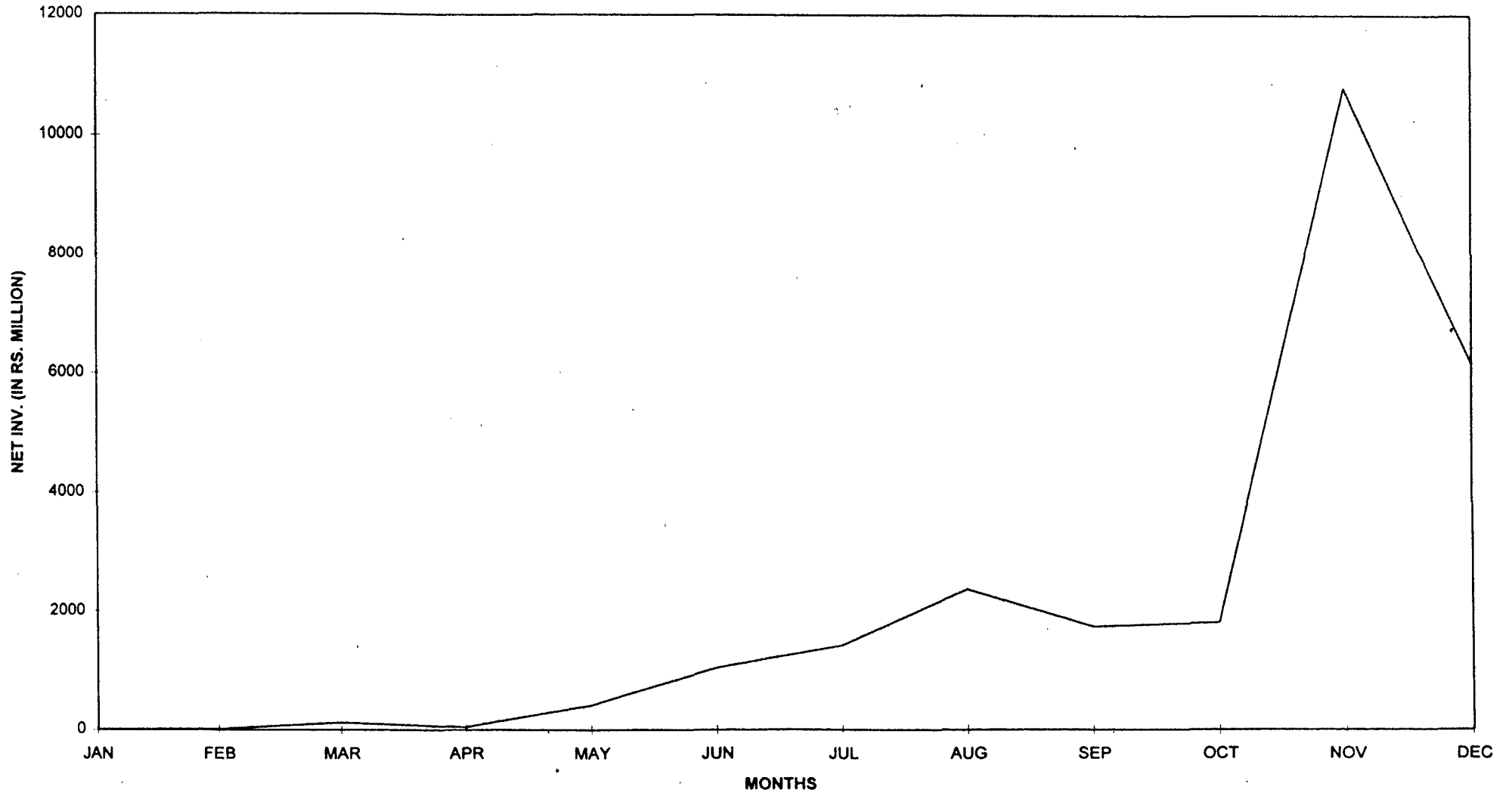
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