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MANAGING GLOBAL FINANCIAL FLOWS
AT THE COST OF NATIONAL AUTONOMY
China and India

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[Abstract: The narrative as well as an analysis of the global imbalances, as exist in the literature, remain incomplete unless it captures the part of the story which relates to the experiences of the emerging economies which are experiencing the surges in capital flows. In addition to disregarding the implications of the capital flows on their domestic economies, especially in terms of the 'impossibility' of following a monetary policy that suits growth in the domestic economy, such analysis fails to recognise the significance of uncertainty and changes in expectations as factors behind the build up of the large official reserves, often on a precautionary mode. The consequences, as discussed above, are more than one, affecting the fabric of growth and distribution in these economies.

Experiences of China as well as India, with their de-regulated financial sectors in recent years, bear testimony to the points mentioned above.

Financial integration and free capital mobility, which are supposed to generate growth with stability in terms of the "efficient market" hypothesis, have not only failed to deliver as promised, especially in the advanced economies, but also have pushed the high growth developing economies like India and China to a state of compliance, where domestic goals of stability and development are sacrificed to attain the globally sanctioned norms of free capital flows.]

Introduction

With global crisis and recession haunting most of the advanced economies, the high-growth economies in Asia have drawn much less attention than what is deserved. The oversight leaves the analysis incomplete, not only by missing an important link in the

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prevailing network of global trade and finance, but also ignoring the structural changes in these developing economies, much of which often are related to the pattern of financialisation as well as turbulence in the advanced economies.

In the present paper I draw attention to the high growth economies of China and India, reckoned as 'emerging economies' in the literature. Incidentally, both countries, and especially China occupies the centre stage in the context of the prevailing global imbalances. The growth momentum in the two countries, and the rapid increases in their official reserves even in the face of global recession, makes these two rather special among other developing countries. However, while aspects as above are mentioned in the literature, what is often left out relates to the structural changes within these economies, which has a bearing not only within, but also across countries.

We would dwell, in the present paper, on changes as above in the financial sectors of China and India which, along with most developing economies, have been exposed to the vicissitudes of global finance. In our analysis we would try to unfold the set of constraints which these two countries had to face in the process of their financial integration. As we have argued, the above changes often led these countries lose autonomy in their monetary policy. The outcome has been described in the literature as situations of an "impossible trinity". As we point out, the measures to maintain the three goals of exchange rate stability, capital account opening and monetary autonomy often turn out as not only impossible, but also contrary to the interests of the real economy, say in depressing further the level of activity in a bid to contain inflation. The contractionary effects as result within the country are also likely to spill over to other countries, by shrinking the magnitude of import demand from the former. Financial integration also instils added degrees of volatility in multiple markets, for markets of financial assets, commodities as well as for real estates. As we would observe in the following pages, China and India both have faced added degrees of volatility in all three of those markets since their de-regulation.

We initiate the discussion by providing, in section I of this paper, an account of the prevailing global imbalances, dwelling on countries with large current/capital account imbalances. Countries with current/capital account surpluses per force experienced reserve accumulations in the process. A narration as above is followed by an account as well as critical assessment, of interpretations as are often advanced in the literature on issues relating to global current account imbalances. Section II invokes the theoretical premises—of what in the literature is known as the 'impossible trilemma'—of continuing with free capital flows and exchange rate management along with monetary autonomy. While questioning some of the assumptions behind the static framework underlying the above theorem, which is essentially an offshoot of the Mundell-Fleming IS_LM

framework for open economies, we draw attention to the relevance of uncertainty and expectations as dimensions which can make the analysis relatively complete. Section III dwells on China and India, providing instances of the 'trilemma', which include the limits faced in pursuing an autonomous monetary policy to instil growth in the face of instabilities related to changing expectations in the de-regulated financial sector which include the open capital account. Section IV brings together the policy conclusions, which question the current ethos of policy making in de-regulated markets.

