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Trend Analysis of FII Flows in India

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Abstract:

Given the significant and strong association of FII flows with domestic equity market, it is essential to investigate the trend of these flows in India. Therefore in this paper, we have analysed the trend of FII flows in India for the period 1993-94 to 2011-12 by observing the annual data. We have also examined the growth rate of Gross FII flows as well as FII flows in equity and debt market in India using Multiple Regression analysis. The impact of Global Financial Crisis of 2008 on the growth rate of FII flows in India has also been assessed by incorporating a dummy variable for it in the analysis. Results of trend analysis revealed that since 1993 FII flows have always been positive in India except for the years 1998-99 and 2008-09. Growth rate analysis shows that growth rate of FII flows in equity market is more than that of debt market. It also reveals that Global Financial Crisis of 2008 has significantly reduced FII flows in equity market but it leads to positive impact on FII flows in debt market though insignificantly.

Keywords: FII Investment, Trend Analysis, Growth Rate, Multiple Regression Analysis

1. Introduction

In the year 1991-92, the Government of India liberalized economy after realizing the need of globalization for achieving higher growth rate for an economy. At that time, the focus was also placed on attracting foreign flows for correcting the balance of payment crisis in an economy as well as to enhance the declining foreign reserves. Therefore, the Government revitalized its foreign investment policy and for the first time, permitted portfolio investments by foreign institutional investors (FIIs) in the Indian capital market. In the beginning, a lot of restrictions were placed on these investments but gradually the restrictions were eased out to attract FIIs. Consequently in April 1998, Indian gilts market was also opened up for the investment by FIIs so as to widen up the investment choices for them. Thus FIIs were allowed to invest in Indian equity as well as debt market to reap the maximum returns possible. The returns in the equity market are associated with stock index whereas the returns in the debt market are related with the interest rate. With the volatility in equity market, FIIs have the option of rebalancing their portfolio in favor of debt securities as they are considered to be safer investment. Thus opening up of gilts market for FIIs was a major step in the process of pulling FII flows in India. Since the entry of FIIs, their investment has increased from Rs. 2,595.1 crores in 1993 to Rs. 163350.1 crores in 2012 (SEBI). With the rising volume of investment by of FII flows in Indian market, they have been addressed as the drivers of the market because of their potential to affect the market. A lot of studies have already been conducted showing the strong and significant association between equity market returns and FII flows. Most of the studies have concluded that domestic equity market returns because FII flows in India [Mukherjee et al (2000), Chakrabarti (2001), Chakraborty (2007), Prasanna (2008)]. But the recent studies of Anuradha and Rajendran (2012) and Singh et al (2014) have found that FII flows cause stock market returns. Thus, given the significance of FII flows as well as the strong relationship of it with equity market, it is important to keep a check on these flows because the sudden withdrawal by FIIs can lead to disastrous consequences for an economy. Therefore the objective of this paper is to study the trends of FII investment in India. In this paper we have analysed the trend of FII flows in India for the period 1993-94 to 2011-12. We have also examined the growth rate of Gross FII flows as well as FII flows in equity and debt market in India using Multiple Regression analysis. The impact of Global Financial Crisis of 2008 on the growth rate of FII flows in India has also been assessed.

2. Data and Methodology

Our study is based on the secondary data. For the trend analysis, annual data is being examined for which the period covered is from 1993-94 to 2011-12. For the growth rate analysis, monthly data is obtained for the period April 2000 to December 2012. Data is obtained from the website of SEBI and Money Control. Six notations related to FII flows are used in the paper i.e Inpur, Insale, Indebtpur, Indebtsale, Inequitypur and Inequitysale referring to gross FII purchases, gross FII sales, FII purchases in debt market, FII sales in debt market, FII purchases in equity market and FII sales in equity market (in Rs. crores) respectively. We have applied trend analysis in order to examine the trends of FII flows in India. Then, we have examined the growth of Foreign Institutional Investment in India by conducting Multiple Regression analysis. In order to examine the impact of Global Financial Crisis of 2008 on the FII investment in Indian Market, we have incorporated dummy variable for it in our paper which is denoted as D (value of 1 for a period from August 2008 till December 2012 and 0 for the period April 2000 till July 2008). In the regression analysis, the

amount of FII purchases and FII sales in India are taken as dependent variables whereas time duration and dummy for global financial crisis are taken as independent variables. The estimated regression equations are as follows:

