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MONETARY POLICY, CAPITAL FLOWS, AND THE EXCHANGE RATE

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ABSTRACT

The use of monetary policy in India has been constrained by a loose fiscal policy and capital flows. Capital inflows have the potential to cause a Dutch Disease-type situation. The RBI has carried out sterilized intervention to prevent this. In spite of this, the trade balance and, more often than not, the current account continue to be in deficit. Thus the real exchange rate, in spite of the intervention, is inconsistent with external balance (defined as a manageable current account deficit). The problem of capital flows is a self-inflicted pain. The authorities could have kept a lid on capital flows, allowing only the most urgent inflows from a growth standpoint. It would have had a competitive edge in manufacturing. This would have allowed it to expand labor-intensive industry and help mitigate the massive poverty levels.

I. INTRODUCTION

India embarked on its market liberalization journey in the early 1990s (although the 1980s saw the slow dismantling of some of the pervasive quantitative restrictions). It liberalized the trade in goods, removed controls on capital flows considerably and made some progress towards the privatization of the loss-making public enterprises.

Upon its independence from Britain in 1947, India had adopted an inward-looking approach to planning for industrialization. Unlike a large number of developing countries at a similar stage of development, India had a well developed financial market and a diversified production structure. It was also the recipient of large doses of foreign direct investment (FDI), since a significant part of the industrial sector was owned by the British. There were also (mainly) foreign-owned mines and plantations.

Industrialization required finance and several development finance institutions were setup. The Imperial Bank was nationalized in 1955. In 1969, fourteen other commercial banks were nationalized. What followed was an era of populism and financial repression. Financial repression is not a structural feature of development--it arose out of populist pressures. Funds were required to finance the losses of inefficiently run public-sector manufacturing units and to subsidize politically favored lobbies. As a perpetual borrower the government was interested in keeping the cost of borrowing low—hence the state-owned banks and financial repression. After nationalization, while the state-owned banks were successful in mobilizing savings, the asset side of the banks' balance sheet deteriorated. Banks were required to hold a high cash reserve ratio (CRR) and in addition hold government securities under the Statutory Liquidity Ratio (SLR). The CRR and SLR often accounted for more than half of the banking system's assets—after these requirements (and others) very little was left for commercial lending.[ii] The stock market was equally regulated with the Controller of Issues deciding on the amount and pricing of new issues.[iii] Aggregate numbers paint a rosy picture, though, e.g., if one were to look at bank branches per capita or the M3 to GDP ratio.[iv]

In the 1980s things began to change, albeit slowly. The Sukhomoy Chakravarty Committee in 1985 recommended the unshackling of the financial system. Real exchange rate targeting was attempted in a bid a view to improve the country's export performance.

The period between 1985-86 and 1989-90 saw a real depreciation of 30 per cent--this was brought about by a nominal depreciation of about 45 per cent.[v] The decisions on the real depreciation was taken by the Union Cabinet--such was the centralized process of decision-making in the country (and the inconsequential nature of the Reserve Bank of India)! Exports rose at an annual rate of five percent during this period, and imports (which were also liberalized) at eight per cent. The fiscal deficit stood at 8.4 per cent of GDP in 1990-91 while and the current account deficit was 3.1 per cent of GDP. The Gulf War in 1990-- the shock was temporary and at most amounted to one per cent of GDP--showed the fragility of the macroeconomic balance in India by causing a full-blown balance of payments crisis.

This macroeconomic crisis was followed by the period of liberalization. India opened up its foreign trade, the capital account considerably, while continuing to run large budget deficits. This chapter will deal with the issues of capital flows and monetary policy[vi], leaving other chapters to deal with other aspects of macroeconomic policy—see in particular, the chapters by Buiter and Patel, Kletzer, and Acharya.

II. PREREQUISITES FOR CAPITAL ACCOUNT CONVERTIBILITY

About thirty years back, comparing the experience of East Asia's spectacular growth with those of economies that were trying to grow by restricting international trade, policy analysts called for removal of all controls on international trade. Some economists, with full faith in the working of financial markets, extended this call for a "cold turkey" removal of restrictions on trade to the financial markets.

Thus proponents of financial liberalization point out the efficiency gains in removing restrictions in asset markets (just like in the goods markets) and equating

marginal cost to marginal benefit. The market would allow consumption smoothing across periods and states of nature. The former arises when financial markets allow individuals to borrow in anticipation of rising incomes, as is the case for a developing country. The latter says access to international markets allows diversification of risk. In addition to these two, there is also the consumption augmenting channel—firms can borrow cheaply in international markets for domestic investment. Liberalization of financial markets result in markets being created, where none existed before and activities like hedging and insurance evolve endogenously. Of course, whatever the drawbacks of liberalized financial markets, there is the ideological pressure (from vested interests) not to regulate at all.[vii]

Opponents say that the financial markets are not like competitive goods markets due to the problems of "the free rider", moral hazard and adverse selection. Informational asymmetries result in the financial markets being fragile. In addition, in a developing country with "thin asset markets" there are dangers of aggregate risk of volatile capital flows and the resulting volatility of non-traded goods and asset prices in the recipient country. Developing countries also tend to be those which run large budget deficits and have financial repression (to provide the debtor government with a perennial source of cheap funds). These macroeconomic characteristics raise the risks from opening up to capital flows.

While the debate about the desirability or otherwise of financial regulation was going on, financial innovation in the advanced capitalist countries had moved at remarkable speed spurred on by, among other things, the breakthroughs in information technology. New financial instruments emerged and the hitherto distinct functions of existing financial institutions got blurred.[viii] One source of headache for regulatory authorities was from the development of instruments that were close substitutes for those that the authorities sought to control. International movement of capital reinforced the difficulty of financial regulation, since now capital could flow out of the more regulated economy. This created a pressure for "a race to the bottom" in regulation.

This "cold turkey" liberalization advice immediately met with resistance from real world facts. Over time the profession became more cautious. Trade liberalization was, for most part, a good idea. Financial liberalization, on the other hand, needs to be "sequenced". This view has only been reinforced by the lessons from the Asian and Latin American crises of the late 1990s. The recent world financial crisis and slowdown of the real economy that followed in its wake has only strengthened the case for more regulation of the financial sector and capital flows.