Section I

Global Imbalances and the Prevailing Interpretations

Concerns about the large and continuing current account deficit of the US, and the unsustainable debt for countries in Southern Europe have alerted the advanced countries and their policy-makers, especially with recent upheavals in the global financial markets. In the analysis of these turmoils, the large imbalances in current accounts of countries is often viewed as the major cause behind the global financial upheavals, thus ruling out other aspects which are no less important. Thus, the US current account deficit is viewed as responsible for its contractionary effects on the largest economy in the world, with its dampening effects on the global economy. With dollar used in the majority of international transactions, which has continued to sustain its value in terms of other currencies, the build up of the imbalance leaves it open as to whether dollar can continue around its current exchange rate in the coming years. A sudden depreciation of US dollar, as is obvious, is capable of initiating major disruptions in both global trade as well as payments.

Current account imbalances also relate to countries like Greece, Ireland, Portugal and Italy, with current account deficits resulting in unsustainable levels of debt. The latter has already transformed the Euro-zone in a limbo, with short term measures of debt-rescheduling on condition of austerity, often at the initiative of the rich EU nations like Germany and France.

In the literature China's trade surplus and USA's current account deficit are often paired as major sources of global payments imbalances. As for the US current account deficit, often the US monetary authorities point at the undervalued RMB rate, which they believe is a major cause behind USA's large trade deficit with China. A negotiation of the dollar-RMB rate, however, naturally remains subject to how China views it. In the same context, reserve accumulations in China and its deployment in US securities are viewed as further evidence of the lack of balance in international payments. Analysis of global imbalances

also addresses the steady accumulation of reserves by the Emerging Economies as a whole, especially with reserves held by China at \$3.23 trillion by September 2011, which is followed by those of Russia at \$516bn, Brazil at \$349.7bn and India at \$311.2bn (September 2011). Levels as above contrast the stock of reserves held by the Euro area as a whole at \$873bn and by Japan at \$1200bn, not to speak of USA and UK at respective levels of \$146bn and \$123bn only, all at end of September 2011.¹

Stocks of official reserves held by the Emerging economies are usually invested in assets which are considered relatively safe. Thus, US Treasury Bills have been a major item in such investments. Data released by US Treasury indicate that China's holding of US Treasury securities at \$1.16 trillion by December 2010 was more than a quarter (26.14%) of the aggregate foreign holdings of US Treasury securities at \$4.43 trillion. The remaining three countries in the BRIC group (Brazil, India and Russia) had, between them, \$377mn (8.4%) by the same date.² Thus, China's official reserves have naturally drawn attention as a major prop in the story relating to global imbalances.

Current account surpluses and deficits represent, from an accounting point of view, imbalances between savings and investment at national levels. Policies to restore balance as suggested, especially for China and other surplus countries having excess savings, recommend deflationary policies along with revaluation of their national currency. Given the general attraction of dollar based assets, USA is often viewed as a 'passive' partner, which is only adjusting to the 'savings glut' of the East Asian countries (including China).³ As pointed out by Ben Bernanke in his oft-quoted speech of 2005, current account deficits of US has been a *consequence* of the 'savings glut' in China and other East Asian countries. Also, that these countries have been accumulating international assets as a 'cautionary step' on the basis of what they experienced during the Asian crisis of 1997–98. Apprehending problems in continuing with these current account (and Savings-Investment) imbalances, Bernanke suggested more investments/savings in the surplus/deficit countries, which include China and USA.⁴ Responding to a suggestion which had its origin in a recent G-20 meeting, an author from a radically different point of view argued that China should no more lend to the 'troubled' Euro-Area Nations⁵. He

¹ IMF, *Principal Global Indicators* at <http://www.principalglobalindicators.org/default.aspx>

² *Treasury Direct* at <http://www.treasury.gov/resource-center/data-chart-center/tic/Documents/mfh.txt>

³ See for a position along these lines for a think-tank in US, Dunaway, Stephen (2009), *Global Imbalances and the Financial Crisis*, Council on Foreign Relations, March. [.http://www.cfr.org/economics/global-imbalances-financial-crisis/p18690](http://www.cfr.org/economics/global-imbalances-financial-crisis/p18690)

⁴ Bernanke, Ben (2005), "The Global Saving Glut and the U.S. Current Account Deficit," *IDEAS*, March 10, <http://www.federalreserve.gov/boarddocs/speeches/2005/200503102/>

