Forgien Capital Inflows and its Impact on Domestic Saving In India

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Abstract: The various form of inflow of foreign capital (loans, FDI and portfolio) came in developing countries to bridge the gap between domestic saving and domestic investment and therefore, to accelerate economy growth. In India, many variables have been used in saving function. But in this study our aim is analyzing the long run effect of foreign capital inflow on domestic saving and not to estimate the saving function. In this paper much attention have been paid in past 10 years, relationship between foreign direct investment (FDI) , foreign portfolio investment (FPI) and domestic saving, the main purpose of the study has been determined whether in developing country like India foreign capital inflow and domestic saving are complementary or substitute.
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Introduction

Capital flows have direct and indirect affect in macroeconomic. Capital flows affect a wide range of economic variables such as exchange rates, interest rates, foreign exchange reserves, domestic monetary conditions as well as savings and investments. Some commonly observed effects of capital inflows that have been documented in recent studies include real exchange rate appreciation, stock market and real estate boom, reserve accumulation, monetary expansion as well as effects on production and consumption. Empirical studies that have begun to appear on the subject assess the impact of capital inflows upon output growth (Gruben and McLeod, 1996), differential macroeconomic effects of portfolio and foreign direct investment (Gunther, Moore and Short, 1996) and effects upon monetary conditions, savings and investment (Kamin and Wood, 1998).

Capital flows can affect domestic investment in several ways. First, FDI contributes directly to new plant and equipment ("Greenfield" FDI). Second, FDI may produce investment spillovers beyond the direct increase in capital stock through linkages among firms. For example, multinational corporations (MNCs) may purchase inputs form domestic suppliers thereby encouraging new investment by local firms. FDI for mergers and acquisitions (M&A) does not contribute to capital formation directly unless the new foreign owners modernize or expand their acquisitions by investing in new technology. FDI may also "crowd out" domestic investment, if MNCs raise productivity and force local competitors out of the market. This is usually the case when MNCs use imported inputs or enter sectors previously dominated by state-owned firms. Finally, FDI, foreign loans and portfolio investment may reduce interest rates or increase credit available to finance new domestic investment. On this last point, a study by Harrison, Love and McMillan (2004) finds that FDI in particular eases the financing constraints of firms in developing countries and that this effect is stronger for low-income than for high-income regions.

Foreign capital can have indirect impact on domestic investment through what Kose, Prasad, Rogoff and Wei (2006) call "collateral benefits". To attract foreign investors governments of developing countries have to implement sound macroeconomic policies, develop their institutions and improve governance.

Bosworth and Collins (1999) show that the impact of a one-dollar increase of FDI is an 81-cent contemporaneous rise in domestic investment and that of foreign loans is a 50-cent rise, while they do not find a statistically significant relationship between portfolio flows and capital formation. Find that aggregate foreign capital flows raise domestic investment, but the evidence on the different types of flows is more nuanced.

Hajivassiliou (1987), using data for 79 developing countries in the period 1970-82, and treating the demand for and the supply of loans separately, finds out that the demand for borrowing is positively determined by total debt service to export ratio, growth of GDP per capita, import to GDP ratio, interest and principal to export ratios and negatively by real GDP per capita.

The last decade has witnessed a tremendous increase in the mobility of international capital. Cross-country trends in capital flows reveal that private capital flows now dominate with official capital flows reduced to a trickle. Simultaneously, a

rise in portfolio capital has tilted the composition of international capital flows towards short-term investments, exposing individual countries to enhanced volatility and sudden withdrawal risks. These have been driven both by strong trends towards globalization, which has enabled pursuit of higher returns and portfolio diversification, and the market oriented reforms in many countries, which have liberalized access to financial markets.

The data in table1 indicate foreign direct investment as a percentage of gross fixed capital formation in three developing countries such as India, China and Brazil.

Table: 1 FDI inflows as a percentage of gross fixed capital formation (Percent)

Year	Brazil	China	India
2001	23.8	10.3	4.8
2002	20.0	10.0	4.7
2003	12.0	8.3	2.9
2004	17.0	7.7	2.8
2005	10.7	7.7	2.8
2006	10.5	6.4	6.8
2007	14.5	6.0	6.3
2008	14.7	5.3	9.6
2009	9.9	4.0	8.4

Source: UNCTAD, *World Investment Report*, 2009, Annex Table 5,

These countries have been selected because of faster growth rate of economic in the world during the last decade. According to data in Brazil and china FDI inflows to gross fixed capital formation was 23.8 and 10.3 percent in 2001, which has been declined to 9.9 and 4 percent in 2009 respectively. On the other hand in India FDI inflows to gross fixed capital formation was 4.8 percent in 2001 and that has been raised to 9.6 percent in the year 2009.