Before turning to the recent Indian experience of macroeconomic policy in the presence of capital flows, I will very briefly summarize the literature on capital account convertibility. Two kinds of perquisites have been mentioned: (1) financial development; and (3) appropriate macroeconomic policies. I discuss these in turn.

(a) Financial Sector Reforms

Financial sector reforms in developing countries pose challenges even in the absence of international capital flows. Capital flows exacerbate the problems.

> The absorption of capital inflows, most of which tend to be short term, requires a resilient domestic financial system. Market determined interest rates, prudential norms, development of a money market, a market for government securities, a foreign exchange market, the existence of a yield curve for pricing floating rate instruments etc., are prerequisites for handling international financial flows. In addition to currency mismatch there could also be maturity mismatch. The definition, of provisioning etc., for non-performing assets are still evolving in developing economies.[ix]

> Capital flows add to the quick growth of bank credit following the liberalization in the financial sector. Inadequate monitoring and information leads to excessive risk-taking causing problems for the banks' balance sheets. This is more likely with implicit or explicit government guarantees. If banks have access to foreign

borrowing, the excessive lending occurs without hedging of foreign currency. The Asian crisis of 1997, began with a banking crisis in Thailand due to poor monitoring by the Thai Central Bank. The non-traded goods sector there accounted for about half of the (unhedged) foreign exchange loans.

(b) Macroeconomic Policy

The stance of fiscal and monetary policies has to be helpful in order for the economy to cope with inflows and outflows. In particular, these policies should not increase the (already present) volatility of capital flows. Foreign capital inflows tend to be procyclical. The money supply tends to become procyclical also. The authorities may want to sterilized the effects of these flows. If the economy is integrated financially with the rest of the world, the CRR is pretty much fixed by the rest of the world. Thus the monetary authorities may want to conduct open market operations to sterilize the money supply. This has been story of Indian monetary policy in the last decade and a half. This needs a market for government securities (in India this has been put in place in the last two decades). This route has budgetary implications the sterilization has put an interest-bearing liability in place of cash in the hands of the private sector. Of course, the authorities could target a segment of the capital flows directly. Chile (also Colombia and Thailand) has had some success in transforming the maturity of capital flows through an unremunerated reserve requirement (URR) but the effect of this on *total* flows has been questioned**.** [x]

A flexible exchange rate regime, with all its shortcomings, is preferable to a fixed exchange rate regime in the presence of an open capital account. Fixed exchange rates do not allow for inflation differentials, convert returns into foreign currencies one-for-one and are prone to one way bets against the central bank. If the central bank raises the interest rate to defend its currency, the domestic banks' balance sheets become vulnerable. (see Mishkin (1999) for a discussion).[xi] A devaluation makes domestic firms' balance sheets deteriorate in terms of the foreign currency (domestic currency loans

especially those to the non-traded goods sector fall in value). This is what happened in Thailand and Indonesia during the Asian crisis.

If capital flows are prone to reversals, and generally they are, then with some nominal wage-price inertia it may be desirable to have a fixed exchange rate regime. In periods of inflows, a floating exchange rate regime would cause an immediate real appreciation. The output and employment costs of these could be substantial. With a fixed exchange rate the overvaluation occurs gradually over time. Thus if a reversal of capital flows were to take place, output losses would be minimized. Ex ante, it is very difficult for the authorities, given the few episodes of international capital flows, to decide whether the inflow of capital is permanent or temporary, and to decide on an appropriate policy response.

A large budget deficit (or more correctly, debt) raises the real interest rate. This will attract inflows—the story of sterilization above becomes relevant, with sterilization adding to the fiscal woes. This will cause a real appreciation. An outflow would take place if the deficit was deemed unsustainable. This outflow could have balance sheet effects mentioned above.

III. INDIA'S MACROECONOMIC PERFORMANCE IN THE LAST TWO DECADES

First I look at the performance of the Indian economy since the early 1990s. Then I will look at government finances, capital flows and the conduct of monetary policy.

As is evident from Table 1, India's GDP growth has been very healthy since the beginning of the 1990s—only in three years since 1990-91 has it been less than five percent. Its GDP growth rate has been quite robust even in the last three years, when elsewhere in the world there was hardly any growth. A point that I will not dwell upon here is the less-than-satisfactory growth in employment—something that has implications for income distribution.

Table 1: Major macroeconomic indicators (% changes)

Fiscal Year	Broad Money	Current account balance (% of GDP)	Non-performing assets[a]	Wholesale price index	Aggregate GDP
1990-91	15.1	-3.0		10.3	5.6
1991-92	19.3	-0.3		13.7	1.3
1992-93	14.8	-1.7		10.2	5.1
1993-94	18.4	-0.4		8.3	5.9
1994-95	22.4	-1.0		12.6	7.3
1995-96	13.6	-1.6		8.0	7.3
1996-97	16.2	-1.2	7	4.6	7.8
1997-98	18.0	-1.4	6.4	4.4	4.8
1998-99	19.4	-1.0	6.2	5.9	6.6
1999-00	14.6	-1.0	5.5	3.3	6.4
2000-01	16.8	-0.6	4.9	7.1	5.2
2001-02	14.1	0.7	4.6	3.7	5.6
2002-03	14.7	1.2	4.1	3.4	4.3
2003-04	16.7	2.3	3.3	5.5	8.5
2004-05	12.0	-0.4	2.5	6.5	7.5
2005-06	16.9	-1.2	1.8	4.4	8.4
2006-07	21.7	-1.1	1.5	5.4	9.7
2007-08	21.4	-1.5	1.3	4.7	9
2008-09	18.6	-2.6		8.5	6.7

Notes: Non-performing assets as percentage of assets of commercial banks.