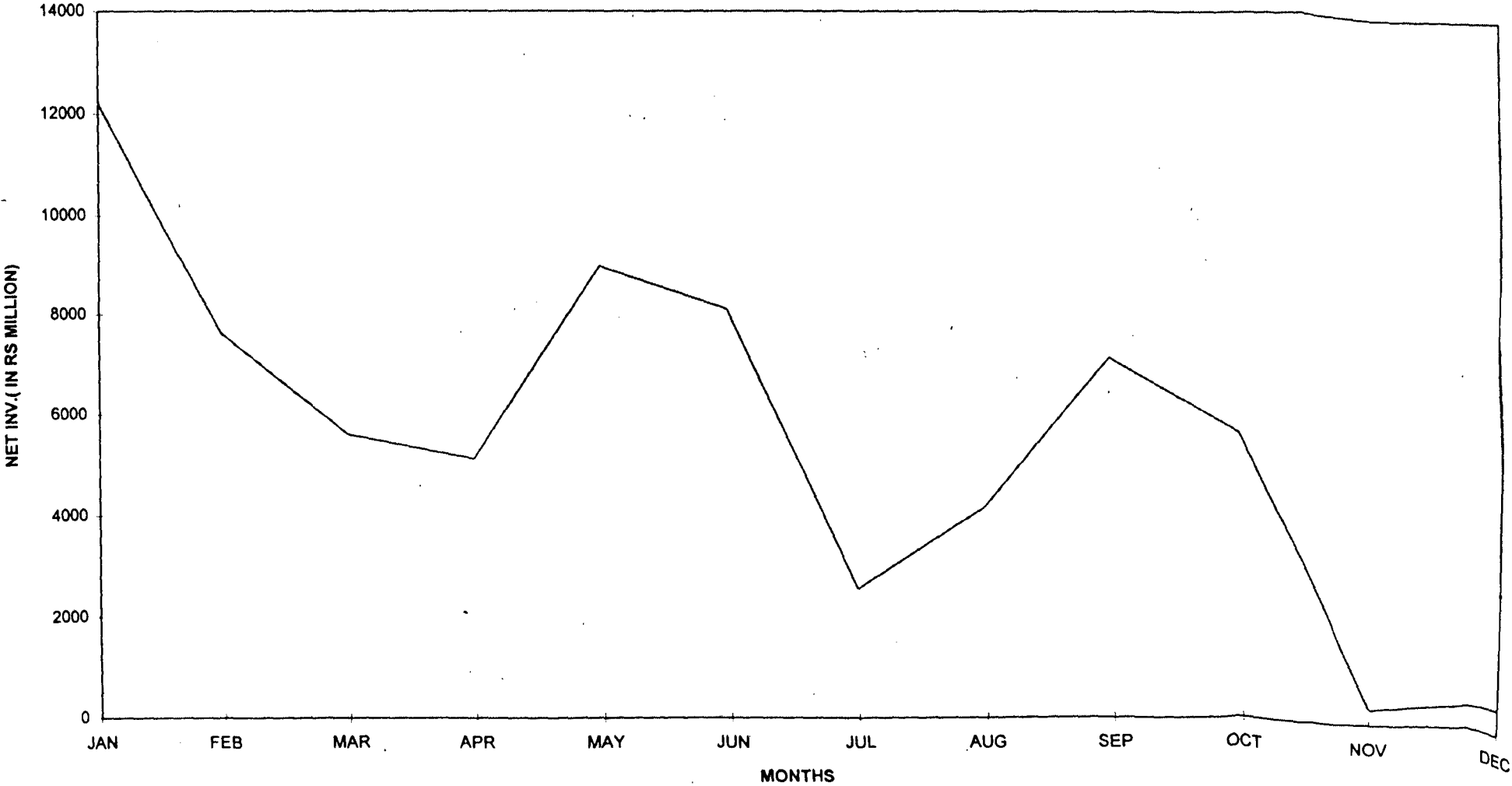
TABLE 1					
1993	FII	FII	FII		Monthly
Months	Purchases	Net. Inv.	Sales	Monthly	avg.
