

India's Experience during Current Global Crisis: A Capital Account Perspective

Dayanand Arora

HTW Berlin Germany

Francis Xavier Rathinam

ICRIER, New Delhi, India

Mohammad Shuheb Khan

ICRIER, New Delhi, India

Abstract

It is generally believed that the global financial crisis left India virtually unaffected. However, the events that unfolded especially after the collapse of Lehman Brothers showed the vulnerability of the Indian economy. In this paper we analyze the experience of the Indian economy during the crisis from a capital account prospective. Our analysis shows clearly that, because of the increased openness of Indian economy in the past two decade, the financial crisis spilled over to India through financial as well as real channels. After record capital inflows until 2007, a sudden reversal of the short-term capital flows thereafter affected Indian economy in many ways. The Indian stock market appeared to be highly dependent on the foreign institutional investors. The exchange value of rupee depreciated as a consequence of the capital withdrawals from India. Not only that, the global liquidity crisis squeezed the external borrowings of the Indian corporate and banking sectors considerably. Signs of recovery can be noticed from second quarter of the 2009-10. However, the exposure of Indian economy has increased over time and there are still some areas of concern that will have to be addressed.

Our analysis shows that the effects of the crisis, which came through trade and capital outflow, were contained by effective use of fiscal and monetary policy. We also look at the gradualist approach adopted by India towards capital account liberalization. An analysis of the composition of capital flows proves the fact that debt flows are more prone to crisis than equity flows. In our opinion, the debt-creating flows, especially short-term debts, could be detrimental to the health of an economy because of their pro-cyclical nature.

I. Introduction

Before economic reforms, India resisted integration with the world economy through complex web of control on capital account transactions. But significant changes in its foreign trade and investment policy as a part of reform process which started in 1991, restrictions on various components of capital account have been relaxed. As a result of these liberalization measures the access of fund by Indian companies improved significantly, they raised funds in the form of equity and debt which contributed in their growth and expansion. But the contagion of the recent crisis brought the negative aspect of the integration. Several macroeconomic variables were adversely affected during the crisis. Government of India and RBI used several policy measures to mitigate the effects of the crisis.

This paper analyses India's experience during current global crisis from a capital account prospective. Paper is divided in six sections. Section II discusses the impact of financial crisis on Indian economy. Section III deals with the various policy measures used to counter the global crisis and analyses their impact. Section IV highlights the exposure of Indian economy. Section V discusses the openness of Indian case based on de-jure and de-facto methods. Section VI concludes the paper.

II. Impact of the Crisis

Experience of recent financial crisis shows that with increased openness of Indian economy the 'decoupling theory' does not hold. Global crisis spilled over in India through financial as well as real channels. Because of negligible exposure of Indian banks to distressed assets, India was not directly affected by the financial crisis, but the indirect effects through trade and capital flows were severe. After record inflow of capital, sudden reversal in trends affected Indian economy through various channels, stock market heavily dependent on FII investments crashed, Indian companies found it difficult to raise money in international market, Rupee depreciated by 23 percent in just 11 months and to contain deprecation RBI increased dollar liquidity leading to reduction in its foreign exchange reserve. Similarly recession in the world economy hampered the growth of exports. Detailed analysis of effects of the crisis on the Indian economy is following.

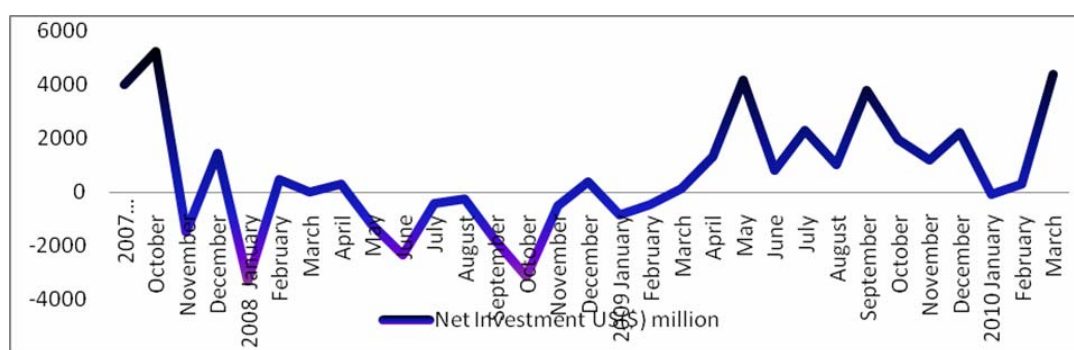
II.1. Drop in Foreign Institutional Investment

Data compiled by Securities and Exchange Board of India (SEBI) shows that after receiving record \$ 45.07 billion between 2004 and 2007, Indian economy witnessed reversal in FII equity flows in 2008 with an outflow of \$12.03 billion because of global financial crisis. Global investors hit by financial sector meltdown started selling their holdings in Indian companies in order to ease liquidity

conditions given huge losses in home markets and to look for safer investment in an uncertain environment.

September and October was the worst phase of global financial crisis when investment banking giant Lehman Brothers filed bankruptcy, Merrill Lynch was bought over by Bank of America in a distress sale and governmental support was provided to American International Group, Inc. (AIG) to thwart the collapse, during this period outflow of capital was \$ 4959.1 million largest in any two consecutive month. After the Bankruptcy of Lehman Brothers on 15 September only five trading days saw a positive inflow till October 31 2008. In this period alone, capital outflow was \$4309.1 Million.

Graph 1: Foreign institutional Investment (equity) in India



Source: Securities and Exchange Board of India

Outflow of capital continued in the month of November although at a slower pace. In the month of December a mini recovery can be noticed with net inflow \$357.6 million. However this process was halted by the Satyam episode which started another phase of capital outflow because of concern of FIIs about accounting practices of Indian companies. In 10 trading days following Satyam Chief's confession about irregularities in financial statement of his company, net outflow by FIIs went up to \$959.6 million. In the first half of the February net inflow was positive with \$93.1 Million, however after the presentation of Interim budget of 2009-10 on February 16 second half of the month saw huge outflow of \$559.7 million because of disappointment over missing policy measures to stimulate growth and rising fiscal deficit which surged to around to 5.6 % of GDP in 2008-09 from 2.6 per cent in 2007-08.

II.2. Reaction of India's Stock Exchange

Being dominant player in free float portion of listed companies, trading behavior of Foreign Institutional Investors (FIIs) is bound to impact the Indian share market. Cumulative investment of \$67.12 billion till December by FIIs in equity market played a crucial role in astonishing rise (from

3000 in 2003 to 21000 in 2007) of Sensex. However, with the emergence of crisis in US market FIIs started divesting their shares holding in order to ease liquidity problem. Reversal in FII flows led to a steep fall in BSE index in 2008.

Beginning from January, 8, 2008 in just 26 trading days BSE dropped by 23.43 % (from 20873 on 8-Jan-08 to 16608 on 12-Feb-08) because of huge withdrawal of FIIs. Biggest single day fall of 1408 pts was recorded in this period. Between March 2008 and August 2008 Sensex fluctuated around 15000 points.

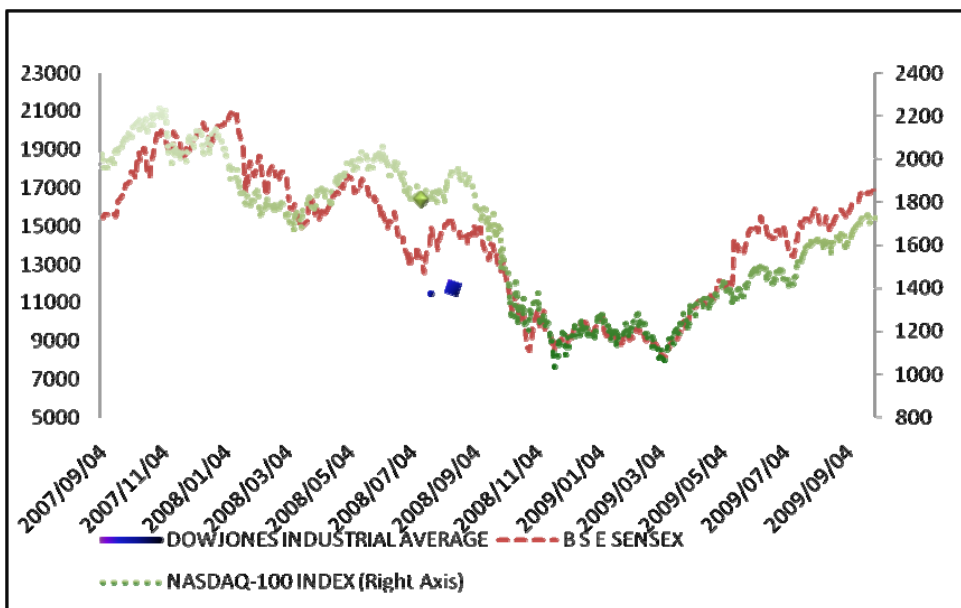
Table 1: Fall in BSE Sensex

	(In percent)			
	FII Withdrawal	Lehman Bankruptcy	Satyam Episode	Interim Budget
Percentage Change in BSE Index	20.43	43.46	16.1	15.3
Time Period	January,8,2008-February,12,2008	September, 2, 2008-October,27,2008	January, 6,2009-January, 23,2009	February,13,2009-March,9,2009
	(26 Trading days)	(37 Trading days)	(13 Trading days)	(16 Trading days)

Source: Reserve Bank of India (RBI)

But the real shock to stock market came around the bankruptcy of Lehman Brothers which not only led to massive selling by FIIs in equity market but also created panic among domestic investors. From September, 2, 2008 to October, 27, 2008 (37 Trading days) Sensex dropped by 43.46 percent.