Inflation (as measured by the RBI's preferred index—the wholesale price index (WPI)) has been above ten percent in five years. The saving and investment ratios to GDP have increased by as much as 15 percent of GDP in the last decade. India today saves and invests a little less than forty percent of its GDP.[xii]

The share of agriculture has been falling over time, while services have registered an impressive increase. What has not happened is growth in the share of industrial output (indeed this is one of the reasons why employment has lagged behind GDP growth). Agriculture accounts for about sixty percent of total employment, contributes less than a quarter to GDP (industry's share in GDP is a quarter, while services account for half).

Exports have increased from 5.8 percent of GDP in 1990-91 to 15.1 percent in 2008-09—something that is indeed commendable. Imports however have leapfrogged from 8.8 percent to 25.5 percent in the same period. The corresponding figures for the trade balance deficit are 3 percent and 10.1 percent—India's growth story, as I discuss later in this chapter, is clearly not based on an export–led growth! The trade balance deficit has many parents—poor infrastructure, red tape that exporters face, high international oil prices, protectionism in the developed countries etc., but the main culprit, according to me, is the misaligned exchange rate—the trigger for this is in the capital account of the balance of payments. Much more on this anon.

The commercial banks have seen a steady fall in their non-performing assets. But this is at best an imperfect guide because the government continues to preempt sizeable amounts on the asset side of banks' balance sheets via the SLR.

Table2: Some Fiscal Indicators

Year	Gross fiscal deficit	Revenue deficit	Interest Payment
	(C+S)	(C+S)	(C)
Annual average 1990/1–1994/5	7.8	3.7	4.1
Annual average 1995/6–1999/2000	7.8	4.7	4.4
2000/1	9.6	6.6	4.8
2001/2	10.0	7.0	4.7
2002/3	9.5	6.6	4.8
2003/4	8.5	5.8	4.5
2004/5	7.6	3.7	4.1
2005/6	8.4	3.5	4.2
2006/7	7.3	2.5	4.0
2007/08	5.2	0.9	3.6
2008/09	4.6	0.5	3.6

Notes: C = *Centre*, S = *States*.

Turning briefly to fiscal policy—this topic is discussed in detail elsewhere in this volume. Here I want to highlight (from Table 2) that India's fiscal policy has been lacking in discipline. The combined fiscal deficits of the centre and states has been between six and ten percent of GDP.[xiii] With the passage of the Fiscal Responsibility and budget Management Act (passed by the parliament in 2003 and notified in 2004), there was a semblance of discipline with the fiscal deficit and the revenue deficit coming down (the primary deficit turned into a small surplus).[xiv] With the global meltdown all that changed. India faced the problem of the other high deficit countries viz. if the budget is in deficit during good years, there is not much room for "counter-cyclical" fiscal policy. The budget deficits have ballooned of late and fiscal rectitude has been put on a back-burner.

The expansionary stance of the government is responsible for a real appreciation—government demand is directed towards the not-traded goods, causing the prices of these to rise. The real interest rate rises and the debtor (the government) resorts to financial repression.

IV. MONETARY POLICY AND CAPITAL FLOWS

The Reserve Bank of India is not an "independent" central bank. One only has to look at the list of its Governors in the recent past to realize that an overwhelming majority of them had served as Secretary at the Ministry of Finance, and only on their superannuation were thy appointed as Governors. The Reserve Bank has the unenviable task of maintaining macroeconomic stability while ensuring that the high volume of government debt is held by the banking sector. It sets itself no explicit policy targets, nor does it announce any policy rules. To quote Dr Y.V. Reddy, one of the more successful RBI Governors in the recent periods: "…unorthodox policies have assured the stability of the Indian financial system…rather than achieving ritualistic compliance with pre-set rules." He is saying there is complete discretion in the conduct of policy and he is proud to say so! Having said this, it must be added that in the last fifteen years capital flows to India have posed major constraints on the conduct of monetary policy (and

macroeconomic policies, in general), and the RBI has coped with it quite well, under the circumstances.

India liberalized all current account transactions by signing Article VIII of IMF's Articles of Agreement in 1994. On capital account transactions, FDI inflows were liberalized,[xv] as were portfolio inflows (keeping a lid on short-term debt volatile flows) with for full outflows associated with inflows (i.e. principal, interest, dividends, profits and sale proceeds). On outflows, restrictions remained, although these have been successively eased—the only economic units that are reasonably restricted are domestic households.

Looking at Table 3, the real exchange rate looks remarkably stable (it has appreciated somewhat in the last few years, as the RBI has reduced its intervention).[xvi] Since 1993, the REER has never depreciated more than 5 percent (relative to the base year) and even in 2008, when international markets were down, it stood at 97.9 (base year 1993-94).[xvii] The trade-weighted nominal exchange rate, on the other hand, had depreciated by about 12 percent since 1993-94. Thus there seems to be some prima facie evidence that the RBI was trying to keep the REER pegged.

Table 3: Exchange rates of the Indian rupee

Fiscal year	Rs/US$	Nominal effective exchange rate[a]	Real effective exchange rate[b]	Foreign Exchange Reserves(US$ Billion)
1993/4	31.4	100	100	19.3
1994/5	31.4	98.2	104.9	25.2
1995/6	33.5	90.9	100.1	21.7
1996/7	35.5	89	98.9	26.4
1997/8	37.2	92	103	29.4
1998/9	42	90.3	94.3	32.5
1999/00	43.3	90.4	95.3	38
2000/1	45.7	90.1	98.7	42.3
2001/2	45.7	89.1	98.6	54.1
2002/3	48.4	87	96	76.1
2003/4	45.6	87.9	99.1	113

2004/5	44.9	88.4	98.3	141.5
2005/6	44.3	91.2	100.8	151.6
2006/7	45.3325	90.38	99.00	199.179
2007/8	41.2926	89.72	98.51	309.723
2008/9	43.4242	89.62	98.38	251.985

Notes*: a36 Currency export based (base 1993/4 = 100); b36 currency export based (base1993/4 = 100).*

This has encouraged some analysts (e.g., Kletzer and Kohli (2000) to try and estimate the monetary model of exchange rate determination for India. As is well known that the monetary model assumes purchasing power parity (PPP)[xviii] and uses money market equilibrium conditions the two countries (for bilateral exchange rate determination) to determine the nominal exchange rate. The problem with such an analysis is that it assumes that the exchange rate is fully flexible, while in India's case the RBI was intervening to keep the real exchange rate from appreciating.[xix]