Gross FII Investment in India:

$$\text{Inpur} = \alpha + \beta T + D + cDT \quad \dots\dots\dots (1)$$

$$\text{Insale} = \alpha + \beta T + D + cDT \quad \dots\dots\dots (2)$$

FII Investment in Debt Market:

$$\text{Indebtpur} = \alpha + \beta T + D + cDT \quad \dots\dots\dots (3)$$

$$\text{Indebtsale} = \alpha + \beta T + D + cDT \quad \dots\dots\dots (4)$$

FII Investment in Equity Market:

$$\text{Inequitypur} = \alpha + \beta T + D + cDT \quad \dots\dots\dots (5)$$

$$\text{Inequitysale} = \alpha + \beta T + D + cDT \quad \dots\dots\dots (6)$$

Where

α = constant

- β = slope coefficient measuring growth rate
- T= time in months
- D= dummy variable for Global Financial Crisis
- c= change in slope coefficient

3. Discussion of Results

3.1. Trends of Annual FII Investment in India

Since September 14, 1992, FIIs were allowed to invest in Indian market but with suitable restrictions. These restrictions were liberalized with time in order to increase the flow of these investments in India. During the period from 1993 to 2012, there has been upward as well as downward trends in FII investment in India. Table 1 provides the data regarding gross FII investment in India since 1993-94 till 2011-12. By analyzing the figures it is found that FIIs have always been net buyers in Indian market for the period 1993 to 2012, except for the years 1998-99 and 2008-09 when their net investment turned negative. In the initial year of opening up of economy for FIIs, i.e. 1992 the investment was not as high because the policies regarding FII investment were still under pipe-line and some other obstacles were also there such as cumbersome settlement procedure, higher capital gain tax, high P/E ratio etc. Though these obstacles were present, still FIIs started investing in Indian market and raised their quantum of investment from 1993-94 in order to test the potential of returns available in an economy. Since 1993-94, the FII investment remained positive in India till 1998-99. A decline in FII investment in 1997-98 was noticed which was mainly owing to the South-East Asian Crisis and the period of instability experienced between November 1997 and February 1998. In 1998-99, this trend of dwindling FII investment continued due to which FIIs become net sellers for the first time ever after their entry to Indian market. Besides the repercussions of South-East Asian Crisis, other reasons behind their withdrawal from the market in 1998-99 were depreciation of rupee as a consequence of nuclear tests, political instability in economy which hurt the confidence of FIIs and they exited from Indian market. By 1999-00, FIIs regained their confidence in Indian market when an upsurge in their investment was noticed during this period. In 2003-04, there was a tremendous increase in FII investment backed by the strong fundamentals of an economy which attracted FIIs. In 2003-04 the net FII investment touched the figure of Rs 45,765 crores. Since then, they continued to be net buyers till the global financial crisis hit the economy in 2008-09 due to the result of which FIIs withdrawn from the Indian market and became net sellers for the second time. But, they did not stay away from Indian market for long and started investing again from 2009-10 even with higher amount. This trend continued even in 2010-11 and 2011-12 when the FIIs remained net buyers in India.

Year	FII Investment		
	Purchases (in Rs. Cr.)	Sales (in Rs. Cr.)	Net Investment (in Rs. Cr.)
1993-94	5593	466	5126
1994-95	7631	2835	4796
1995-96	9694	2752	6942
1996-97	15554	6979	8575
1997-98	18695	12737	5958
1998-99	16115	17699	-1584
1999-00	56856	46734	10122
2000-	74051	64116	9934

01			
2001-02	49920	41165	8755
2002-03	47060	44371	2689
2003-04	144858	99094	45765
2004-05	216953	171072	45881
2005-06	346976	305509	41467
2006-07	520506	489665	30841
2007-08	948018	881839	66179
2008-09	614576	660386	-45811
2009-10	846433	703776	142658
2010-11	992596	846158	146438
2011-12	921285	827562	93725