	in mln.Rs	in mln.Rs	in mln.Rs	Volat.	sensex
JAN	5.6	5.6	0	2.9540642	2532.4
FEB	12.6	12.5	0.1	2.45024655	2708.2
MAR	155.7	115.4	40.3	4.07860333	2398
APR	50.1	46.1	4	4.43693189	2204.8
MAY	417.6	413.5	4.1	3.38948256	2247.6
JUN	1041.9	1037.1	4.8	3.21296071	2281.571
JUL	1434.5	1413.8	20.7	2.62431641	2189.9
AUG	2510.5	2368.8	141.7	5.24546839	2555.6
SEP	1781.5	1743.7	37.8	2.62426521	2708
OCT	1891.5	1816.6	74.9	2.19681068	2700
NOV	10895.2	10795.7	99.5	6.44223968	2849.9
DEC	6422.2	6181.7	240.5	none	3301.7
TABLE 2					
1994	FII	FII	FII		Monthly
Months	Purchases	Net. Inv.	Sales	Monthly	avg.
	in mln.Rs	in mln.Rs	in mln.Rs	Volat.	sensex
JAN	12779.9	12219.7	560.2	5.27218285	3813.7
FEB	9061.4	7621.7	1439.7	3.24232787	4039.3
MAR	7638.5	5603.5	2035	3.03611545	3808.8
APR	7102.2	5113.8	1988.4	1.52251817	3824.7
MAY	10408.6	8958.6	1450	1.75221529	3756.1
JUN	10840.5	8104.4	2736.1	2.86812826	4135.7
JUL	4248	2542.9	1705.1	0.63866669	4107
AUG	6056.7	4149.8	1906.9	2.28219347	4407.4
SEP	9088.9	7141.6	1947.3	1.92361713	4511.2
OCT	8337.7	5668.4	2669.3	1.04111771	4351.3
NOV	3395	301.8	3093.2	2.17760071	4139
DEC	3714.7	485.3	3229.8	1.99649885	3949.8

TABLE 3					
	FII	FII	FII		Monthly
Month	Purchases	Sales	Net. Inv	Monthly	avg.
	in mln.Rs		Rs. Mill	Volat.	sensex
JAN95	4963.2	3316.6	1646.6	3.87249528	3651.7
FEB95	4087	2065.2	2021.8	3.36723931	3469.7
MAR95	4066.6	2239.8	1826.8	2.81558975	3408.3
APR95	3692.9	1828.9	1864	2.93909203	3359.3
MAY95	4312.9	2193.2	2119.7	2.51718884	3206.1
JUN95	5918.4	2244.5	3673.9	1.42273879	3336.5
JUL95	8630.4	2052.8	6577.6	4.21700017	3329.9
AUG95	7524.9	1906.6	5618.3	1.00467744	3402.8
SEP95	7163.7	3099.6	4064.1	1.68398768	3396.4
OCT95	5690.2	2462.9	3227.3	1.74854211	3528
NOV95	4130.5	2441.9	1688.6	5.60536229	3169.5
DEC95	6477.2	2269.4	4230	1.04313488	3060
TABLE 4					
	FII	FII	FII		Monthly
Month	Purchases	Sales	Net. Inv	Monthly	avg.