A capital inflow, as mentioned above, creates an excess demand for the receiving country's assets and causes a real appreciation. This real appreciation with a resulting squeeze on traded goods is referred to as the "Dutch Disease". If the central bank does not intervene, this results in an instantaneous nominal appreciation. If the central bank intervenes and just buys foreign exchange, then the money supply goes up. Over time, if the capital flow continues, the inflation rate goes up—this results in a real appreciation, even with a constant nominal exchange rate. In order to keep a lid on inflation, the central bank then sells domestic government securities to suck the increased money supply out of the system. The liabilities side of its balance sheet (high powered money) remains unchanged, while on the asset side foreign assets increase and government bonds fall. This is called sterilized intervention.[xx] This is what the RBI did (see Table 3). Note this policy can be implemented if the central bank has some control over the interest rate—it has to make asset-holders want to hold domestic securities because they give a higher rate of return than the rate of return on foreign securities. Because of pervasive capital controls, the RBI was able to do this. This policy can insulate the real exchange rate (and the deleterious effects of capital flows on the economy) but is not without costs. The RBI is exchanging low-return foreign asset (either foreign currency or US treasury bills) for

high-interest government securities—this is what is meant by a "quasi-fiscal cost" of sterilization. The sterilization policy would become untenable as the RBI continues to accumulate foreign exchange reserves, thus driving up interest rates. The RBI via sterilization was able to prevent a real appreciation from occurring, which in turn prevented a 'Dutch Disease'[xxi]. In the face of continued capital inflows, the costs of this strategy go on mounting.

The above analysis is true for all kinds of capital inflows, whether it is FDI or FII. If capital inflows are seen to be a problem then there is a case for ordering these flows in terms of their benefits—FDI brings with it advantages of new technology, management etc. that FII flows do not.

Table 4 shows the sources of reserve money growth. It is very clear that the RBI has been sterilizing the effects of the increase in its foreign exchange reserves on the monetary base. From 1990-91 to 1999-2000, both domestic and foreign assets accounted for the increase in reserve money. In the last nine years it is foreign exchange reserve accretion that accounts for reserve money growth. The foreign assets of the RBI grew faster than reserve money in all the years but four since 1993-94. Since 2004 the RBI's holding of foreign exchange has exceeded reserve money (i.e. its holding of government debt is negative).

The RBI now holds more than adequate foreign-exchange reserves for normal contingencies—in June 2010, the reserves stood at US$ 272.8 billion. Between 2002 and 2004 these reserves covered over one year of imports, falling to about 11 months now (the RBI figures imports for 2009-10 is US$ 299.5 billion). The social benefit to additional reserve holdings, in terms precaution against normal contingencies, is low and given the opportunity cost (i.e., the quasi fiscal costs) the net benefit is possibly negative.

Table 4: Sources of reserve money growth (Rs billion)

	RMC	NFAC	NDAC	NDA/RM
Annual average 1990/1–1994/5	183	137	46	74
Annual average 1995/6–1999/2000	222	182	40	50
2000/1	227	313	−86	35
2001/2	347	668	−321	22
2002/3	309	942	−633	3
2003/4	675	1262	−588	−11
2004/5	526	1284	−758	−25
2005/6	839	602	237	−17
2006/7	1358	1932	-573	-22
2007/8	2194	3700	-1506	-33
2008/9	597	440	157	-30

Notes: RMC: changes in reserve money; NFAC: changes in net foreign exchange; NDAC: changes in net domestic assets of RBI.

Another way of tackling the problem associated with inflows is to encourage outflows. A fully open capital account would liberalize these completely. As I discuss below, the experience of the Latin American countries in 1998 and the Asian economies in 1997 suggest full liberalization is fraught with danger. The danger comes from a reversal of inflows. When foreign currency assets are needed for a reversal of flows, these are rarely available—if the domestic private players see a crisis accompanied by a depreciation of the domestic currency, they would rather hang on to their foreign currency assets than bring them home. All this is well-documented elsewhere and is not pursued further here. Suffice it to say that full outflows have to wait for a more developed financial system.[xxii]

Table 5: Balance of Payments (% of GDP at market prices)

	1990/1	1991/2	1992/3	1993/4	1994/5	1995/6	1996/7	1997/8	1998/9	1999/2000	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6A	2006/7	2007/8	2008/9
Exports f.o.b	5.8	6.9	7.3	8.3	8.3	9.1	8.9	8.7	8.2	8.3	9.9	9	10.6	11	12.3	13.1	14.1	14.2	15.1
Imports c.i.f	8.8	7.9	9.6	9.8	11.1	12.3	12.7	12.5	11.4	12.3	12.5	11.3	12.7	13.2	17.1	19.6	20.9	22	25.5
Trade balance	−3.0	−1.0	−2.3	−1.5	−2.8	−3.2	−3.9	−3.8	−3.2	−4.0	−2.7	−2.3	−2.1	−2.3	−4.9	−6.5	-6.8	-7.8	-10.4
Net invisibles	−0.1	0.7	0.6	1.1	1.8	1.6	2.7	2.4	2.2	2.9	2.1	3	3.4	4.6	4.5	5.1	5.7	6.4	7.7
Total current account	−3.1	−0.3	−1.7	−0.4	−1.0	−1.7	−1.2	−1.4	−1.0	−1.0	−0.6	0.7	1.3	2.3	−0.8	-1.2	-1.1	-1.5	-2.6
Capital account surplus	2.3	1.5	1.6	3.5	2.8	1.3	3	2.4	2	2.3	1.9	1.7	2.1	2.8	4.5	3.1	4.9	8.8	0.6
Foreign investment	0.1	0.1	0.3	1.6	1.5	1.4	1.6	1.3	0.6	1.2	1.3	1.3	0.8	2.3	1.9	2.3	3.3	5.4	1.8
Direct	0.1	0.1	0.3	0.6	1	2	2.9	3.6	2.5	2.1	0.7	0.9	0.7	0.4	0.5	0.7	1.4	1.3	1.4
Portfolio	0	0	0.3	3.6	3.8	2.8	3.3	1.8	−0.1	3.1	0.6	0.4	0.2	1.9	1.3	1.6	0.7	2.2	-1.2
External assistance	0.7	1.1	0.8	0.7	0.5	0.3	0.3	0.2	0.2	0.2	0.1	0.2	−0.6	−0.5	0.3	0.2	0.2	0.2	0.2
Commercial borrowings	0.7	0.6	−0.2	0.2	0.3	0.4	0.7	1	1.1	0.1	0.9	−0.3	−0.3	−0.5	0.7	0.2	1.7	1.8	0.7
NRI deposits											0.5	0.5	0.6	0.6	−0.1	0.3	0.5	0.0	0.4
IMF net	0.4	0.3	0.5	0.1	−0.4	−0.5	−0.3	−0.2	−0.1	−0.1	0	0	0	0	0	0	0	0	0