Table 1: Trends in Gross FII Investment in India
Source: SEBI

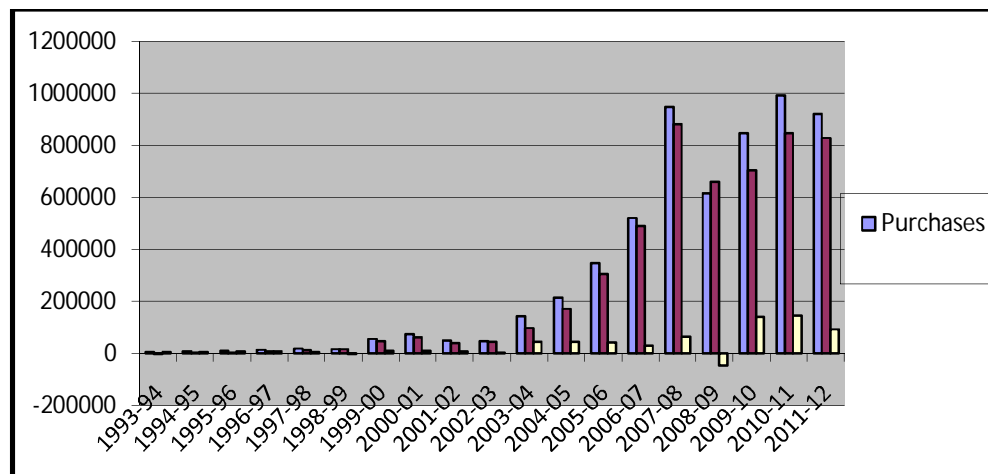


Figure 1: Gross FII Investment in India

Through the analyses of the number of FIIs registered with SEBI, it is found that there has been a tremendous increase in it as well. From the period of opening up of economy for FIIs i.e. 1992-93, this number of registered FIIs has always been increasing except for the years 1998-99 and 2001-02 when this number of FIIs declined as compared to the previous figures. The highest increase in number of registered FIIs was noticed in 2007-08.

Year	FII at the end of March
1992-93	0
1993-94	3
1994-95	156
1995-96	353
1996-97	439
1997-98	496
1998-99	450
1999-00	506
2000-01	527
2001-02	490
2002-03	502
2003-04	540
2004-05	685
2005-06	882
2006-07	997
2007-08	1319
2008-09	1635
2009-10	1713
2010-11	1722
2011-12	1765

Table 2: Growth of Registered FIIs in India
Source: SEBI

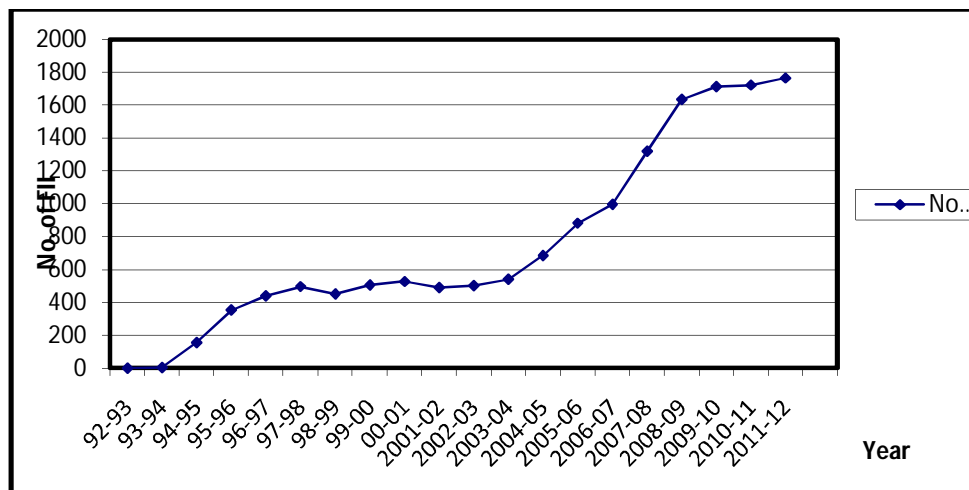


Figure 2: Growth of Registered FIIs in India

3.2. Growth Rate Analysis of FII Investment in India

After examining the trends of FII flows in India, the growth rate of these investments is also being examined by conducting Multiple Regression analysis. In the multiple regression analysis the amount of purchases and sales in India are taken as dependent variables whereas time duration and dummy for global financial crisis are taken as independent variables.