Comparison of the these countries in regard of amount inflow of foreign direct investment reveals that FDI inflows in China, Brazil and India were Million US$ 46878, 22457 and 5478 in the year 2001 respectively and that has been raised to Million US$ 95000, 25949 and 34613 in 2009 respectively. The following chart indicates the china was more attractive than India and Brazil for foreigner to invest.

Regarding table: 1 and chart: 1, it can be concluded the growth of domestic saving as a percentage of gross fixed capital formation is more that foreign capital inflow as a percentage of gross fixed capital formation in China and Brazil during the year from 2001 to 2009. On the other hand the growth of foreign capital inflows as a percentage of gross fixed capital formation is more that domestic saving as a percentage of gross fixed capital formation at the same period.

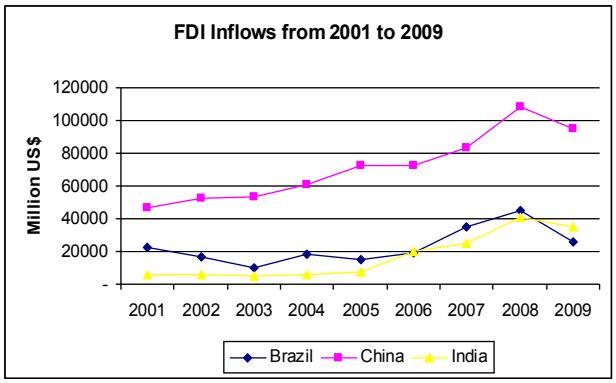

Chart 1. FDI Inflows

Developing the Model

For analyzing the impact of foreign capital inflow on saving rate, a number of studies in economic literature are based on cross-sectional data with a lot of explanatory variables. Similarly, in the case of India, many variables have been used in saving function, aim of these studies to examine the impact of different macroeconomic variables on saving rate of India. But in this paper, we have used simple model, because in this study our aim analysing the effect of foreign capital inflow on saving and not to estimate the saving function, so it is better to use simplest form [Sohan and Islam (1988)].

In India average gross Domestic Saving (DS) as percentage of GDP is 30.2 percent from 2001 to 2010 and average gross Domestic Investment (DI) as percentage of GDP is 30.9 percent during the same period, that's means $DI > DS$, *so* we can concluded domestic investment is equal domestic saving plus Net Foreign Capital Inflows (NFCI) as following equation:

$$DI = DS + NFCI \quad \ldots\ldots\ldots\ldots (1)$$

To examine the impact of foreign aid on domestic saving, we have been hypothesized a simple linear saving function as follows:

$$DS\,t = \alpha + B1\,PC\,t + B2\,FCI\,t \quad \ldots\ldots\ldots (2)$$

Where; *DS*= Domestic Saving rate, *PC*= Per Capita GNP, *FCI*= Foreign Capital Inflows

And *t* refers to the time period 2001-2010.

We have divided foreign capital inflows into two parts. First Foreign Direct Investment (FDI) and second Foreign Portfolio Investment (FPI) and to

study their effect on domestic saving, following equation formulated for this purpose:

$DS = \alpha + B1\ FPI + B2\ FDI$ .... (3)

Where; *DS*= Domestic Saving rate, *FPI* = Foreign Portfolio Investment, *FDI*= Foreign Direct Investment

Domestic saving rate is taken from various issues of Reserve Bank of India and per capita GNP is measured in constant market prices of India. The foreign capital inflows as measure by current account deficit are taken from RBI (Handbook of Statistics on Indian Economy, RBI, 2010).

Research Methodology

In what follows, we employ regression analysis to empirically examine the effects of capital inflows on domestic investment in developing countries. Before embarking on this analysis, however, it is useful to take a quick look at the summary statistics on net inflows of foreign resources to India. These data, presented in Table 2, which has been collected from Reserve Bank of India (RBI), the data reveals that Foreign Direct Investment (FDI) has been increased from Rs 18406 Crore in 2001 to Rs 176304 in 2010 and Foreign Portfolio Investment (FPI) has been rised from Rs 12609 to Rs 153511 at the same period. Compound Average Growth Rate (CAGR) of FDI during the year 2001 to 2010 was 35.5 percent, however the CAGR in the account of FPI was 23.5 percent at the same period. In the year 2009 FPI has showed negative growth rate, which can be concluded, that foreign portfolio investment has been effected by the global economic and financial crisis.