Graph 2: Sensex



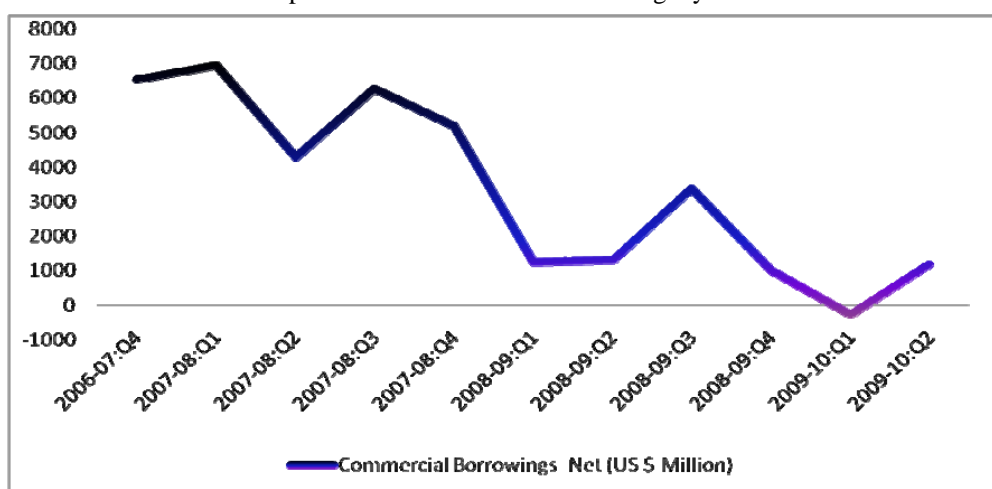
Source: Reserve Bank of India (RBI)

An important feature of stock market crash during the crisis was increased synchronization of Indian and US share market. The graph (2) shows BSE Index and DOWJONES Industrial Average on primary axis and NASDAQ-100 Index on the secondary axis. It is evident from the figure that movement in BSE and NASDAQ was in the same direction.

II.3. Drop in External Commercial Borrowings

Financial sector reform since 1991, on the one hand has resulted in downfall of Developmental Financial Institutions (DFIs) and on the other hand led to massive borrowings from external sector by corporate houses in the form of External Commercial Borrowings (ECBs). Developmental Finance institutions like Industrial Finance Corporation of India (IFCI), Industrial Development Bank of India (IDBI), Industrial Credit and Investment Corporation of India (ICICI) and State Finance Corporations (SFCs) were established to help industrialization by providing loans at subsidized rates to industries where gestation period was long. But financial sector reform involving interest rate deregulation, increased competition from banks and lack of concessional credit rendered the business modal of DFIs unsustainable¹. Based on recommendations of various expert groups ICICI and IDBI were transformed into banks which hampered the corporate sectors access to subsidized loans. However, successive liberalization of ECB policy opened up an alternate avenue for low cost financing. As a result corporate sector borrowed heavily from global institutions who were willing to take risk and provide fund at lower cost rather than expensive funds available domestically. Between 2003-04 and 2007-08 net medium term and long term commercial borrowings by Indian Companies \$41 billion.

Graph 1: External Commercial Borrowings by India



Source: Reserve Bank of India (RBI)

¹ Mathur, 2003

However, twin effect of financial crisis led to considerable fall of \$18 billion (from \$22.7 billion in 2007-08 to \$6.93 billion in 2008-09) in borrowings. First, recession which followed the financial crisis reduced the demand for goods and services, with pessimistic outlook all-around, companies deferred their investment plans. Second, facing liquidity problem after the collapse of Lehman Brothers, financial sector was reluctant to lend and lending rates touched record high. In fact in many cases lending rates were above the limit prescribed by the Reserve Bank of India (RBI). Concerned about the falling ECBs, RBI liberalized its policies by expanding the list of eligible borrowers, easing all-in-cost ceilings and relaxations in end-use-stipulations etc.

Despite these policy measures, borrowings dropped rapidly. In four quarters (from 2008-09:Q3 to 2009-10:Q2) following the collapse of Lehman Brothers, commercial borrowings were only \$5.3billion which was less than 33 percent of the money borrowed in the same time period (2007-08:Q2 to 2008-09:Q1).

II.4. Exchange Rate Appreciation and decline in Foreign Exchange Reserve

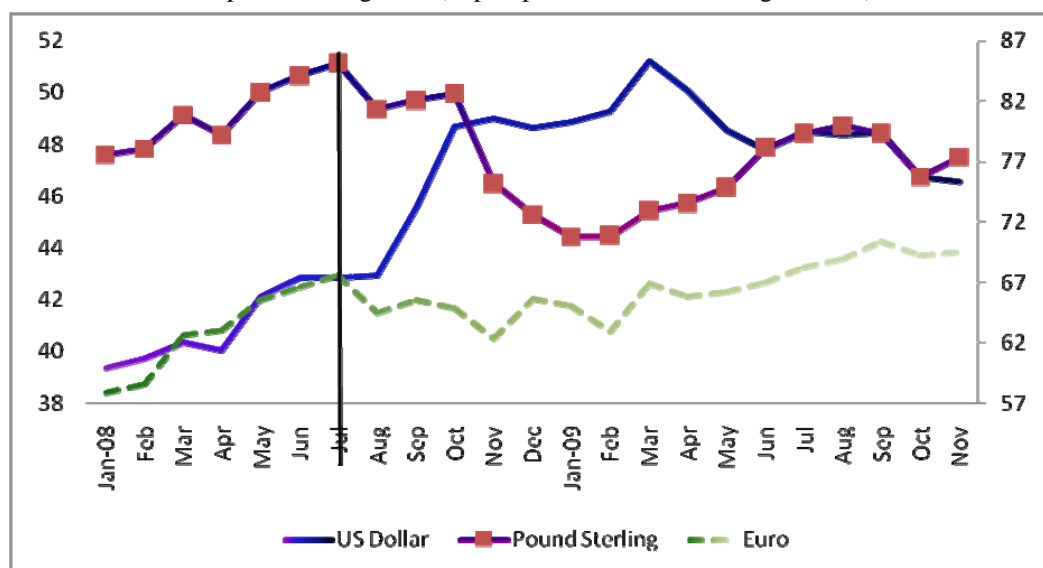
After the financial globalization India has been grappling with the problem of foreign exchange management. The problem that policy makers have been facing is that movements in exchange rate is influenced more by capital inflow or outflow than with the fundamentals in real sectors.

Financial crisis and subsequent reversal in capital flows led to substantial downward pressure on Rupee. Graph (4) which has Rupee per dollar on y axis and timeline on X axis shows sharp depreciation of rupee between March 2008 and March 2009. In this period rate of dollar in terms of rupee increased from Rs. 40 to Rs. 52, a depreciation of 23%. However, impact of the falling rupee may not have been as severe on the economy as magnitude of fall suggests, because of appreciation of dollar vis-a-vis other currencies in same period.

Panic in financial market during the crisis resulted in increased risk aversion of people world over. Nervous investors fled from stocks, corporate bonds and real estate to low yielding US Government Securities which is considered to be the safest investment. This flight to safety in Treasury Bills led to increased demand for dollar which resulted in its appreciation.

If we plot Rupee exchange rate with Euro and Pound Sterling on Y axis (right axis) in same graph (4), it shows that in initial stage reversal in capital flow was the dominant factor as rupee depreciated against all currencies. However, after the Bankruptcy of Lehman Brothers' flight to safety was the primary reason for the depreciation of Rupee, because exchange rates between Rupee Euro and Rupee Sterling Pound are moving in opposite direction of Rupee dollar exchange rate.

Graph 2: Exchange Rate (Rupees per Dollar, Pound Sterling and Euro)



Source: Reserve Bank of India (RBI)

Despite the fact that dollar appreciation vis-à-vis other currencies was partially responsible for the falling Rupee, it was a major cause of concern for policy makers in India. RBI tried to contain the depreciation by selling dollar in open market, in the process reducing its foreign exchange reserve from historical high of \$315 billion in May 2008 to \$245 billion in November 2008.

However, high selling by of dollar was not the only reason for the total reduction in reserve; valuation effect was equally important factor. Foreign currency assets which are major component of total foreign exchange reserve consist of dollar and non-US currencies (such as euro, sterling, yen). Given the fact that dollar was appreciating vis-à-vis other reserve currencies their value in term of dollar declined. US \$ million.

Table 2: Foreign Exchange Reserve

(US \$ million)

Change in Foreign Exchange Reserve between May-08 and November-08					
	Foreign Currency Assets	Gold	SDRs	Reserve Tranche Position in IMF	Total
	-65,907	-1,341	-8	328	-66,928
Sale/Purchase of U.S. Dollar by The Reserve Bank of India between May-08 and November-08					
Foreign Currency					
	Purchase (+)	Sale (-)		Net (+/-)	
Total	17755	53497		-35742	

Source: Reserve Bank of India (RBI)

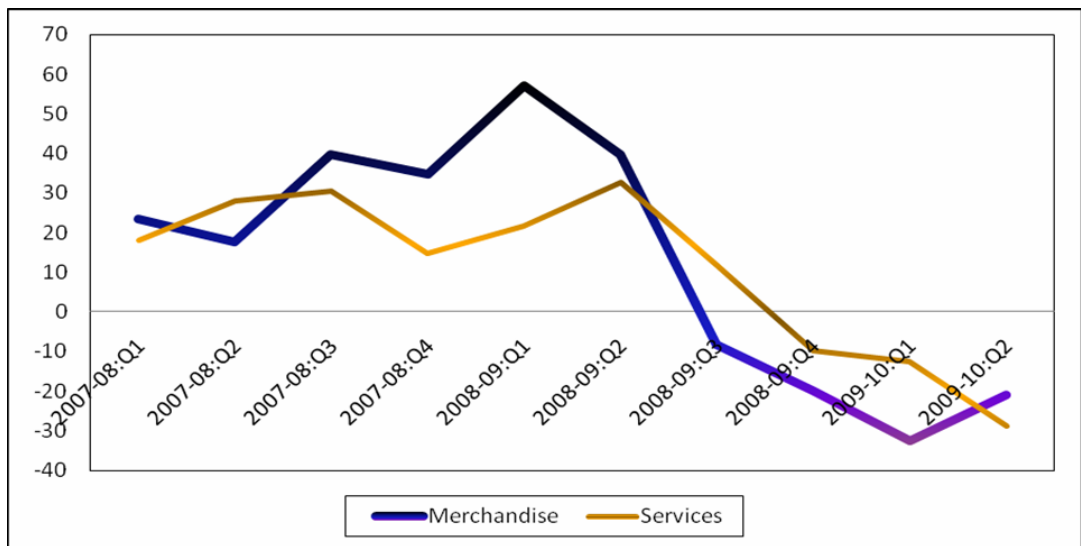
Data on sale and purchase of US dollar shows that between May 2008 and November 2008 RBI purchased only \$ 17.76 billion while it sold \$ 53.5 billion hence a net negative purchase of \$35.8 billion. But foreign currency assets declined by \$ 65.9 billion during the same period, indicating valuation effect of around \$30 billion.