⁵ Yu, Yongding (2011), "China Must Avoid Lending to 'Troubled' Euro-Area Nations," *Bloomberg*

also pointed out that by holding a large stock of US securities (which is nearly 23% of US bonds) as well as RMB liabilities, China has got trapped in the rigmaroles as well as the uncertainty around the dollar-RMB exchange rate. It is pointed out that US dollar has devalued by 94% between 1929 and 2009. If at the moment China acts by unloading sharply the US securities, there can be chaos in the financial market.⁶ The same author also mentions the operation of speculation in the Chinese economy, despite the recent official clamp down in the housing/real estate markets and the underground credit network (which is indicated by the recent collapse of the Wenzhou credit market). Incidentally, real investment happens to be the major source of fixed asset investment in China in recent times.⁷

As mentioned in a recent study from the Bank of International Settlements, links between current account imbalances, changes in stocks of reserves and a financial crisis can be questioned if one considers the *gross* inflows of capital which impacts the private transactions, especially via the banking sector, which in turn affect the level of liquidity and credit in the receiving country.⁸ Others also have questioned the 'savings glut' argument as an explanation of the global imbalances and the crisis by pointing it out that the large current account deficits incurred by US are more due to domestic policies.⁹ It has been suggested that as remedial measures, US needs to rebalance its own economy by keeping consumption growth below GDP growth while strengthening international competition.¹⁰

Arguments related to the global imbalances take a different tone when an explanation is sought in the cost-competitiveness enjoyed by the surplus country (China) in terms of the advantages of cheap labour cost as well as an undervalued exchange rate. Identifying the cost advantage as "...enormous arbitrage opportunities in labour rates," a study points at the tendencies for MNCs to cluster in such places reflect "...the economic laws of gravity". However, as a remedial measure, the authors suggest a 30% to 50% devaluation

News, September 14, [www.Bloomberg News](http://www.BloombergNews)

⁶ Yu, Yongding, "Witness to Financial imbalances: A Double Surplus, the Yuan Exchange Rate and the Dollar trap," available at English.caixin.com

⁷ Yu, Yongding, "The China Bears' Feeble Growl," 29th November 2011, available at www.project-syndicate.org

⁸ Borio, Claudio and Piti Disyalat (2011), "Global Imbalances and Financial Crisis: Link or no Link?" BIS Working Paper No.346, May.

⁹ "Emerging Market Economies, Global Trade Imbalances, and the US Dollar: An interview with Pieter Bottelier," NBER, 25th April 2011, available at www.nber.org

¹⁰ Bottelier, Pieter, "China and the International Financial Crisis" in Ashley J. Tellis, Andrew Marble and Travis Tanner (Eds.) *Strategic Asia 2009–10: Economic Meltdown and Geopolitical Stability*, the Ninth Volume in NBR's Strategic Asia series.

of dollar as well as Euro, in order that the exchange rates of those currencies “...reflect the (PPP) exchange rates of Emerging Market countries more closely.”¹¹ There have been related concerns on the exchange rate, holding the inflexible exchange rate policy of China and other Emerging Market economies responsible for the continuing global current account imbalances.¹²

Opinion on the mounting global current account imbalances, centred around USA and China, thus reflect divergent positions. While a standard position reverberates around the excess savings in China and the undervalued RMB exchange rate argument (which incidentally continues to be the official line of thinking in USA), interpretations advanced from other quarters provide a different picture and policy conclusions. But the focus in both has been on the possible consequences of the continuing imbalance on the global economy as a whole; which leaves out the effects at national levels, an aspect we will deal with in the following pages.