Firstly, the growth of gross FII investment is being examined, the results of which are depicted in table 3. The results of multiple regression analysis shows that gross FII purchases in Indian market has increased by 3.5 percent whereas gross FII sales in Indian market has grown by 3.6 percent on a monthly basis over the period April 2000 to December 2012. Results also reveal that global financial crisis has significantly reduced the FII purchases as well as sales in India as the coefficient of TD is coming out to be in negative term. Thus it shows that crisis negatively affected the FII investment in an economy and thus leads to withdrawal of funds by FIIs from market.

Independent Variables	Dependent variables			
	Inpur		Insales	
	Coefficients	p-values	Coefficients	p-values
Constant	7.857	0.000*	7.647	0.000*
T	0.035	0.000*	0.036	0.000*
D	2.306	0.000*	2.775	0.000*
TD	-0.027	0.000*	-0.031	0.000*
R^2	0.902		0.909	
Adjusted R^2	0.900		0.908	
Prob.(F-statistics)	0.000*		0.000*	

Table 3: Results of Multiple Regression Analysis
* indicates significant at 5% level

Next we have examined the growth rates of Foreign Institutional Investment in debt and equity market separately. The results are depicted in table 4. The result illustrates that FII purchases in debt market have increased by 2 percent whereas FII sales in debt market have grown up by 2.4 percent for the period covered under the study. The growth rate for FII purchases in equity market is 3.5 percent and for sale in equity market is 3.6 percent. By comparing the growth rates, it is proven that the growth rate of FII purchases as well as FII sales is more for equity market than for debt market. Results also reveal that crisis of 2008-09 has significantly affected FII investment in equity market. It has lead to considerable decline in the FII purchases as well as FII sales in the Indian equity market as the coefficient of TD for FII equity purchases and for FIIs sales is negative. But the study also observes that though crisis of 2008-09 negatively affected FII investment in equity market but FII flows increased in Indian debt market as the coefficient of TD is positive though insignificant.

Independent variables	Dependent Variables							
	Indebt pur		Indebtsale		Inequity pur		Inequity sale	
	Coefficients	p-values	Coefficients	p-values	Coefficients	p-values	Coefficients	p-values
Constant	4.882	0.000*	4.931	0.000*	7.778	0.000*	7.556	0.000*
T	0.02	0.000*	0.024	0.000*	0.035	0.000*	0.036	0.000*
D1	1.663	0.372	1.403	0.199	2.596	0.000*	3.089	0.000*
TD	0.004	0.812	9.265E-005	0.992	-0.031	0.000*	-0.035	0.000*
R^2	0.572		0.765		0.884		0.894	
Adjusted R^2	0.564		0.760		0.882		0.892	
Prob. (F-statistics)	0.000*		0.000*		0.000*		0.000*	

Table 4: Results of Multivariate analysis
* indicates significant at 5% level

4. Conclusion

Given the significant and strong association of FII flows with domestic equity market, it is considered necessary to investigate the trends of these flows in India. Therefore in this paper, we have analysed the trend of FII flows in India for the period 1993-94 to 2011-12 by observing the annual data. Trend analyses shows that FII flows in India have moved in both directions i.e. upwards as well as downwards. Results of trend analysis reveal that since 1993 FII flows have always been positive in India except for the years 1998-99 and 2008-09. The number of FIIs registered with SEBI has also risen during the period. We have also examined the growth rate of Gross FII flows as well as FII flows in equity and debt market in India using Multiple Regression analysis. The impact of Global Financial Crisis of 2008 on the growth rate of FII flows in India has also been assessed by incorporating a dummy variable for it in the analysis. Growth rate analysis shows that growth rate of FII flows in equity market is more than that of debt market which provides evidence for the equity market being more preferred by FIIs than debt market. It also reveals that Global Financial Crisis of 2008 has significantly reduced FII flows in equity market but it leads to positive impact on FII flows in debt market though insignificantly. This aspect shows the portfolio rebalancing behavior of FIIs in the event of crisis as well as the significance of presence of strong debt market in an economy. Thus, it can be concluded that even in the event of crisis, when the investors were reluctant to invest in equity market and they drastically withdrawn from the equity market, then Indian debt market being a safe investment zone with higher yields available, provided an alternative to investors to park their funds and thus we found that FII invested in debt market even during crisis.

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