II.5. Export Growth

India’s export registered more than 20 percent growth for 6 consecutive years since 2002-03, however the financial crisis and subsequent recession in the world economy decelerated the export growth to 3.4 percent in 2008-09. Graph (5) shows until 2nd quarter of 2008-09 merchandise export growth was positive, since then it has been consistently posting a negative growth rate. Similarly service export is in negative territory since 3rd quarter of 2008-09.

Graph 3: Year on year aggregate exports growth

(In percent)



Source: Reserve Bank of India (RBI)

Major commodities that experienced negative growth in first quarter of 2009-10 include iron ore (45 percent), gems & jewellery (45.2 percent), iron & steel (65.7 percent), machinery & instruments (30.1 percent) basic chemicals, pharmaceuticals & cosmetics (21.1 percent) and petroleum products (46.5 percent). Region wise analysis of export performance shows that export growth with major trading partners declined during the crisis. Rate of export growth to US declined from 9.9 percent in 2007-08 to 1.37 percent in 2008-09, to European Union from 27.7 to 11.4 and to Asia (Excluding Middle East) from 36.4 to 0.64 percent in same period.

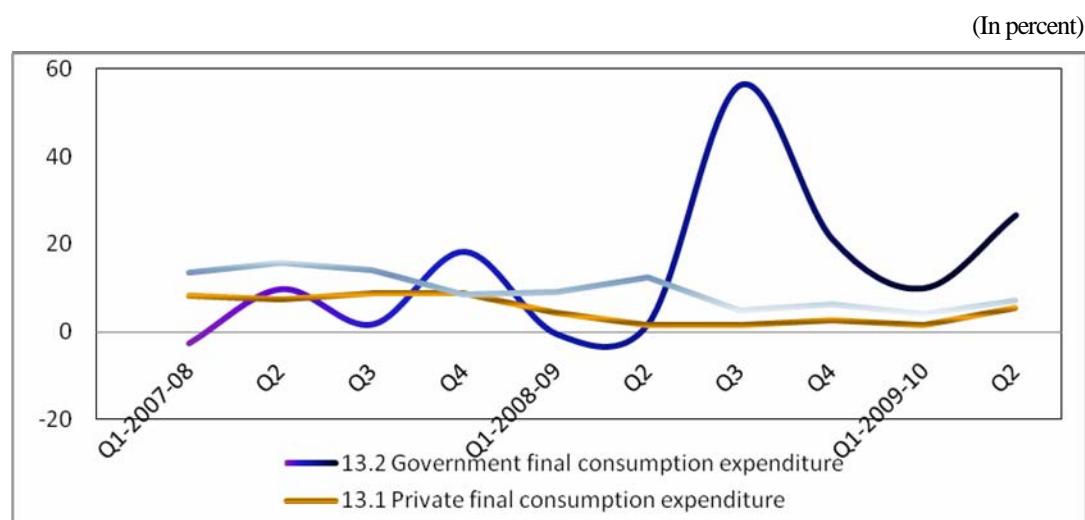
III. Policy Response

As it became evident that India was not insulated from the financial crisis and economic recession, Government of India and RBI responded with several policy measures. Government responded with fiscal stimulus while RBI's action comprised monetary accommodation and anti-cyclical measures². Detailed analysis of policy response is following.

III.1. Fiscal Policy Response

Deficit financing to meet escalating expenses has been an important policy instrument in a developing country like India where the government fails to generate sufficient revenues. Between 1980-81 and 2002-03 except for one year, fiscal deficit was always above 5 percent. In this scenario the enactment of Fiscal Responsibility and Budget Management Act (2003) was considered to be a severe jolt to the edifice of Keynesian Economics. But the critics of the Act ignored the fact that Keynes emphasized the demand management of the economy to stabilize the growth rather than perpetual higher mismatch between expenditure and revenue of the government. The reduction of fiscal deficit from 5.91 percent of GDP in 2002-03 to 2.69 percent in 2007-08 on basis of FRBM guidelines proved vital during the crisis. It generated the space for expansionary fiscal stance to boost aggregate demand to counter the crisis.

Graph 4: Growth (Y-o-Y) in Major Components of Domestic Demand

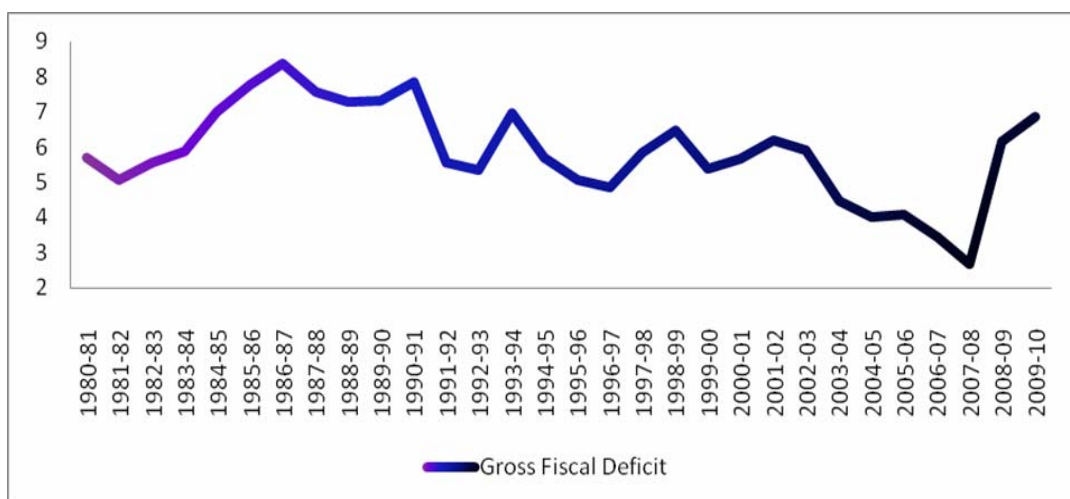


Source: Central Statistical Organization (CSO)

² Subbarao, 2009

Government announced several fiscal stimulus packages between Dec. 2008 and Feb. 2009 which included reduction in indirect taxes and sector specific measures. Apart from these measures, increase in government expenditure because of National Rural Employment Guarantee scheme, debt relief to farmers, expenditure on General Election(2009), payment of arrears and increment in salary after 6th Pay Commission and higher procurement prices around the crisis played a major role in sustaining demand especially in rural areas. Graph (6) shows decline in the growth of private final consumption expenditure and gross fixed capital formation. In response government increased its expenditure by 36 percent in third quarter of 2008-09.

Graph 5: Gross Fiscal Deficit (As Percentage to GDP)



Source: Handbook of Statistics on Indian Economy 2008-09, Reserve Bank of India

As a result of these policy initiatives, revenue receipts declined by 1 percent of GDP, from 11 percent of GDP in 2007-08 to 10 percent of GDP in 2009-10, while total expenditure increased from 14.4 percent to 16.6 percent in the same period, leading to an increase in the fiscal deficit from 2.6 percent of GDP in 2007-08 to 5.6 percent in 2008-09 and 6.5 percent in 2009-10.

III.2. Monetary Policy Response

Government's response through fiscal policy was cautious, given already massive expenditure through social sector schemes, burden of 6th Pay commission and difficulties associated with curtailing expenditure and increasing taxes, once crisis is over. But monetary policy response of Reserve Bank of India (RBI) was quick; it announced multiple policy measures through conventional and unconventional instruments to ease the liquidity condition in the economy.

Various policy rates were reduced to increase the Rupee liquidity in banking system. Cash Reserve Ratio (CRR) was reduced by 400 basis points (from 9 percent in Aug-08 to 5 percent in Jan-09), Repo Rate by 425 basis points (from 9 percent in Aug-08 to 4.75 percent in May-09), Reverse Repo Rate by 275 basis point (from 6 percent in November-08 to 3.25 percent in April-09) and Statutory Liquidity Ratio by 100 basis points. In October-08 RBI introduced special 14 days Term Repo facility to enable banks to meet their liquidity requirements of mutual funds. Export credit refinance limit was raised from 15 percent of outstanding export credit to 50 percent and special refinance facilities for financial institutions (SIDBI/NHB/EXIM) were instituted³.

RBI injected liquidity directly through open market operations by purchasing government securities. Unwinding of Market Stabilization Scheme (MSS) which was introduced in wake of depleting government securities during the period of huge capital inflow also became an important policy instrument. In fact buyback of securities worth Rs.1555 billion under MSS was the second most important component of liquidity injection into the system.