Table 2. Foreign Investment Inflow (Rupees Crore)

Year	Direct Investment	Portfolio Investment	Total
2001	18406	12609	31015
2002	29235	9639	38874
2003	24367	4738	29105
2004	19860	52279	72139
2005	27188	41854	69042
2006	39674	55307	94981
2007	103367	31713	135080
2008	140180	109741	249921
2009	161536	-63618	97918
2010	176304	153511	329815
CAGR	32.5	23.5	28

Source: *Total foreign investment as per balance of payments statistics (Handbook of Statistics on Indian Economy, RBI, 2010);

Regarding chart2 domestic saving in the year 2001 was Rs 297215 Corores, which has been increased to Rs 1425247 in 2010.

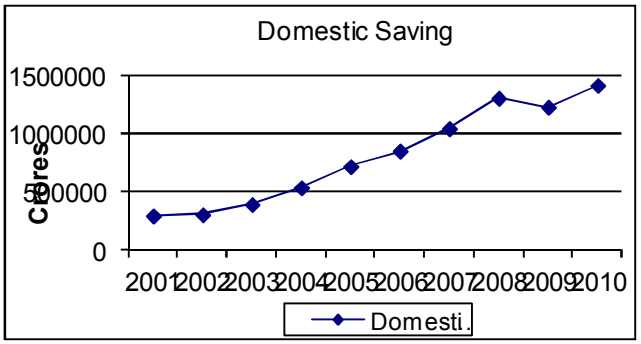

Chart2: Growth of Domestic Saving in India

Table 2 and chart 2 give a summary view of the overall consequences of development on investment in India. Three things are clear from these data. First, the share of FDI in investment increased in India. Second, the aggregate rate of investment increased in India. Third, the domestic saving rate showed a sharp growth.

The results of the regression exercises show that FCI inflows and GNPPC had a significant crowding-out effect on saving by domestic from 2001 to 2010. The results reveals if GNPPC increase by 1 unit, domestic saving (DS) increase by 36.12 units and if FCI increase by 1 unit, Ds increase by 1.55 units. The regression results also show that saving by domestic was strongly and positively related to FCI and GNPPC.

(1) DS = -409126.32 + 36.12 GNPPC + 1.35 FCI
(- 5.147) (9.9) (3.5)
R2 = 0.98376072

In the next step we divided FCI into two parts as Foreign Direct Investment (FDI) , Foreign Portfolio Investment (FPI) and their effect on domestic saving. The results of the regression exercises reveals when FPI change by 1 unit then DS change by 2.05 units and if FDI changes 1 unit then DS changes by 6.16 units. The regression results also show that effect of FDI and FPI were positive on the domestic saving. But, the effect of FDI on the domestic saving is more that FPI.

(2) DS = 320329.849 + 2.05 FPI + 6.16 FDI
(3.2) (6.01) (1.73)
R2 = 0.88017668

The same conclusions can be drawn from the following regression equation:

$Log\ (DS) = \alpha + B1 Log\ (FPI) + B2\ Log\ (FDI)$
Or
$\Delta(DS) = \alpha + \Delta\ (FPI) + \Delta\ (FDI)$

Δ *(DS)* = 6.217727+ 0.279667 Δ *(FPI)* + 0.402153 Δ *(FDI)*
R2 = 0.878832

Where Δ denotes change from 2001 to 2010, the figures in parentheses are t-statistics, and statistical significance at 1% level. Increased FDI inflows crowd out saving by domestic more than FPI.

Conclusion

Domestic recourse mobilization is one of the vital determinants of economic growth. Indian's saving performance is deprived as relative to successive countries in the region that had experienced sustained high growth. Therefore, India needs foreign capital to fill the gap between domestic saving and domestic investment.

Our main conclusion is that FCI inflows to India have a fairly strong crowding-out effect on saving by domestic. However, since one unit of FCI inflows crowds out more than one (1.55) unit of domestic saving, aggregate investment in the India economy still rises above the domestic saving rate. But the same fact also implies that net inflows of FCI necessarily increase the share of foreign investors in aggregate investment. In this study the effect of FDI and FPI on the domestic saving has been examined. Since one percentage change in FDI then 0.4 percent change in domestic saving and by one percent changes in FPI, domestic saving will be changed by 0.27 percent.

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