India's balance of payments statistics make interesting (if grim) reading. As mentioned above exports have increased (almost secularly) from 5.8 percent of GDP in 1990-91 to 15.1 percent of GDP in 2008-09. The corresponding figures for imports were 8.8 percent and 25.5 percent. Thus trade openness is three times in 2008-09—at 40.6 percent--what it was in 1990-91.

India's trade deficit had fluctuated between 2 and 4 percent of GDP from 1990-91.upto 2004-05. It then started increasing sharply, sky-rocketing to 10.4 percent of GDP in 2008-09. This was mainly due to increases in the world price of crude oil during the latter period.

The current account deficit, helped by invisibles, has stayed below two percent of GDP, barring the crisis year of 1990-91 and in 2008-09—it even generated small surpluses in three years. Within the invisibles category software services and private transfers have been running neck to neck (at US$ 44.18 billion versus US$ 44.04 billion in 2008-09). Private transfers have grown twenty-fold in the last twenty years.

Of course, the main action in the balance of payments accounts has been in the capital account. There has been a surge in FDI and FII investments, even if these have not quite been able to keep pace with GDP growth (except in the very recent time). External commercial borrowing (ECB) has been rising steadily--it reached 1.8 percent of GDP in 2007-08 before falling back 0.7 percent. The rhetoric of the early years of capital account liberalization that investment in equity markets should be encouraged and not debt flows has been given a quiet burial.[xxiii] The capital account surplus has been large. As Table 4 shows, it has been less than 2 per cent of GDP in only 3 years since 1993/4. FDI has grown tenfold, from its 1990's peak (in 1997/8) of US$ 3.6 billion to US$ 37.1 billion in 2009-10. Portfolio investment flows tell a similar story-- its 1990's peak (in 1996-97) of US$ 3.3 billion to US$ 32.4 billion in 2009-10. Portfolio flows have seen a reversal in the two crisis years 1998-99 and 2008-09 (of US$ 61 million in the Asian and Russian crisis of 1998-99 and a whopping US$ 13.1 billion in recent global meltdown in 2008-09).

The capital account surplus has been in excess of the current account deficit, and the balance of payments has been in surplus (except in 2008-09)—i.e. the RBI has been accumulating reserves to offset this capital account surplus. The intervention is to prevent a Dutch Disease i.e. to prevent an appreciation of the rupee (except in the recent past as

the holding of foreign exchange reserves have become costlier). The RBI has to choose between a rock and a hard place!

In the last two years the RBI has been content to let the currency appreciate not only because of the quasi-fiscal cost of sterilization but also as a (unacknowledged) anti-inflation tool. With a high import to GDP ratio, a real appreciation keeps the domestic price of imports low.[xxiv] Strong capital flows keep nominal exchange rate from depreciating, to keep pace with the higher domestic inflation (compared to its trading partners).This has had the undesirable consequence of the deficit on the current account of the balance of payments to rise.[xxv] Such a policy would be fine if we were starting from a current account balance. In India's case, it is playing with fire.[xxvi]

To sum up the recent Indian experience with the external sector: the sizeable capital inflows (FDI and FII) would have caused a nominal and real appreciation, and the RBI has thwarted this by intervening in the foreign-exchange market and buying foreign exchange. It has then sterilized the money supply by selling bonds. The effect of this is to increase the interest rate on domestic assets and, thereby, give rise to a 'quasi-fiscal' cost. Absent these capital flows, there would be real depreciation that could allow the economy to run a trade (and current account) surplus.

Below I shall argue that the real exchange rate that has emerged from the RBI's intervention is not compatible with industrialization to relocate a large number of low productive workers in agriculture, using the world markets. It is not even clear that the RBI's action have resulted in an exchange rate compatible with external balance (i.e. zero current account). In the face of the onslaught of capital flows, the RBI has, at best, engaged in fire-fighting.

V. ECONOMIC THEORY, EAST ASIA, LATIN AMERICA AND INDIA

There is a view that is very popular in the policy circles in India, and it gives a clue about how some influential people think about these matters. It is as follows. For a

higher growth rate the rate of investment needs to be increased. One way to achieve this is to reinforce domestic savings with capital inflows by running a current account deficit. This is unexceptionable insofar as one is financing new investment by FDI—if this goes into acquiring an existing firm, it does not count as investment.

What are the benefits in a macroeconomic context of liberalizing portfolio flows?[xxvii] Non-FDI capital flows are primarily flows from FIIs and are restricted to securities listed on the stock exchange.[xxviii] Their effect on the real economy would be expected to work through a Tobin's 'q' type of mechanism. Following a rise in share prices, firms would increase investment by issuing new shares. It is interesting in this context to note that, in the last 25 years, new issues by non-government firms have exceeded 1 per cent of GDP in 5 years only.[xxix] These were all in the early 1990s. So the inflows do not seem to be working through a 'q'-type mechanism.[xxx]

Carlos Diaz-Alejandro wrote a paper about a quarter century back with the title 'Goodbye Financial Repression, Hello Financial Crash'. This has happened in the developing countries that have liberalized the capital account without paying heed to the prerequisites e.g. Mexico in 1994, the Asian crisis of 1997, and the 1998 crisis in Latin America.