Table 3: Actual/Potential Release of Primary Liquidity since Mid-September 2008 till July 2009

		(Rs. billion)
		(Rs. billion)
1	Cash Reserve Ratio (CRR) Reduction	1,600
2	Open Market Operations	801
3	MSS Unwinding /Buyback/ De-sequestering	1,555
4	Term Repo Facility (14 days)	600
7	Increase in Export Credit Refinance	266
6	Special Refinance Facility for SCBs (Non-RRBs)	385
7	Refinance Facility for SIDBI/NHB/EXIM Bank	160
8	Liquidity Facility for NBFs through SPV	250
	Total (1 to 8)	5,617
	Memo: Statutory Liquidity Ratio (SLR) Reduction	400

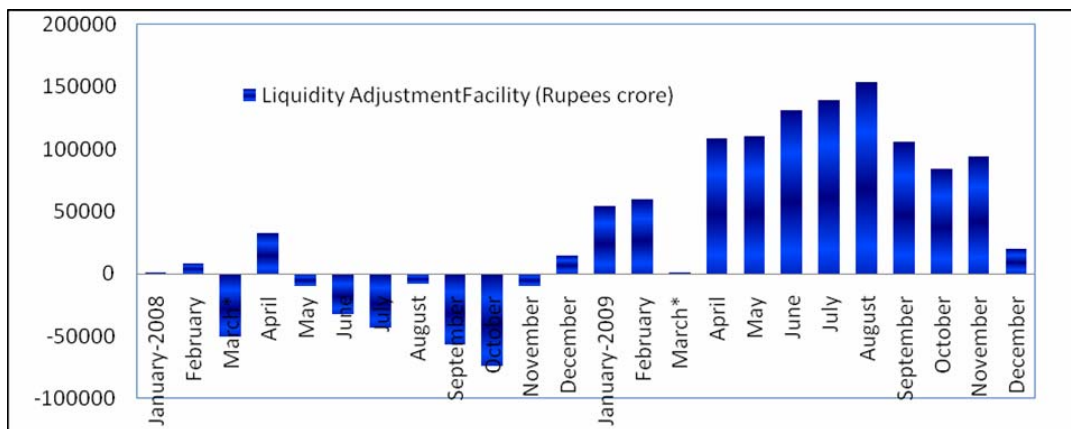
Source: Reserve Bank of India (RBI)

As a result of these policy measures, liquidity situation improved significantly. Table (3) shows that potential liquidity in system increased by Rs.5.6 trillion or 9.5 percent of the GDP. Average of daily Call money rates under the impact of reduction in CRR and Repo Rate declined from 9.9 percent in October-08 to 3.17 in May-2008.

Although RBI increased liquidity significantly, the utilization of liquidity by banking system was limited because of the low credit demand from the corporate sector and reluctance of commercial banks to lend during the recession.

³ Misra, 2009

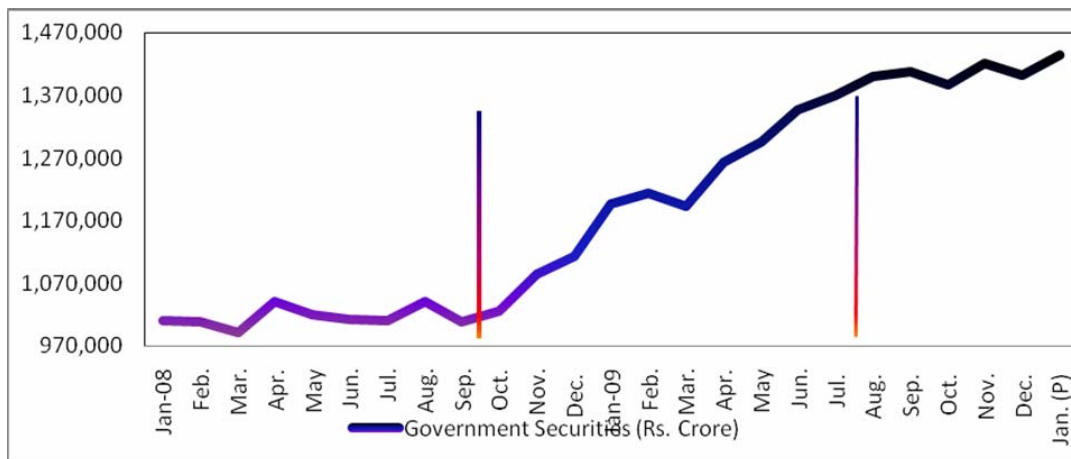
Graph 6: Liquidity Adjustment Facility (LAF), outstanding on the last Friday of the Month



Source: Economic Survey-2009-10

Note: Negative sign under LAF indicates injection of liquidity

Graph 7: All Scheduled Banks' Investment in Government Securities



Source: Reserve Bank of India (RBI)

Flushed with liquidity and no corresponding in loan advances to private sector banking sector used, banking sector used Liquidity Adjustment Facility (LAF) and invested heavily in government securities. Graph (8) shows that in year 2009, banks used LAF extensively to park their funds with RBI despite very low Reverse Repo Rate. Similarly, Graph (9) shows government used easy liquidity condition to finance its huge fiscal deficit. As mentioned above, major policy changes occurred in late 2008 and in the beginning of 2009 and government borrowing between September 2008 and August 2009 was Rs. 3936.17 Billion.

III.3. Capital Account Liberalization

Government took several measures to liberalise capital account in order to reverse the trends in capital flows. Some of the important policy measures undertaken during the crisis are following.

III.3.1. Portfolio Investment

- Cumulative debt investment limit for FIIs in corporate bonds was raised from \$ 3 billion to \$ 15 billion between October 2008 and February 2009⁴.

III.3.2. External Commercial Borrowings:

- In May 2008, entities in the services sector, viz. hotels, hospitals and software companies were allowed to avail ECBs up to US \$ 100 million per financial year for import of capital goods under Approval Route⁵.
- In September 2008, the ECB limit of US \$ 100 million was raised to US \$ 500 million per financial year for the borrowers in the infrastructure sector for Rupee expenditure under the Approval Route.
- In October 2008, to promote the development of the mining, exploration and refinery sectors in the country, the definition of infrastructure sector was expanded for the purpose of availing of ECB.
- Because of increase in cost of borrowing, all-in-cost ceilings were increased successively. Table (4) shows these increments.

⁴ Annual Report (RBI), 2009

⁵ RBI Monthly Bulletin, October 2009

Table 4: All-in-cost ceilings for ECB and Trade Credit

	All-in-cost ceilings for ECB (for approval and automatic route)	All-in-cost ceiling for trade credit
May, 2008		
ECB		
3 to 5 years	Raised from 6 month Libor + 150 bps to 6 month Libor + 200 bps	
More than 5 years	Raised from 6 month Libor + 250 bps to 6 month Libor + 350 bps	
Trade credits		
Up to 1 year		Libor + 75 bps
1 to 3 years		Libor + 125 bps
September, 2008		
ECB		
Minimum average maturity of 7 years	Raised from Libor + 350 bps to Libor + 450 bps	
October, 2008		
ECB		
3 to 5 years	6 month Libor + 300 bps	
More than 5 years	6 month Libor + 500 bps	
Trade credits Up to 1 year		6 month Libor + 200 bps

Source: Reserve Bank of India Monthly Bulletin, October 2009

- In October 2008, government announced that to further develop the telecom sector in the country, payment for obtaining license/permit for 3G spectrum will be considered an end-use for the purpose of ECB⁶.
- In January 2009, corporates engaged in the development of integrated township engaged in the development of integrated township became eligible again to avail ECB under the approval route, with a provision to review the policy in June, 2009.

III.3.3. RIN Deposits:

- Interest rate ceilings on FCNR (B) deposits of all maturities was increased by 175 basis points i.e. from Libor/Swap rates minus 75 to Libor/Swap rates plus 100 basis points between September 2008 and November 2008 (Finance Ministry, 2009).
- The interest rate ceiling on NR (E) RA deposits was increased by 175 basis points i.e. from Libor/Swap rates to Libor/Swap rates plus 175 basis points between September 2008 and November 2008⁷.

⁶ RBI Monthly Bulletin, October 2009

⁷ Ministry of Finance, 2009

III.4. Anti-cyclical Measures

Pro-cyclical behavior of financial institutions and its amplifying effect on the real economy has been a major cause of concern. Pro-cyclicality is predicted by financial accelerator theory which says that credit expansion and asset price increase- and bubble- are mutually reinforcing process. As asset prices start increasing the value of collateral goes up which makes financing easier, leading to further increase in demand and price of assets⁸. While in downturn value of collateral declines that makes it difficult for households and firms to obtain loan leading further fall in prices.

Countering pro-cyclicality in financial sector is formidable challenge, dynamic provisioning and sector specific risk weights are important anti-cyclical instruments in the hand of authorities. Banks are required to set aside a general provision against likely future loss, each time they write a loan on the basis of a formula which is sensitive to the cycle⁹.

Table 5: Risk Weights and Provisioning on Housing Loans and Real Estate Lending

Year/Month	Amount of Loan	Housing Loans			Commercial Real Estate	
		Risk Weight (%)		Provisions on Standard Assets (%)	Risk Weight (%)	Provisions on Standard Assets (%)
May 2002		50		0.25	100	0.25
January 2007	Upto Rs.20 lakh	75		0.40	150	2.00
	Above Rs.20 lakh	75		1.00		
May 2008	Upto Rs.30 lakh	50	(LTV=75%)	0.40		
		100	(LTV>75%)		150	2.00
	Above Rs.30 lakh	75	(LTV=75%)			
		100	(LTV>75%)	1.00		
November 2008	Upto Rs.30 lakh	50	(LTV=75%)	0.40		
		100	(LTV>75%)			
	Above Rs.30 lakh	75	(LTV=75%)	0.40	100	0.40
		100	(LTV>75%)			

Source: Report on Trends and Progress of Banking in India 2008-09

RBI has been active in using these counter cyclical measures to regulate financial institutions. As table (5) shows, before the crisis, risk weights and provisioning norms for housing and real estate loans were higher. The reason was to contain the exposure of banking system to sensitive sectors of the economy and thereby prevent mispricing of risk¹⁰. During the crisis provisioning on standard assets as well as risk weights were reduced to facilitate credit flow to these sectors.