Section II

Current Account Surpluses and Policy Options

Attention paid to the global current account imbalances, discussed above, leaves out aspects which include the limited policy options as remain for countries with current account surpluses. The latter relates to what is described in the literature as an ‘impossible trilemmas’, of allowing capital account convertibility (CAC), along with managed exchange rate while trying to maintain an autonomous monetary policy. Of the three variables as above which define the “impossibility” theorem, the option of reversing openness of the capital account by resorting to controls is more or less ruled out, especially in terms of the branch of open economy macro-economics embedded in the above strategy. Hence the choice of policy makers remains between managing the exchange rate (which otherwise moves freely with the market) and national autonomy in monetary policy. Again, movements in exchange rate, if left to the market, often clash with other goals, especially when inflows of capital push up the exchange rate of the local currency which worsens the trade balance under a “Dutch Disease Syndrome”. Thus comes the need to manage the real exchange rate, say within a band, at a crawling peg, or at a fixed real rate which maintains the competitiveness of domestically produced goods and which leaves out the third option to follow an autonomous monetary policy.

¹¹ Bryan, Lowell (2010), “Global Critical Imbalances,” *McKinsey Quarterly*, June 2010, available at http://download.mckinseyquarterly.com/globalizations_critical_imbalances.pdf

¹² Subramonian, Arvind (2010), “China key to unwinding the global imbalances,” *Economic Times*, 20th April.

What all, then remain as the conventionally accepted parameters of monetary policy in an open economy? Situations of say, excessive flows of capital to a country, the related tendencies for local currency to appreciate and efforts on part of monetary authorities to sterilise the influx of foreign exchange by adding on to official reserves, with related increases in M_0 and the expansionary effects on M_3 put further pressures on monetary authorities to take action. Consistent with the monetarist frame of analysis as in the Mundell-Fleming model and in its sequel, the “impossible trinity” theorem, monetary authorities put ‘inflation targeting’ as the main agenda of their action. Little attention, however, is paid to the need to harness monetary policy in the interest of the domestic growth process which remains as no less important to the national economy. Moreover, hardly any attention is paid to the related effects in terms of curbs on social sector spending and public investments which come as a consequence. With inflation targeting as the primary goal of monetary policy in an open economy which has CAC as well as managed exchange rates, sale of stabilisation bonds has been a convenient tool for achieving monetary stabilisation. A problem as above is being faced by developing countries like China, India and a few other emerging market economies, with their demonstrated tendencies to accumulate official reserves in key currencies. Increases in reserves are also desired by monetary authorities in order to protect the exchange rate of their national currencies.

The notion of ‘impossible trilemma’, as pointed out by Paul Krugman¹³, is based on the Friedman-Mundell-Fleming IS-LM-BP framework of open economy macro-economics with implications in line with a flexible exchange rate policy. However, as pointed out, “... the impossible trinity provides an incomplete policy menu that leaves much off the table. This omission includes (a) co-ordinated monetary policy across countries; (b) managed exchanged rates between countries; and (c) managed capital flows.”¹⁴ The ‘menu’ as above, however, leaves much to be fulfilled, especially in the context of the current global financial scenario.

Further analysis of the notion of the ‘trilemma’ offers a contextualisation of it in terms of the prevailing pattern of global financial flows and imbalances. Interpreting the large reserves held by some emerging economies, it is held that, “...in the absence of a major reform of global financial architecture, emerging markets remain exposed to sudden

¹³ Krugman, P. (1999), “O Canada: A Neglected Nation Gets Its Nobel,” *Slate Magazine*, 19th October.

¹⁴ Palley, Thomas I. (2009), “Rethinking the Economics of Capital Mobility and Capital Controls,” PERI Working Paper 193, Political Economy Research Institute, University of Massachusetts at Amherst, February.

stops and de-leveraging crises.”¹⁵ These economies had thus an additional urge to hold these reserves as a precautionary measure. According to this study, these countries are thus faced with what has been described as a ‘quadrilemma’ rather than a ‘trilemma’, which is explained by the ‘self-insurance’ motive on part of those countries faced with additional uncertainties in the global financial market. The study also points at financial deepening (as recorded in the rising M2/GDP ratio) as one more reason on part of those countries to maintain higher reserves as a measure to tackle possible flights of capital by domestic residents.