As developing economies opened up their capital accounts to international flows, they soon found out that asset markets are different from goods markets and developing country markets different from those in developed countries. As discussed in Section II, the initial Southern Cone (Chile, Argentina, and Uruguay) liberalization in the early 1980s pointed to a lack of macroeconomic balance—on opening up, budget deficits turned into current-account deficits. The literature that emerged suggested a sequencing of liberalization rather than a 'big bang'. In the light of the East Asian experience, inadequate regulation and supervision of the financial sector, including the government guaranteeing the liabilities of the banking system, have been added to the list.

The absence of a well-developed, well-regulated financial market, reforms that could be beneficial otherwise interact with some other feature of an underdeveloped market that acts as a distortion. Developing economies have financial market lacking depth and transparency. Acquiring these qualities can not be speeded up too much.

Therefore an economy with an unsustainable fiscal policy may find that it difficult to borrow on favorable terms, if it is able to borrow at all, following an opening up of outflows as capital flows out—international markets impose discipline as Diaz-Alejandro had predicted. This could lead to an expectation of monetization of the deficits and cause a steep currency depreciation that, in turn, causes a financial crisis. If the exchange rate is fixed, then this expectation of a future monetization could cause the peg to collapse and a large loss of foreign-exchange reserves. A 'surprise' inflation does benefit the government *qua* borrower in that it reduces the real value of the debt. This, however, is not true of an economy like India, where most debt is held by the financial institutions owned by the government.

I now turn to the macro aspects of capital flows, i.e. smoothing and augmenting of consumption by borrowing and lending. Consumption-smoothing allows income fluctuations to be smoothed out, at least in theory.[xxxi] Capital outflows can also help diversify risk. Against this we have a capital account shock—such as a sudden rise in the world interest rates or the complete drying up of capital flows (a 'sudden stop')—that introduces a lot of volatility to consumption and investment, since the current account now needs to be (more) balanced. Also, these shocks could be unrelated to the borrower's economic behavior.

What has been the recent macroeconomic experience with capital flows in developing economies? Have these supplemented domestic savings and put the recipients on a higher growth trajectory? And have these flows allowed economies to smooth and augment consumption?

In the year following the devaluation of the Thai currency in July 1997, capital flows to the five Asian countries—i.e. Indonesia, Korea, Malaysia, Philippines and Thailand—fell from US$ 47 billion (or 4.3 per cent of GDP) to US$ −58 billion (or −5.5 per cent of GDP).[xxxii] In the second half of the 1990s, bank lending to the Asian economies was very volatile, whereas for Latin America it was portfolio flows that showed a higher volatility. In the seven major Latin American countries, capital flows increased from US$ –13 billion to US$ 100 billion (constituting 5.5 per cent of GDP) between the years ending in the fourth quarter of 1989 and the second quarter of 1998. Calvo and Talvi (2005) say: 'The highly synchronized and widespread increase in capital inflows to a variety of very diverse countries suggests that the root cause of this bonanza must lie in common external factors i.e. developments in central rather than peripheral countries.' (p.7)

On the causes and consequences of the reversals in capital flows in Latin America, it is worth quoting Calvo and Talvi (2005, pp. 8–9) at length. They say: Russia's default in August 1998 . . . represented a fatal blow for Latin America. . . .In tandem with the rest of emerging markets, interest rate spreads for (the big seven economies) LAC-7 rose from 450 basis points prior to the Russian crisis to 1,600 basis points in September 1998, more than tripling the cost of external financing in a period of weeks. As a result, capital inflows to LAC-7 countries came to a Sudden Stop, falling from 100 billion dollars (or 5.5 per cent of GPD) in the year ending in II-1998 prior to the Russian crisis, to 37 billion dollars (or 1.9 per cent of GDP) one year later . . . (N)on-FDI flows. . . fell by 80 billion dollars during that period. After the initial blow, capital flows to LAC-7 suffered an additional blow after the Argentine crisis in 2001 . . . and, later, the ENRON scandal. . . . By the year ending in IV-2002 capital flows to LAC-7 were less than 10 billion dollars, back to the very low levels of the late 1980s. The Russian virus affected every major country in Latin America, with the exception of Mexico. . . . Even Chile, a country with very solid economic fundamentals—a track record of sound macroeconomic management, a highly praised and sustained process of structural and institutional reforms that completely transformed and modernized Chile's economy, and an average rate of growth of 7.4 per cent per year between 1985 and 1997, the highest

growth rate in LAC-7—and tight controls on the inflows of foreign capital, experienced a sudden and severe interruption in capital inflows. In fact, the Sudden
Stop in Chile in the year following the Russian crisis was 7.9 per cent of GDP, the largest in LAC-7. That a partial debt default in Russia, a country that represented less than 1 per cent of world GDP and had no meaningful financial or trading ties with
Latin America, could precipitate a financial contagion shock wave of such proportions, posed a puzzle for the profession.'[xxxiii]

Further they point out that, in response to this shock to the capital account—'by definition undesirable if not impossible to smooth'—most of the adjustment in LAC-7 came not from additional savings but from reduced investment, which fell from 23 per cent of GDP in 1997, prior to the Russian crisis, to 18 per cent of GDP in 2002 (Calvo and Talvi, 2006, p. 15).

What does economic theory, in particular growth theory, have to say on this? Growth theory has very little to say on the capital account. There was a literature on the stages of the balance of payments that suggested that in the early stages of development a country would run a current deficit and import capital. Later optimizing models (either in the Ramsey-Cass-Koopmans tradition, or the overlapping generations variety) suggested that a developing economy should run a current account deficit. In effect output and the capital stock increase but the new capital is foreign-owned[xxxiv]. In these models, if a relative price appears (i.e. the model is more than one sector), a real depreciation is a terms of trade deterioration.