⁸ Bank of Spain, 2002

⁹ Shyamala Gopinath, 2009

¹⁰ RBI, 2009

IV. Extent of Exposure

IV.1. India's Dependence on External Debt:

External Debt which indicates contractual liability of residents to non-residents plays a key role in economic transformation of capital scarce developing countries. However, it has also been the main source of crisis, short term external debt denominated in foreign currency in particular has been important factor triggering many emerging market financial crisis.

Because of cautious approach in allowing accumulation of foreign currency denominated external debt India sailed through the crisis, but the size of total outstanding external debt which reached \$242.8 billion in September 2009 from \$138 billion in 2006 makes it susceptible to crisis. Growth in external commercial borrowings (ECBs) from \$26.4 billion in 2006 to \$ 66.8 billion in 2009 has been the main reason for the huge increase in external debt. Accordingly commercial borrowings have become major constituent with a share of 27.8 percent in total external debt; Non-Resident Indian (NRI) deposits (18.9 percent), short term debt (17.5 percent) and multilateral debt (17.4 percent) are other major components. US dollar denominated debt dominates the currency composition with 56.5 percent followed by Indian Rupee (15.1 percent) Japanese Yen (13.4 percent) and Special Drawing Rights (SDRs) (9.2percent)¹¹.

Table 6: India's External Debt

	March-06	March-07	March-08	March-09	Sept-09
ECB	26.6	41.44	62.31	62.42	66.79
NRI Deposits	36.28	41.24	43.67	41.55	45.97
Trade Credit	5.42	7.17	10.36	14.57	15.37
Total long- term	118.59	144.23	178.68	181.23	200.45
Total short-term	19.54	28.13	45.74	43.36	42.38
Total	138.13	172.36	224.41	224.59	242.82
Total debt/GDP	17.07	18.86	19.1	19.38	n/a
Short term debt/Total debt	14.15	16.32	20.38	19.31	17.45
Short term debt/Reserves	12.89	14.12	14.77	17.21	15.07
Reserves/Total debt	109.77	115.56	138.01	112.2	115.84
Debt service ratio	10.1	4.7	4.8	4.4	4.9

Source: Reserve Bank of India (RBI)

High absolute size of the debt shows an area of concern for policy makers in India; however, if we analyze debt ratios the situation looks comfortable. India's debt service ratio which is defined as total repayment of principle and interest as ratio of current receipts (excluding official transfers) has improved progressively. It has declined from 35.3 percent in 1991 to 4.9 percent in 2009 because of

¹¹ Mof, 2009

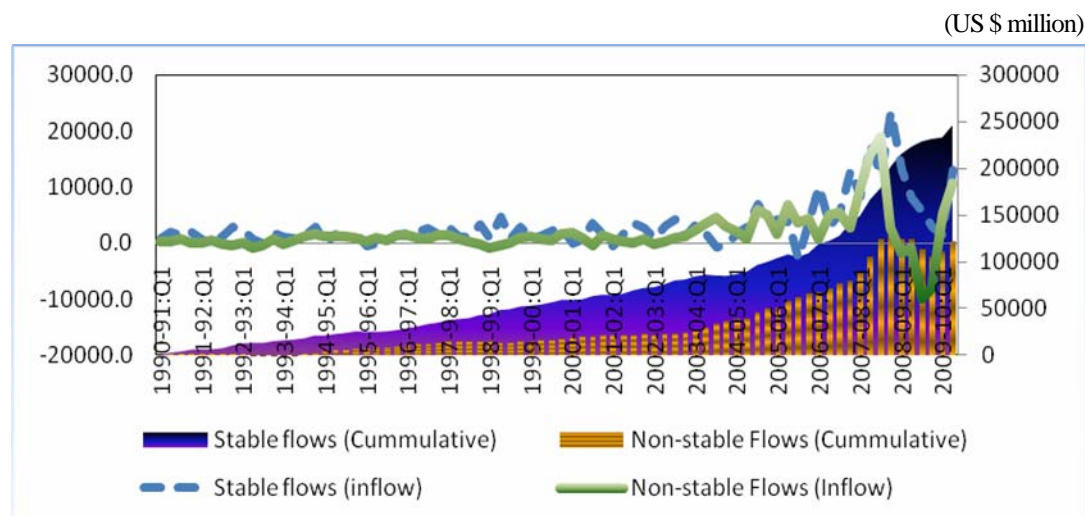
moderation in debt service payments and growth in external receipts. Among the twenty most indebted countries India's debt service ratio was third lowest in 2007¹².

With foreign exchange reserve of \$279, billion at the end of year 2009-10, India is quite comfortable in dealing with trade shock or a sudden reversal of capital flow. The Guidotti-Greenspan rule states that sufficient reserve should be maintained to meet the short-term external debt (one-year or less maturity) and there is consensus that cover of reserve should be around 3-4 months of import bill¹³. With reserves more than 6 times of short-term external debt and import cover of more than a year India is comfortably placed on both fronts. More stringent criteria than coverage of external debt is coverage of major stock of all non-FDI liabilities, on the assumption that all liabilities other than FDI are relatively liquid and could fly out of a country at short notice¹⁴. RBI data on India's Investment Position (IIP) shows that in 2008-09 foreign exchange reserve of \$252 billion was nearly adequate to cover entire stock of non-FDI liabilities of \$284.6 billion.

IV.2. Volatile capital flow

An important area of concern for policy makers in India is the rising share of volatile capital inflow. Experience of recent financial crisis highlights the problems associated with it; several macroeconomic variables were affected by the reversal in capital flows.

Graph 8: Stable & Non-stable Inflows (net)



Source: Reserve Bank of India (RBI)

¹² RBI Bulletin, October 2009

¹³ Abhijit Sen Gupta, 2008

¹⁴ Eswar S. Prasad, 2009

Various components of capital flows can be categorized into stable and non-stable flows depending upon their stability. Stable flow includes FDI, NRI Deposits, External Assistance, ECBs, Rupee Debt Service and Other Capital. While Non-Stable flows includes Portfolio Investment and Short Term Loans. Graph (10) shows that between 2004-05 and 2006-07 Indian economy received massive \$206.7 billion which includes \$117.2 billion of stable and 89.5 billion of unstable flows. In crisis ridden year of 2008-09 capital inflow was only \$ 8.68 billion which is only 8 percent of \$ 107 billion recorded in fiscal year 2007-08. Major reason for such a low inflow was outflow of non-stable flow by \$ 20.5 billion.

IV.3. Credit rating and cost of borrowings

Low sovereign credit rating is another area of concern for policy makers in India. Sovereign credit rating of a country plays an important role in determining the rate and extent of borrowing. Calculation of rating is based on several macroeconomic factors like GDP growth, inflation, default history, fiscal and external balance, reserve adequacy, interest rate differential between local and overseas market, political risk etc. These factors indicate the future ability and willingness of sovereign governments to service debt obligations on time¹⁵. Although, internationally accepted credit rating agencies like Standard & Poor, Moody and Fitch's clearly state the variables, their ratings have been pro-cyclical, unable to anticipate the crisis.

Though government of India does not access cross-border bond market, sovereign credit rating becomes a credit ceiling for most corporate houses (Jamini Bhagwati, 2009). At the time of the crisis Standard & Poor downgraded India's credit rating from BBB- stable outlook to BBB- negative outlook similar to Hungary and Ice land. It raised the cost of borrowings for Indian companies, leading to considerable reduction in ECBs, several projects supported with external fund turned unviable.

Sovereign's overall creditworthiness is measured on quantitative and qualitative variables, which creates space value judgment and subjectivity in assigning weights. Given the vulnerability of Indian companies in terms of increased cost of external financing in case of downgrading of India's sovereign rating, Government of India should question the methodology of low credit rating.

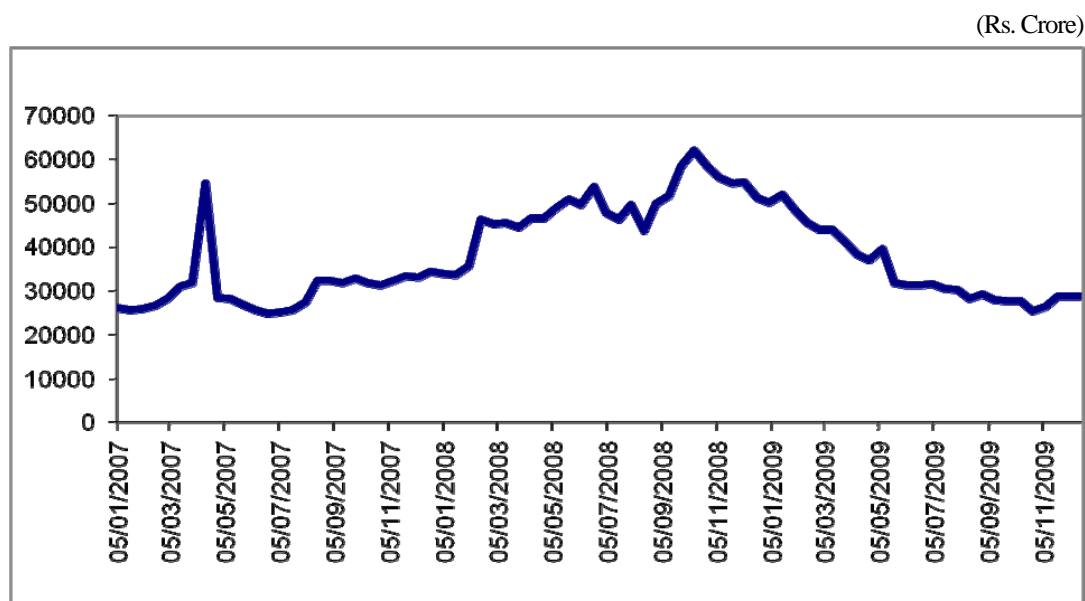
IV.4. International Banking activities of commercial Banks in India

The foreign currency borrowings (including inter-bank borrowings and external commercial borrowings) of Indian banks fell sharply first around March 2007 and later between the period September 2008 and June 2009. Thus, the stock of Indian banks' foreign currency borrowings was

¹⁵ MoF, 2009

\$21 billion at the end of June 2008 but it declined to \$13.8 billion at the end of June 2009.¹⁶ There was a clear evidence of tighter liquidity in international banking centers. The increasing costs of borrowings made it very difficult for Indian banks to roll-over their existing credit lines or to obtain fresh credits. A fall in the sovereign risk of India became an implicit cap for the credit rating assessment of all commercial banks from India for the purpose of obtaining liquid resources in foreign currencies.