A qualification, as above, while adding a new dimension relating to ‘uncertainty,’ also succeeds in revealing the conceptual weaknesses of the formulation which we hinted at earlier in this paper. Thus, the ‘trilemma’ (or even the ‘quadrilemma’) essentially postulates a static framework in terms of the intersecting IS-LM-BP framework. With exchange rates, monetary policy (including interest rates) and the magnitude as well as the composition of capital flows all subject to volatility which is hardly predictable, policy options faced by the concerned countries remain even more constrained—an aspect which provides an interpretation of the high reserves maintained by those countries. The latter in turn impacts the policy options in several ways. Thus, the prevailing pattern of international financial transactions and the global current account imbalances, while generating the ‘excess’ reserves held by the emerging market countries, need to be viewed in the context of the uncertainties and the related compulsions as are per force faced by these countries in the de-regulated financial market.

Section III

Policy Options in the Emerging Markets of China and India

One can, with the above background, provide a better understanding of related policy issues in the high growth countries like China and India, much of which are induced by developments in the global financial markets. Contrary to the notion of ‘savings glut’ by Bernanke and some others, both countries have somehow been subjected to a path of passive adjustments, to inflows of speculative (or other) capital which originate from overseas and are thus external to their economies. The adjustments affect their options in formulating their domestic monetary policy which include the responses to the changing money supply, changes in interest rates abroad and related matters.

¹⁵ Aizenman, Joshua (2010), "The Impossible Trinity (aka The Policy Trilemma)," *the Encyclopedia of Financial Globalization*, May.

China

China's integration to the global markets was matched by spectacular increases in its trade surpluses as well as net capital inflows, intercepted by some declines after the global financial crisis of 2008–09. [The trade surpluses rose from an average of \$375.7bn during 2000–04 to \$2.83 trillion during 2005–10.] This was combined by similar increases in foreign direct investments (from \$47.79bn on average in 2000–05 to \$185bn by 2010) and in portfolio investments (from an average of \$6.39bn during 2000–05 to an annual average of \$25.91bn by 2005–10). Those led to expansions in the stock of official reserves (excluding gold) held by the country, which has risen sharply from an average of \$339.5bn during 2000–04 to an average of \$1.77 trillion during 2005–10.¹⁶ According to unofficial estimates, the recent value of China's official reserves exceeded \$3 trillion by March 2011, reaching \$3.27 trillion and \$3.18 trillion respectively by October and December of 2011.¹⁷ The steady de-regulation of China's financial market which started in 2005 has been continuing without much interruption. Rising capital inflows, however, did not impact the managed exchange rate of the Yuan which remained steady at 8.28 RMB per US dollar between 2000 and 2004. Responding to pressures, especially by the US, to adjust the currency upwards, the RMB was de-linked from US dollar by an official announcement of July 2005. This led to a moderate revaluation of the currency to RMB 8.11 per dollar. Chinese currency has been appreciating moderately since then, with the most recent figure quoted in the market at RMB 6.38 to a dollar on September 2011¹⁸. However, the official Chinese stance (of continuing with monetary interventions in a bid to avoid major appreciations in the national currency) seems to have prevailed even with moderate appreciations, especially in view of a simultaneous depreciation in dollar, a major link currency in currency markets.

China has been experiencing twin surpluses, between its current account and the capital account. This has contributed to the accumulation of official reserves, which at around \$3.18 trillion, is unprecedented by any previous record. We analyse below the related domestic impact on the domestic economy, which, as pointed out above, not by posing a 'trilemma' (or 'quadrilemma') can also be operative in limiting options to official policies.

To reiterate what we have already mentioned earlier as the 'trilemma' under open capital account, entry of capital from overseas tends to have its initial impact on the nominal exchange rate of the domestic currency. To avoid an appreciation of the domestic currency, monetary authorities often resort to direct purchases of foreign currency which

¹⁶ Unless otherwise mentioned, data presented in this section are all from IMF, *International Financial Statistics*.