The data on capital flows in the world economy decisively contradicts the prediction that capital flows from the rich to the poor countries. Prasad, Rajan and Subramanian (2007) show comprehensively that capital flows from the developing countries to the rich ones. This is true even if we take out the oil-exporters from the sample, or, for that matter, the US-China balance of payments figures. We have a conundrum here that needs explanation.

In the light of neoclassical theory and the aggregate data predicting the opposite, what are the lessons for an economy like India? In particular, should India import capital i.e. absorb the capital flows by running a current account deficit? The answer from the Washington-based multilateral institutions is certainly "Yes". On the other hand we have the experience of successful industrialization of the East (and South-East) Asian economies—something crying out for formal modeling[xxxv]--that seems to suggest that at an early stage of industrialization, a country may use "free trade mercantilism" (my coinage) to grow out of poverty. The strategy consists of keeping its exchange rate undervalued and export (crude) labor-intensive industrial products.[xxxvi] In effect, the country concerned is moving the bulk of its population from low-value agriculture to industry using the world markets. Once industrialization gets going, over time, this economy moves up the quality ladder by supplying more sophisticated industrial goods.

If there are imperfections in the credit markets, borrowing from abroad typically involves sovereign risk. One can be sure that these risks are greater than lending to domestic firms (because, for example, of a common legal authority etc. for the latter kind of lending). Thus a growth strategy that involves generating higher saving (backed by a relatively closed capital account) can make funds available for lending domestically on better terms than borrowing abroad.

Going back to India's experience, we see that it runs a huge deficit in merchandise trade and a hefty surplus on services. One way of organizing one's thoughts on this issue is by thinking of the goods that India has a comparative advantage in, starting with the maximum and going down the order. Make an additional (heroic) assumption that this ordering stays independent of factor prices. In the domain of traditional trade theory, trade is balanced and presumably there is an exchange of goods, with India's exports being where it has the maximum comparative advantage, and its imports being where comparative advantage is least. When trade is unbalanced, then absolute advantage can determine the cutoff of the goods to be exported (and imported). With the Dutch disease, all India goods have become less competitive. Only those industries survive as exporters where the overvalued real exchange rate has not been able

to obliterate the comparative advantage completely. Software services are one such example and mining is another. The export of ores is about nine percent of manufacturing exports.[xxxvii]

The expansion of mining has brought in its wake environmental disaster and political tension, since mining is carried out in "pristine" forest areas where India's tribal population lives. That this is a matter of concern outside the political and environmental arenas can be seen from the fact that sixty years after planning started, India's mining sector's growth relative to that of its manufacturing was pretty much the same[xxxviii]. This is hardly what was expected of decolonization—colonial policies discouraged Indian industry and encouraged mining and other extractive activities. A detailed analysis of this problem, however, would take us too far afield. My purpose here is to highlight the fact that like in the "Dutch Disease", the real appreciation has made labor-intensive manufacturing—India's ticket out of mass poverty—unviable, and in its place we have got an increase (among other activities) in mining and quarrying with the attendant environmental and political risks.

As mentioned earlier, the experience of the East and South-east Asian economies does not fit into the typical neoclassical theoretical mould. While there are differences among this class of countries—e.g. some, such as China, used FDI, while others, such as Korea and Japan, did not—all these economies had one point in common, namely they kept a tight lid on financial capital flows in the early stages of development. It is ironic that when capital mobility was allowed,[xxxix] their weak financial systems could not cope, and the Asian crisis resulted. At the other end of the spectrum is Latin America with its open capital account fairly early on its development path. Here, while growth has taken place, these countries have also lurched from one crisis to another. Both growth and the crises have one common proximate cause—capital flows.[xl] Since capital-flow reversals take place independently of the fundamentals of the country (as do inflows), there is very little that any country can do to stop these reversals.[xli]

To sum up, as a growth strategy, the almost mercantilist strategy of East and Southeast Asia is to be preferred over the open capital account of Latin America. The strategy is outward-oriented and thus receives benefits that the world trade regime (GATT-WTO) bestows. By running a current-account surplus, it generates aggregate demand and possible funds for investment. A trade balance surplus using the abundant labor for exports has a direct effect on poverty reduction.

VI. CONCLUSIONS

India has grown at a remarkable speed since liberalization. It has coped well with the problem of capital flows. But the problem of capital flows is a self-inflicted pain. It could have kept a lid on capital flows, allowing only the most urgent inflows from a growth standpoint. It would have had a competitive edge in manufacturing—the real depreciation could have, upto a point, helped it overcome other supply side shortcomings, like poor infrastructure. This would have allowed it to expand labor-intensive industry and help mitigate the massive poverty levels.

But as Calvo and Talvi (2005) point out, a country's economic structure and policies can determine how hard it is hit when a reversal takes place. They show that the Chilean meltdown was much more severe than that in Argentina. Thus Chile was hit harder in the crisis than Argentina, but since recovery requires a country to run current-account surpluses, this was something that Chile—being more open to trade—was able to do at a lower cost than Argentina.