Graph 9: Overseas Foreign Currency Borrowings of Commercial Banks



Source: Commercial Bank Survey (RBI), 2009

A review of the non-debt liabilities of Indian banks reveals that the non-debt liabilities of banks in India (not included under external debt statistics of India) also registered a fall between June 2008 and March 2009. This was particularly true of the bank equities held by non-residents, which declined from \$7.9 billion in June 2008 to \$3.7 billion in March 2009. The capital flows to Indian banks on account of American Depository Receipts (ADRs) and Global Depository Receipts (GDRs) issued by them also dried out and the volume of such capital flows was more than halved from \$4.6 billion in June 2008 to \$2.1 billion in March 2009, though it started picking up later in the year.¹⁷

¹⁶ RBI (February 2010), p. 388

¹⁷ Ibid.

V. Capital Control

Transmission of the crisis from developed to developing countries has brought back the debate of capital account liberalization and capital controls into prominence. Because of increased integration of Indian economy with world economy in the last decade it was not insulated from the global crisis. As discussed above, crisis spilled over in Indian economy affecting several macroeconomic variables. But channel through which economy was affected demands a review of capital control policy and degree of openness of Indian economy. Analysis of capital account liberalization process will help us see the gradualist approach adopted by India.

Analysis of capital control is divided in following two sections. In the first section, we discuss the *de-jure* and *de-facto* methods of measuring the degree of Integration of any economy with the world economy. In the second section, we apply these methods on India to assess the openness of Indian economy.

V.1. *Measuring the Extent of Capital Controls*

Literature on globalization especially financial integration of national economies with the global market proliferated in the wake of increased financial integration and recent crises to analyze the reasons, extent and the impact of financial liberalization. This section will briefly review some of the studies that have attempted to measure of extent of financial integration. There are broadly two groups of measures namely *de jure* measures that captures the extent of a country's integration defined the statutes and rule books and *de facto* measures which captures resultant level of integration using outcome based measures¹⁸.

V.1.1. *De jure Measures*

The single most important source of jure measures i.e. official information on the openness of countries, is the *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER) published by IMF. Until 1996, the report used to contain information on capital control titled "restrictions on payments for capital transactions". This row indicates whether capital control is present or not without giving any other details or disaggregation. A number of studies the most notable being Chinn and Ito (2002) and Lane and Milesi-Ferretti (2001) have utilized this information to construct an either or index (yes/no) or compute the proportion of the years a country had capital controls in a time series (Klein and Olivei, 1999). Alternatively Montiel and Reinhart (1999) have

¹⁸ For a review of de jure and de facto measures of financial integration see Edison and Warnock (2001), Stulz (2005), Edwards, (2007) and Kose et al. (2009). These measures are also denoted as actual and legal measures of capital mobility (Edwards, 2007)

attempted to construct a multivariate index appending the country information with AREAER, however, measurement errors and subjectivity are serious concerns in these attempts.

From 1997 onwards, IMF annual report publishes disaggregated capital control details grouped into 13 sub-categories. The first important study that has utilized this information is Johnston and Tamirisa (1998) however, the study is limited by the lack of availability of long time series information. Miniane (2004) has mapped the descriptive information available in the back volumes of the AREAER on the new 13 group classification and constructed the index of capital control from 1983 to 2002 for 34 countries. Chinn and Ito (2006) constructs an index of capital control for 181 countries from 1970 to 2005 for using information from AREAER namely the presence of multiple exchange rates, current account transactions, restrictions on capital account transactions and indicating the requirement of the surrender of export proceeds. Similarly, Quinn (1997) using AREAER based information on current account and capital account transactions appended by country specific sources has constructed an index in a 14 point scale.

The other source of capital account information albeit for only a limited number of countries is the OECD. The Code of Liberalization of Capital Movements published by the OECD on 11 categories of restrictions namely direct investment, liquidation of direct investment, admission of securities to capital markets, buying and selling of securities, buying and selling of collective investment securities, operations in real estate, financial credits and loans, and personal capital movements.

Alternatively Quinn (2003) and Mody and Murshid (2005) have used IMF data on closed capital and current account, exports restrictions, and multiple exchange rates have constructed a comprehensive index where the former includes 59 countries for 1950-99 and the latter over 150 countries for the period 1966-2000. Edwards (2007) has attempted to extend the index with country specific information from national sources.

There is another strand of literature which utilizes the official dates of implementation of controls/liberalization (Levine and Zervos, 1998; Bekaert, Harvey and Lundblad, 2001). However these measures cannot be classified as de jure and also suffer most of the shortcomings of the de jure measures.

*V.I.I.I. Critique of De Jure Measures*¹⁹

One of the important shortcomings of AREAER based de jure measures is that it is highly aggregative and subjective. AREAER does not provide detail information on which as features of capital account is liberalized and to what extent. Thus, it is very difficult to construct a measure that captures the nuances of liberalization using this information. However, this problem is solved to some extent as AREAER now published more detailed information on capital controls. Capital controls might be different depending on the parties involved (i.e. resident or non-resident) and the direction of

¹⁹ Refer to Kose et al. (2009) Stulz (2005) for a thorough discussion on the shortcomings in de jure measures.

capital flows (i.e. inflows or outflows). AREAER presents only the restrictions pertaining to residents thus making it inadequate and partial measure of capital controls.

The other general shortcoming of de jure measures is that it is silent on the effectiveness of the control i.e. the level of implementation. Strong controls in books do not imply strong implementation and compliance. First, the stipulated control might take time to materially reach the intended target due to procedural hurdles; second, de jure measures do not capture the extent of circumventing the controls by the residents and non-residents (Edwards, 1999). Thus, controls on books are only a necessary condition, which do not ensure compliance.

V.1.2. De Facto Measures

As the name suggests, de facto measures capture the actual level of control (integration) based on the outcomes that result due to the controls (liberalization). These measures use readily available economic variables to capture the extent of controls. These measures could be broadly classified in two categories based the focus of information namely interest rate based measures and capital flows based measures²⁰.

V.1.2.1. Measure Based on Capital Flows

The level of capital flows i.e. the sum of inflows and outflows, to GDP captures the extent of capital openness exercised in a country (Edison et al., 2004; Kraay, 1998). Two types of flow measures used in the literature: the gross flows which is the sum of total inflows and out flows that captures overall integration as it includes both the flows; second, net flows which captures exact direction. Alfaro et al (2004) use net FDI inflows to GDP as a measure of de facto capital integration. However, the gross flows as a proportion of GDP is considered to be a better measure as it is less volatile and a better representation of a country's global integration²¹. A number of studies including Hermes and Lensink (2003) Carkovic and Levine (2005) use gross inflows, especially FDI as a measure of openness. A caveat to flow measure is that it is prone to high measurement errors.

V.1.2.2. Measure Based on Capital Stocks

A number of other studies have used accumulated or stock of gross capital flows as a proportion of GDP to capture the long term integration (Lane and Milesi-Ferretti, 2001; Lane and Milesi-Ferretti,

²⁰ However, there is a third measure based on Feldstein and Horioka (1980) which tests for the integration of savings and investment in a country. If international capital flows are restricted then investment in a closed economy should closely follow the level of savings. We in this paper do not analyze this issue as

²¹ Measures based on flow variables are very sensitive due to high volatility.

2007). Some of the recent studies such as Prasad et al (2006) and Coricelli et al (2007), other than the sum of stock of external liabilities and assets as percentage of GDP, use subcomponents such as the ratio of portfolio and direct investment assets and liabilities to GDP and short-term debt as a fraction of total external debt.

An innovative de facto measure is proposed in Edison and Warnock (2003) where they have utilized International Finance Corporation Global index (IFCG) and International Finance Corporation Investable index (IFCI) from International Finance Corporation. IFCG as the name implies includes all the investible stocks available in a country but the IFCI stands for the portion that is available for foreigners. Thus the ratio of IFCI to IFCG would capture the extend of restrictions imposed on the foreigners.

The main criticism against de facto measures is that they do not capture the extent of intended control. It is also an imprecise measure of integration as it could widely fluctuate due to local and global business cycles and conditions of local financial markets²².

V.2. *Capital Integration in India*

Many of the above-mentioned studies have constructed the indices for capital openness for India and other emerging markets. De jure measures for the emerging economies including India has not changed much, but de facto measures show that they are far more integrated financially now than the last decade. In the following session would briefly discuss and compare alternative measures of integration for India.