	in mln.Rs		Rs. Mill	Volat.	sensex
JAN96	11864	1890	9974	2.76296194	2979.3
FEB96	18380	2715	15665	4.63144818	3405.5
MAR96	13150	2411	10739	1.86617957	3327.3
APR96	17041	2195	14846	4.48958476	3600.8
MAY96	14130	4085	10225	1.54234913	3732
JUN96	15588	3382	12206	2.28790533	3906.5
JUL96	17485	6748	10737	2.56104696	3668
AUG96	N.A.	N.A.	2884	1.97090364	3449
SEP96	N.A.	N.A.	4383	2.59300071	3390
OCT96	N.A.	N.A.	8314	2.6818542	3159.5
NOV96	N.A.	N.A.	4065	2.99904793	3043.9
Dec-96	N.A.	N.A.	3658	3.79548914	2921.5

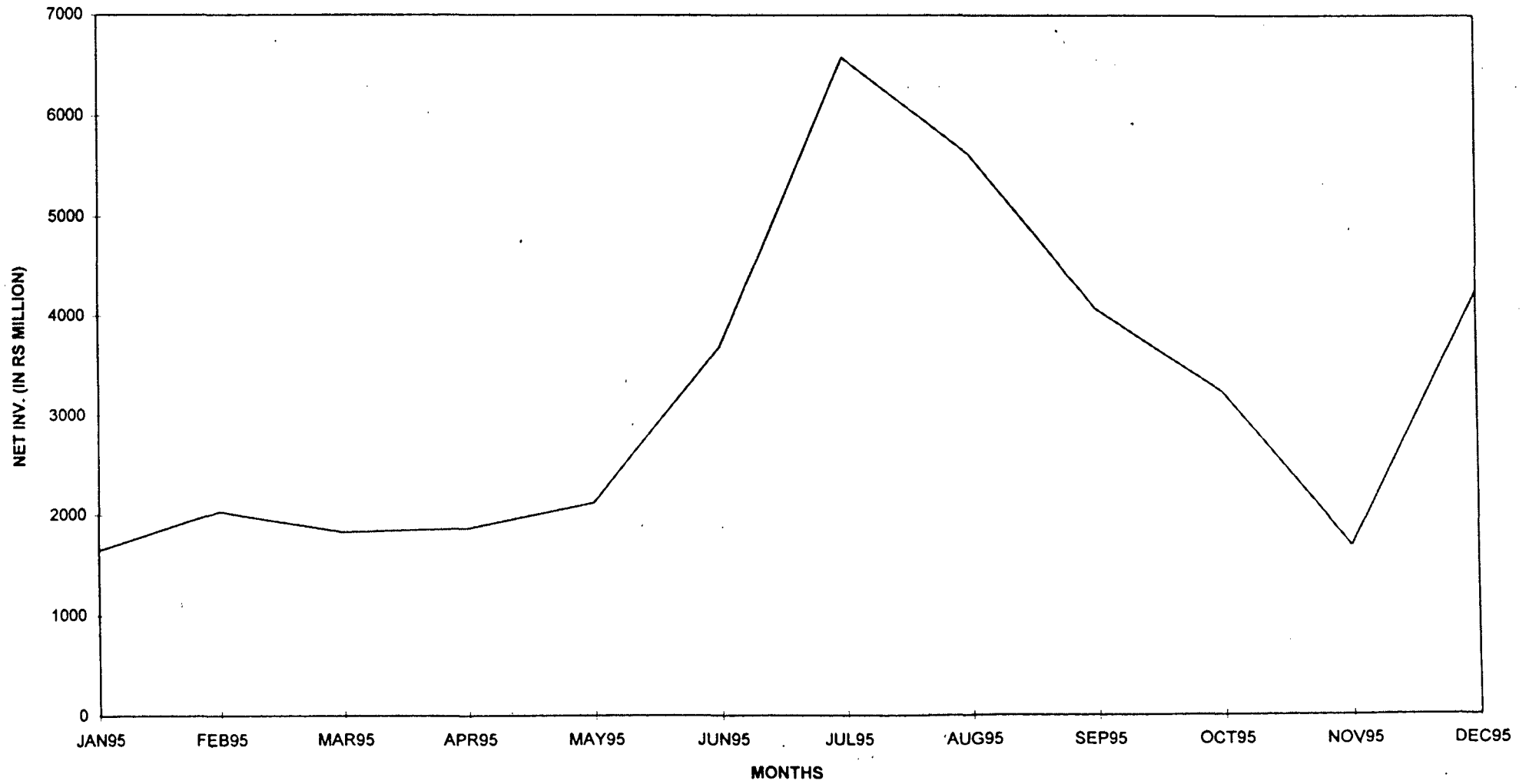
**TRENDS IN FII INVESTMENTS
(1993)**