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[i] I am grateful to Gaurav Mehta for diligent research assistance.
[ii] It must be said to the credit of the governments that monetization of deficits was not resorted to in a big way.
[iii] The Controller of Issues came into existence in 1947 and was abolished only in 1992.
[iv] It is very interesting to note that in country where very little attention was paid to macroeconomic constraints or had no academic macroeconomic tradition worth the mention, two major policy shifts arose out of macroeconomic crises. In the mid-sixties a crisis, brought about a shift to the left and in the early-nineties another crisis heralded the era of liberalization.
[v] If allowance is made for tax breaks and other subsidies to exporters, the real depreciation could be as high as 40 per cent.
[vi] I will not deal with the effects of the recent surge in inflation, except in passing. This is too recent an occurrence to be discussed in a chapter in a handbook.
[vii] The sub-prime crisis is a good example of this. The fact that asset prices could not rise forever at a rate higher than, say, the interest rate was ignored (due to the muscle power of financial institutions and the complicity of the regulators).
[viii] For instance banks and building societies have become indistinguishable from each other. The line separating commercial banks and investment banks have become indistinct, as has the role of insurance companies from mutual funds.
[ix] Indeed this is true for the advanced capitalist countries also e.g. the proposed constraints on the balance sheets of banks in the wake of the recent financial crisis.
[x] Edwards (1999) casts doubt on whether even the composition of the capital flows was altered.
[xi] Empirically, Kaminsky and Reinhart (1999) find that the banking crisis occurs before the exchange rate crisis.
[xii] Investment exceeds savings because the current account of the balance of payments is in deficit.
[xiii] The fiscal deficit is an imperfect measure of profligacy of the governments. For instance, it counts privatization revenues on par with taxes, than as a method of financing the deficit. It also does not include the off-budget (actual and potential) liabilities.
[xiv] These refer to the combined sate and central deficits.
[xv] Since then FDI outflows have been liberalized considerably.
[xvi] In this section, I will examine the annual figures for India's capital account. If one were to examine the quarterly or monthly figures, there is much volatility in the individual components of the capital account. These may have important short run policy ramifications but are of second-order importance in my, admittedly, broad-brush treatment here.
[xvii] The calculation of REER implicitly assumes that all goods are tradable. An alternative definition is the relative price of traded to non-traded goods. Kohli and Mohapatra (2007)use this approach, assuming a that if five percent of a good is traded it is classified as a traded good. They test the Balassa –Samuelson effect for India and find mixed effects.
[xviii] This can be relaxed to incorporate changes in the real exchange rate. But this is almost never done in empirical analysis. One testable implication of assuming PPP is that a rise in the nominal interest rate in any country (because of PPP, this is a rise expected inflation) causes its exchange rate to depreciate. In the Indian date this is never observed except when inflation rose just before the 2008 world financial crisis and the RBI reacted very aggressively by raising interest rates.
[xix] There is a version of the monetary model that would take into account reserve changes—the exchange market pressure model (due to Girton and Roper (1977).
[xx] The money supply is the object that is "sterilized".
[xxi] A referee has questioned the use of this expression in the Indian context. In the Netherlands, the "Dutch Disease" occurred due to that country's possessing of gas and oil in the North Sea. This led to capital flows to the Netherlands causing the guilder to appreciate. I use this expression more generally, where a "winner" attracts capital flows that reners its manufacturing sector uncompetitive in the international markets.
[xxii] Caballero and Krishnamurthy (2001) model the difference between a developed country's financial market and that of an underdeveloped one by assuming that the former can make foreign currency payments using its domestic currency denominated assets while an underdeveloped economy cannot shift its domestic assets for foreign currency payments.
[xxiii] ECBs stood at US$ 4.37 billion compared to FDI at US$ 2.27 billion and the FII figure of US$3.02 in 2007-08.

[xxiv] The real appreciation does help the import of capital goods, which raises productivity. But capital-goods imports was part of an ongoing process of liberalization that started in the 1980s, and hence did not require the real appreciation to jump start it.

[xxv] Between April 2004 and March 2010, the current account has been in surplus only in four quarters. The current account deficit in the last three financial years has been increasing from US$15.7 billion to US$ 28.7billion to reach US$ 38.4 billion (source RBI Monthly Bulletin July 2010).

[xxvi] It is true that the world economy is still growing sluggishly (causing export growth to be below potential), but at the same time oil prices are about half of what they were before the global crisis—this is not the time for India's current account deficit to widen.

[xxvii] The distinction between FDI and FII flows from the perspective of macroeconomic management is not appreciated in Indian policy circles can be seen in the Tarapore Committee II Report (see RBI, 2006, para. 2.8). The Lahiri Committee has the following to say on this: 'Foreign investment—both portfolio and direct varieties—can supplement domestic savings and augment domestic investment without increasing the foreign debt of the country. Such investment constitutes non-debt creating financing instruments for the current account deficits in the external balance of payments.'(Government of India, 2005, para. 40).

[xxviii] As mentioned above ECB flows have also increased.

[xxix] See RBI (2006, Table 81) for figures.

[xxx] I have tried to test this using a panel of exporting companies that were listed in the stock market. The evidence is inconclusive. Basically, the data period is too short to distinguish between effects on investment of trade liberalization and capital account liberalization.

[xxxi] See Caballero (2000) for how in Chile's case, most macroeconomic series follow the international price of copper, its main export—this, in spite of Chile being a market-oriented economy with fairly good regulatory institutions in place. See also his discussion on the volatility of the various stock-market indices in Argentina.

[xxxii] See Williamson (2001) and Schneider (2001).

[xxxiii] In the Lahiri Committee Report (Government of India, 2005), this episode does not find a mention in section 3.V, entitled 'Episodes of Vulnerability' [*sic*], whereas the Soros attack on sterling does.

[xxxiv]Robert Lucas, nearly a quarter century back, asked why this did not happen in the real world. As is well-known his answer was that a co-operant factor of production viz. human capital was in short supply, and therefore a capital deficient economy did not necessarily have a high marginal product of capital.

[xxxv] Among the leading economists, Dani Rodrik has attempted this—see e.g. Rodrik (2008).

[xxxvi] As the Heckscher-Ohlin model predicts. This is what happens in balanced trade models of optimal growth e.g., Atkeson and Kehoe (2001) and Bajona and Kehoe (2008).

[xxxvii] In 2007-08, mineral exports were US$ 9.1 billion and manufacturing exports US$ 103 billion (RBI).

[xxxviii] Between 1950-51 and 2008-09, at constant prices mining grew 21 times and manufacturing 24 times (Economic Survey 2010, Table 3).

[xxxix] Malaysia and Thailand, for example, had an open capital account for decades prior to the Asian crisis, but they received no inflows, so there was no problem.

[xl] See Caballero (2000), for example, casting doubts on the ability of inflows to generate positive effects.

[xli] But as Calvo and Talvi (2005) point out, a country's economic structure and policies can determine how hard it is hit when a reversal takes place. They show that the Chilean meltdown was much more severe than that in Argentina. Thus Chile was hit harder in the crisis than Argentina, but since recovery requires a country to run current-account surpluses, this was something that Chile—being more open to trade—was able to do at a lower cost than Argentina.