V.2.1. *De jure measures for India*

A number of above-mentioned studies have constructed de jure measure for India. This section compares and evaluates Grilli and Milesi-Ferretti (1995), Miniane (2004), Chinn and Ito (2006) and Edwards ((2007). As discussed above, these measures do not capture the extent capital account relaxation in India in the past decades. Some of the studies such as Grilli and Milesi-Ferretti (1995) use AREAER show hardly any improvement in India's capital liberalization. However, the recent studies such as Edwards (2007) using finer classification of controls from recent AREAER and shows that Indian capital controls have improved significantly from 25 to 75 in a 100 scale indicating recent liberalization initiatives.

²² Due to this contamination and resultant endogeneity, it is difficult make any causal inference using these measures.

De jure measures for India

	<i>IMF (AREAER, 1996)!</i>	<i>Lane and Milesi-Ferretti (2001)</i>	<i>Chinn Ito (2006)~</i>	<i>Edwards (2007)#</i>	<i>Miniane (2004)\$</i>
1970-80	1	-	-1.105	25	-
1981-90	1	0.005	-1.105	25	0.917
1991-00	1	0.034	-1.010	75	0.92
2001-05	-	-	-1.010	-	-

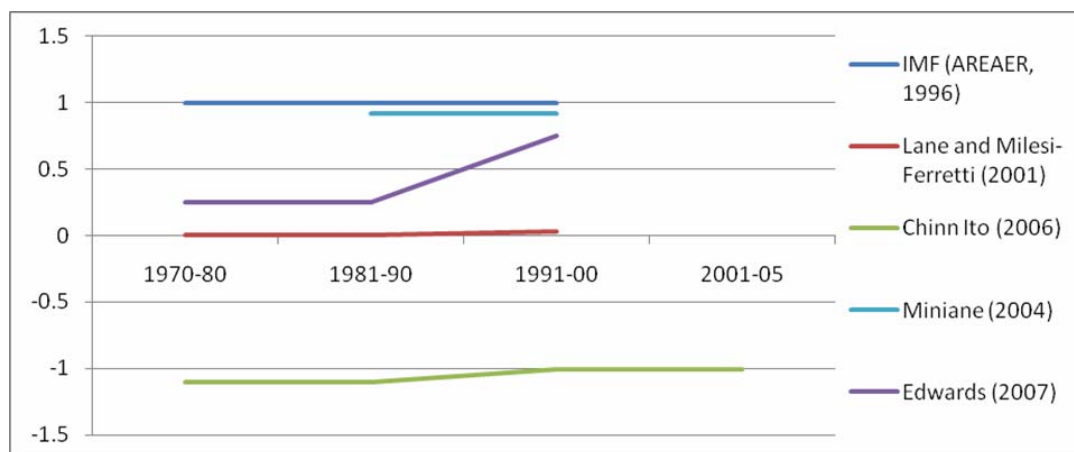
Notes: ! AREAER information on restrictions on payments for capital transactions is discontinued in 1996. Dummy-variable (1=yes,0=no)

~ A Dummy for the presence of multiple exchange rates, current account transactions, restrictions on capital account transactions and indicating the requirement of the surrender of export proceeds. Higher the value the more open the country is.

Values range from 0 to 100, higher the number the more open the country is; the data are corresponding to the end of period; cited in Prasad (2009)

\$ based on AREAER; ranging from 0 to 1, the lower the number, more open it is

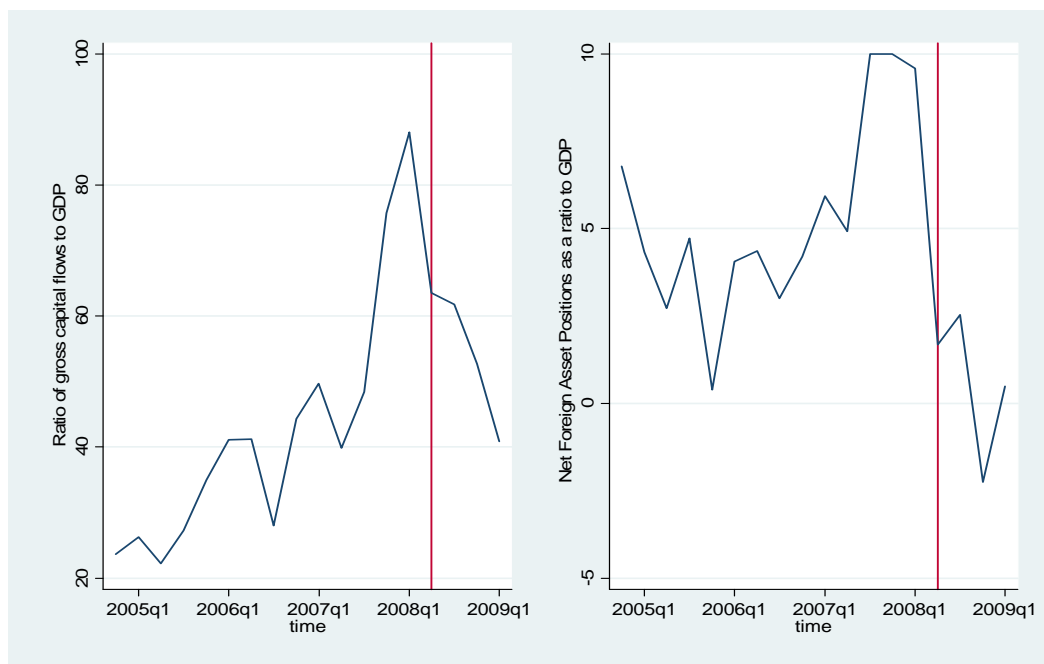
Time plot of De jure measures for India

V.2.2. *De facto measures for India*

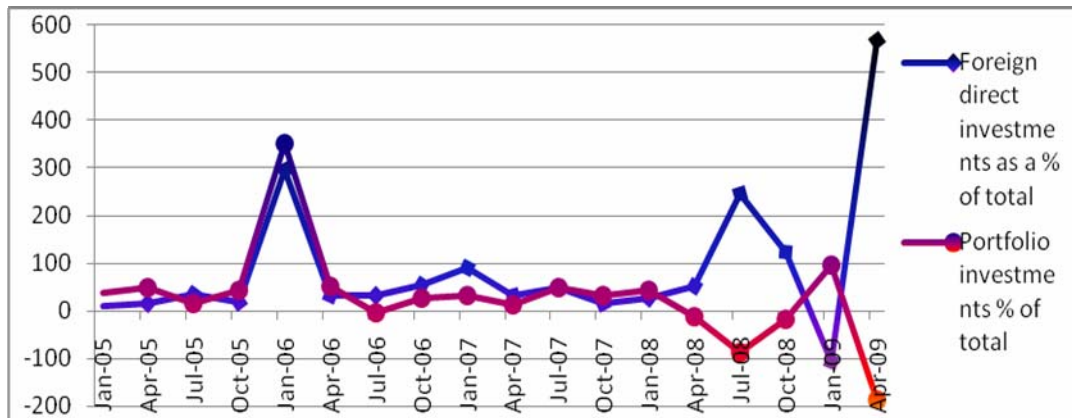
De facto measures for India show a contrasting picture. This section reviews, among other studies, Kletzer (2004) and Prasad (2009). As discussed above these studies use both the measures based on the flows, stocks and the subcomponents therein to capture the extent actual integration. These measures, as they include two way flows, capture the extent of risk sharing using the availability of multiple financial instruments and risk profile in an open environment (Kose et al, 2009).

V.2.2.1. Flow based measures

Prasad (2009) shows that gross capital flows as a ratio of GDP has substantially increased from 20 percent to 70 percent in the last two decades representing India's increased global integration. Recent data shows the ratio has reached almost 90 per cent before falling to 40 percent in the time of crisis. Looking at more disaggregated data would shed light on what are components that had led to this fall. Time plot of the ratio of gross and net flows to GDP

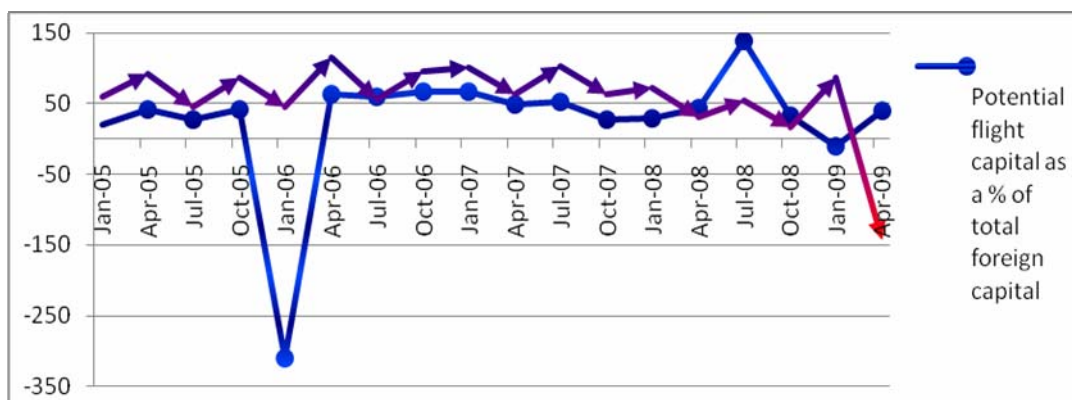


The net flows also show a similar trend of sudden reversal around May 2008. Recent studies argue that the global integration or the sudden reversal is not common for all the subcomponents of capital flow (Kose et al., 2009). For example, the equity like flows such as FDI and portfolio investments are not prone to sudden reversal. In addition they bring in other indirect benefits such as managerial and technological know-how and prudent macroeconomic policy environment (IMF, 2005 and Kose et al, 2009). Simple time plot of the ratio of debt to net capital flow and the ratio of foreign investment to net capital show that debt flow are far more prone to crisis than the equity flows.