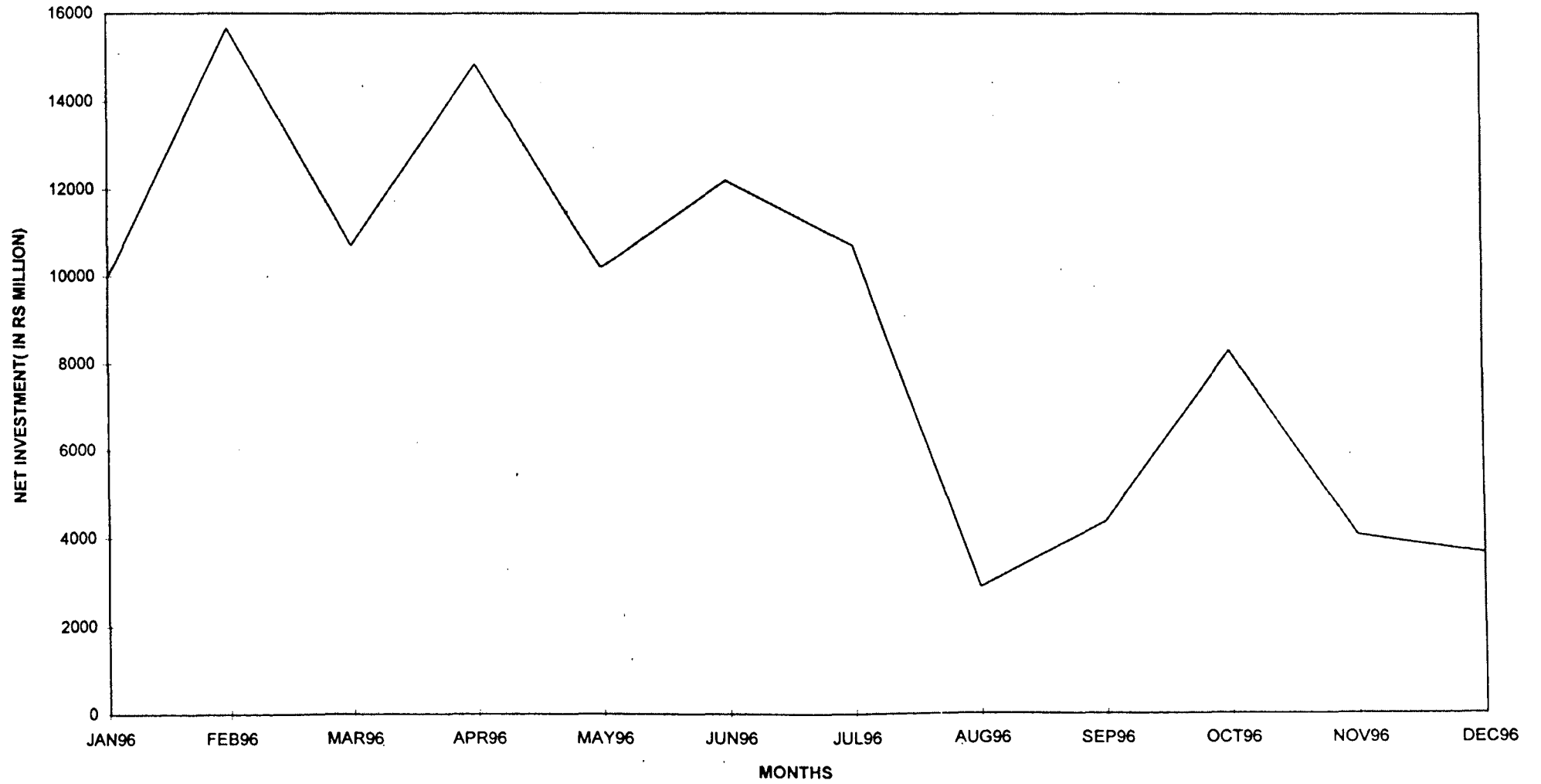
TRENDS IN FII INVESTMENTS
(1994)



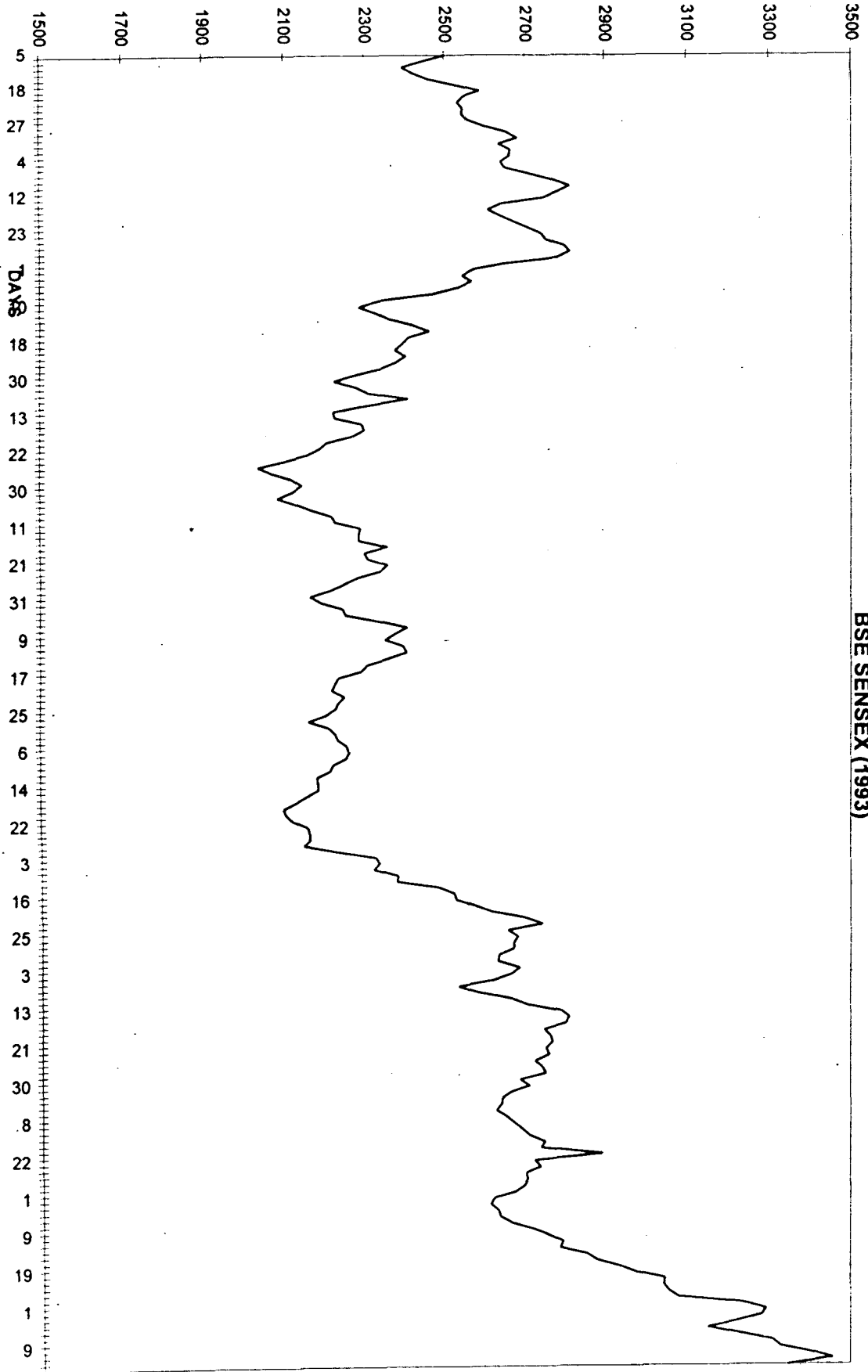
**TRENDS IN FII INVESTMENTS
(1995)**



**TRENDS IN FII INVESTMENTS
1996**



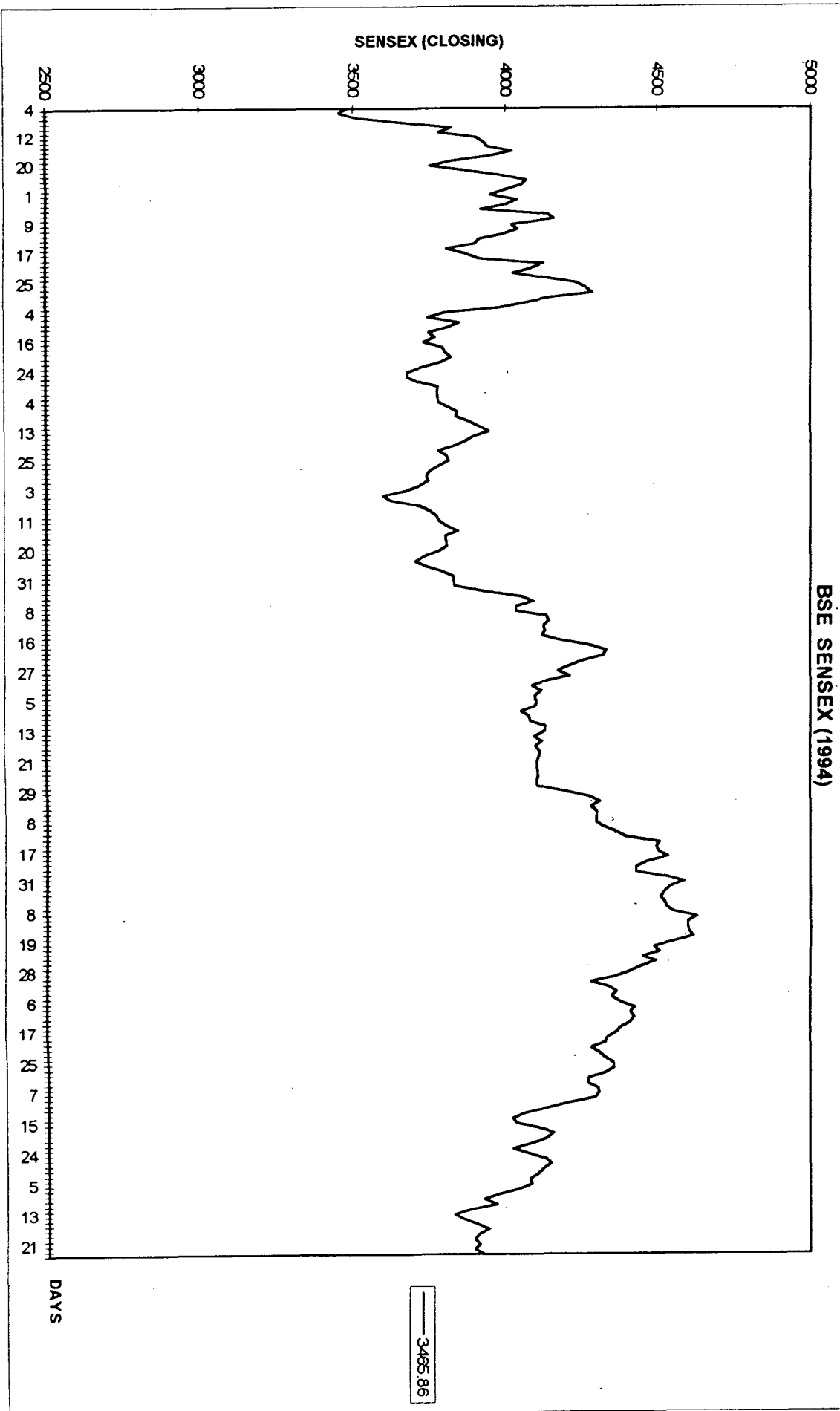
SENSEX (CLOSING)



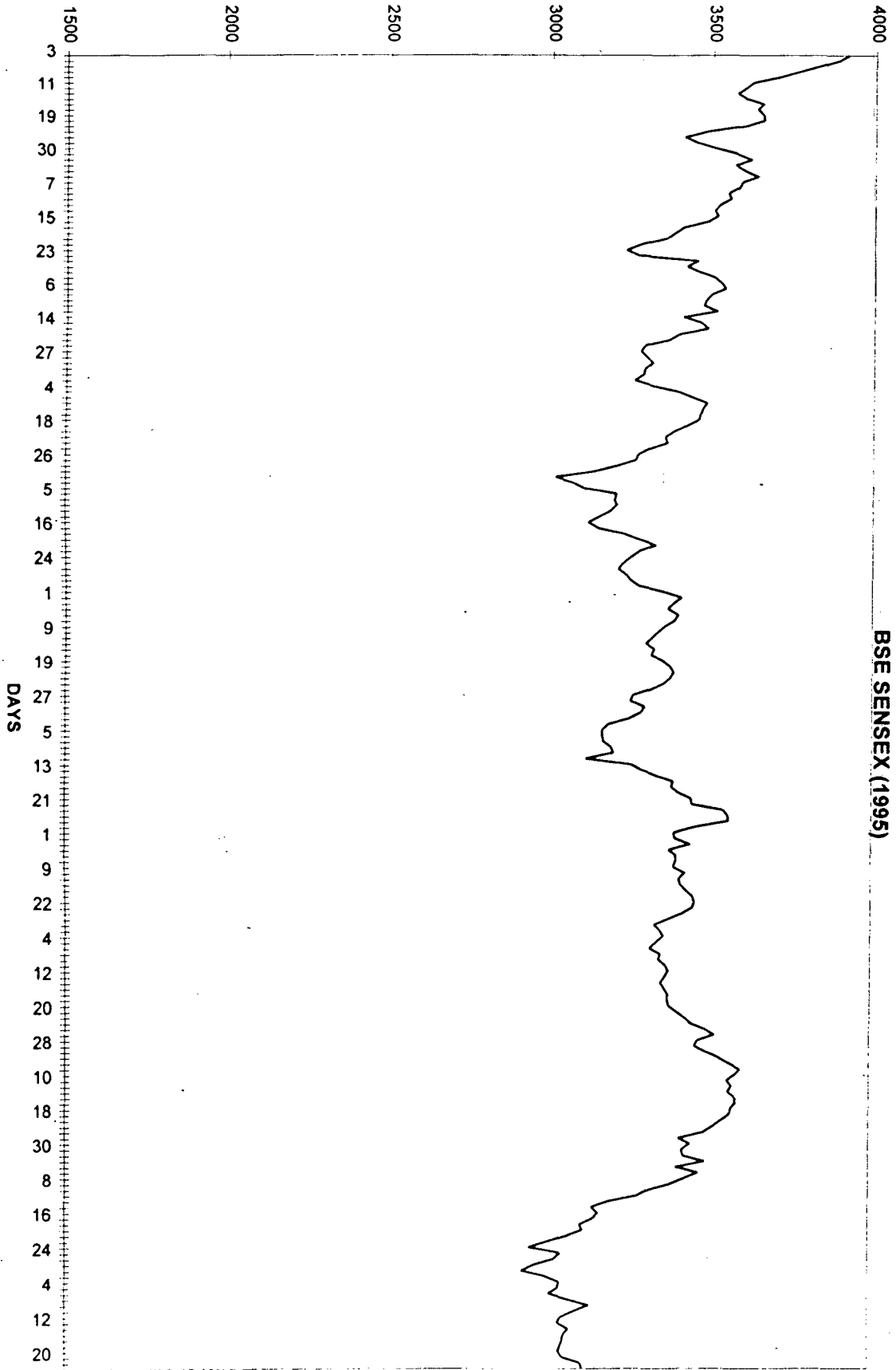
BSE SENSEX (1993)

2539

BSE SENSEX (1994)



SENSEX (CLOSING)



BSE SENSEX (1995)

3932.09

BSE SENSEX (1996)