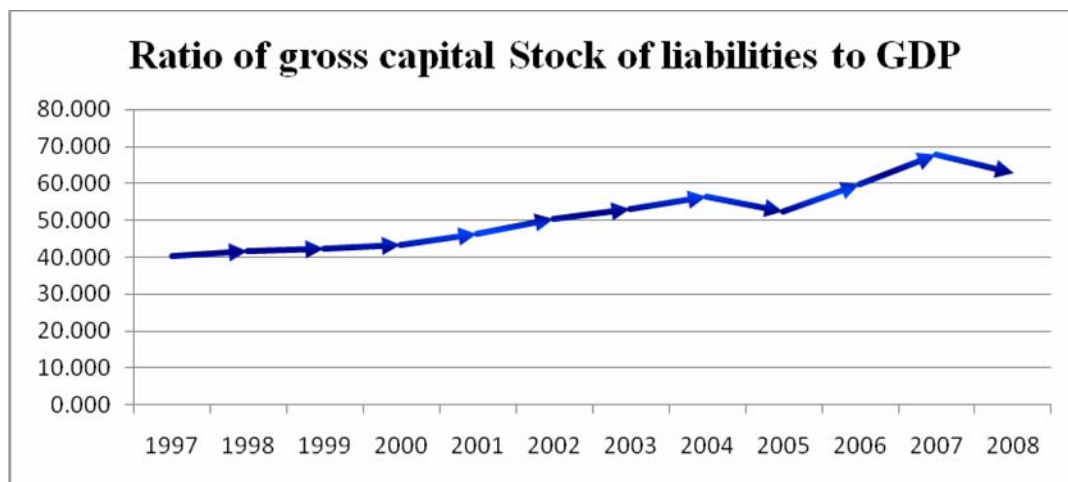
Source: Reserve Bank of India (RBI)

On the basis of stability of the flow, the subcomponents are classified into potential flight and non-flight capital and debt creating and non-debt creating capital. The potential flight capital includes foreign currency deposits, ECB, short term debt and portfolio investments which could fly off the country in the face of shock vis-à-vis FDI investments. In the time of crisis, the potential flight capital in fact flew away from the country. Especially the short term loans, ECB and more importantly portfolio investments have dried up. However miniscule NRI deposits were steady. Debt creating flows, especially short term debts, could be detrimental to the health of a country as this debts are pro cyclical i.e. increases in boom and dry up in crisis, burden increases in the time of crisis and more importantly currency and maturity mismatches are at the heart of recent crises in the developing countries. Debt creating flows include foreign currency deposits, ECB and short term debt. Debt creating flows, largely influenced by short term loans and ECBs, however, keeps steady around 50 percent of net total capital inflow in the period albeit with some fluctuation.



V.2.2.2. Stock based measures

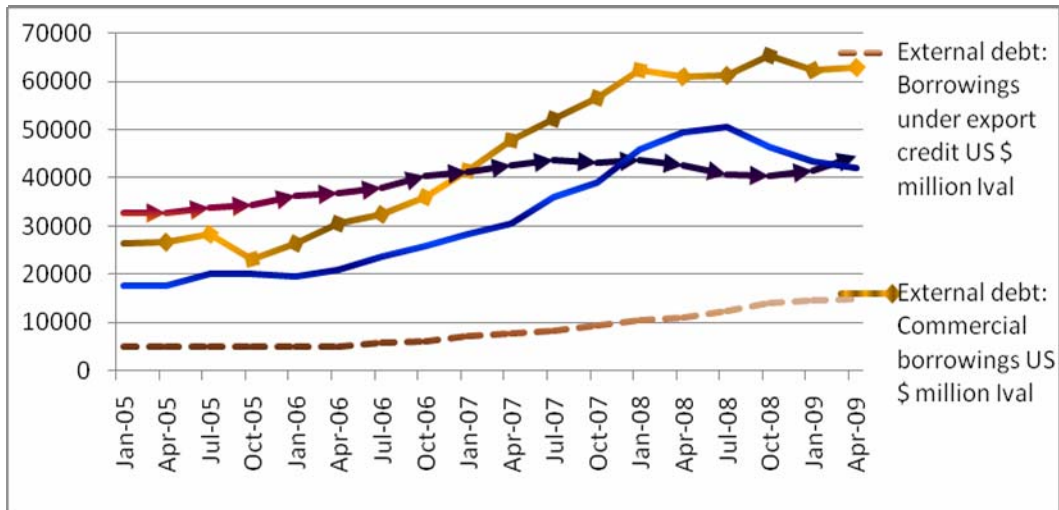
As discussed above there are number of studies that have used stock based measures to do away with excessive fluctuations and measurement errors the flows are prone to. The ratio of the sum of gross capital Stock assets and liabilities to GDP show that India has integrated with the rest of world gradually without much fluctuation however, the recent crisis had led to some reversal whereas the net asset position of has improved considerably even in the face of crisis.



Source: Reserve Bank of India (RBI)

On the stability front, the share of non-debt flows i.e. the sum of FDI and portfolio investments as a percentage total stock of liabilities have considerably gone up. However, the non-debt portion of external position also has shown a reduction during the crisis. Time plot of share of FDI and portfolio investments as a percentage of total liabilities show that FDI has done well even during the crisis however, the portfolio investment has witnessed a considerable reversal.

The share of debt in total stock of liabilities has considerably lowered in the recent years due to high growth of FDI and portfolio investments. The stock position of India's external debt shows some moderation in growth. Especially borrowings under export credit and long term NRI deposits show strong resilience, whereas, ECBs have dried up after Lehman debacle. Indian banks and corporate who were borrowing from the international markets faced higher interest rates far above the LIBOR. The hard hit of all the debt flows is the short term loans. Consistent with the theoretical predictions the net flow short term debts have dried up completely and there was a reversal of about 10 \$ Billion from July 2008.



Source: Reserve Bank of India (RBI)

VI. Conclusion

Gradual opening of the Indian economy on the one hand filled the resource gap; on the other hand it has made economy prone to shocks originating in other parts of the world. Global crisis spilled over in India through financial as well as real channels. Because of limited exposure of Indian banks to distressed assets, India was not directly affected by the financial crisis, but the indirect effects through trade and capital flows were severe. Indian government in coordination with RBI responded with several policy measures to minimize the impact of the crisis. Although, policymakers have been successful in containing the crisis, some policy concern still remains which will have to be addressed.

References

- Bhagwati Jagdish, "The Capital Myth," *Foreign Affairs*, May/June 1998, pp. 7-12;
- Edison, H., Klein, M., Ricci, L. and Sløk, T. 2004. Capital account liberalization and economic performance: survey and synthesis. IMF Staff Papers 51, 111-55
- Edwards, Sebastian. 2007. "Capital Controls, Sudden Stops, and Current Account Reversals." In Sebastian Edwards, ed., *Capital Controls and Capital Flows in Emerging Economies: Policies, Practice, and Consequences*. Chicago: University of Chicago Press
- Fischer Stanley, "Capital Account Liberalization and the Role of the IMF," *Princeton Essays in International Finance* 207, 1998, pp. 1-10;
- Gopinath, Shyamala (2009), "Lessons for Financial Policy Making – Interpreting the Dilemmas", Inaugural Address delivered at 10th FIMMDA-PDAI Annual Conference at Mumbai on March 3.
- Governor Bank of Spain "Asset price bubbles: implications for monetary, regulatory and international policies", Speech delivered on, February 24, 2002
- Gupta, Abhijit Sen, 2008. "Cost of Holding Excess Reserves: The Indian Experience." ICRIER Working Paper No. 206
- Henry, Peter Blair "Capital Account Liberalization, The Cost of Capital, and Economic Growth" *American Economic Review*, May 2003
- IMF, 2002, *Global Financial Stability Report*)
- International Banking Statistics of India (2009), in RBI Monthly Bulletin, February 2010
- Kose, M.Ayahan, Eswar Prasad, Kenneth Rogoff, and Shang-Jin Wei.2009. "Financial Globalization: A Reappraisal"
- Mathur. BL, 2003. "Development Financial Institutions at the Cross roads" Economic and Political Weekly February 22*
- Ministry of Finance, 2009, India's External Debt (A Status Report)
- Mishra, BM, 2009. "Global Financial Crisis and Monetary Policy Response: Experience of India" Presented at ESCAP Workshop On "Strengthening The Response To The Global Financial Crisis In Asia-Pacific: The Role Of Monetary, Fiscal And External Debt Policies" at Dhaka, Bangladesh in July.
- Mody, Ashoka, and Antu Panini Murshid. 2005. "Growing Up with Capital Flows." *Journal of International Economics* 65 (January): 249-66.
- Prasad, Eswar. 2008. "India's Approach to Capital Account Liberalization" IZA Discussion Paper No 3927
- Quinn, Dennis P. 2003. "Capital Account Liberalization and Financial Globalization, 1890-1999: A Synoptic View." *International Journal of Finance and Economics* 8 (July): 189-204.
- RBI (2009), Report on Trend and Progress of Banking in India, 2008-09
- RBI (2009), Annual Report (2008-09)

- Rodrik Dani, "Who Needs Capital Account Convertibility?". *Princeton Essays in International Finance* 207, 1998, pp. 55-65;
- Stiglitz Joseph, *Globalization and Its Discontents*. W.W. Norton, New York, (2002).
- Stulz, René M. 2005. "The Limits of Financial Globalization." *Journal of Finance* 60: 1595-1638.
- Summers Lawrence H. "International Financial Crises: Causes, Prevention, and Cures," *American Economic Review*, May 2000, pp. 1-16.