¹⁷ <http://www.chinability.com/Reserves.htm>

¹⁸ <http://www.x-rates.com/d/CNY/table.html>

simultaneously generates high powered money (reserves) with proportionate additions to domestic money stock. Thus, reserves, as high powered money, provide sources to additional supply of money, an aspect which adds to the pressures on monetary authorities to tighten money supply. To avoid further additions to liquidity in the market, the monetary authorities often tend to sterilize a part of the additions to money supply through sale of official bonds (open market operations). Additionally, the monetary authorities also tighten credit by using other tools (like cash-reserve ratios, statutory liquidity ratios, hikes in Repo, reverse Repo rates and prime lending rates) in a bid to control the inflationary tendencies as may result from monetary expansion. Policies as above, prompted by financial flows from abroad, not only deprive the receiving countries of their autonomy in the choice of their economic policies, but can also interfere with goals to achieve growth and expansion for their real economy, especially with contractionary effects on supply of credit.

As for China the continuing trade surpluses and the rising capital inflows (especially FDI) which have continued along with a managed exchange rate policy, led to steady increases in officially held reserves. One observes continuous monetary expansions, especially over the last decade (*See Appendix Chart B*). The monetary authorities injected liquidity further after 2008 by using fiscal expansionary policies, a reversal of open market policies (by stopping sales of bonds) and with adjustments in the cash reserve ratios maintained by banks (*See Appendix Chart A*). The measures led to liquidity expansions in the market and a lowering of inter-bank lending rates which fell even below deposit rates. The trend continued and M2 went up successively during the following years. As held by some, the changes signified a monetary policy which was 'too loose'. Also that "...in accumulating the large stock of US Treasury Bills (T Bills), China 'faces a triple whammy' by facing possible capital losses with a possible drop in dollar exchange rates and in prices of the T Bills, plus an inflationary pressure in the domestic economy."¹⁹

Views held by scholars differ as to whether China has retained autonomy in her monetary policy in the face of the obstacles underlying the 'trilemma' and its impossibility. According to one study, the test should not rely only on whether short term interest rates in China are driven by Fed's monetary policy (i.e. US interest rates). The authors argue that by employing capital controls and by relying on measures other than interest rates China has been able to maintain 'relative autonomy' in monetary policy. Thus, use of policy devices 'other than interest rates' (like reserve ratios, use of OMOs, etc.) in essence are also part of the package of monetary policy followed by

¹⁹ Yu, Yongding, "China's Policy Responses to Global Financial Crisis," Richard Snape Lecture 25 November 2009, Australian Productivity Council, Melbourne.

China. From this angle, interest rates have not always been the primary instrument of policy in the country²⁰. Incidentally the logic applies to countries like India as well, as we indicate later in this paper.

As for related studies in the literature, we can also refer to another study on the ‘impossible trinity’ question, relating to the Asian economies²¹. While we do not share the prescriptions offered in that paper to use flexible exchange rates as a way-out of the impasse in the ‘trilemma’, we agree with what the authors view as similar situations of a trinity in the high growth Asian economies like China and India. Using measures of capital account openness by means of Chinn-Ito database and also the gauge of financial opening (or integration) by using Lane-Milesi-Ferretti calculations (which relies on ratios of stocks of financial assets plus liabilities to cumulative flows of GDP), the study arrives at a measure of *de jure* capital account opening for China and India during recent years. Indicators as above, matched with exchange rates which are rather inflexible, have led these two countries, as pointed out in the paper, to situations of an ‘impossible trinity’.

Monetary policy (or management), as we have emphasized earlier, consists of a package which includes the different tools as can be used to influence the level of liquidity. Thus, use of interest rate is but one among other devices which includes cash-reserve ratios for banks and sale of bonds (open market operations). It is possible to observe that Chinese monetary authorities have been consistently making use of all the above three, and in a bid to contain the changing level of liquidity as well as the movements in the price index.

Changes in China’s external accounts with the large trade surpluses along with the net inflows of FDI and (of late) portfolio capital have caused phenomenal increases in the country’s official reserves. As a consequence, the domestic economy witnessed steady expansions in liquidity. Attempts to neutralise the upward pressures on the RMB rates as well as the price rise in the domestic economy included direct purchases of foreign currency as well as sales of marketable bonds by the monetary authorities. The changing scenario between 2002 and 2010 can be observed from *Chart A in the Appendix*.²² More

²⁰ James, J. Reade and Ulrich Volz (2010), “Chinese Monetary Policy and the Dollar Peg,” June.

²¹ Patnaik, Ila and Ajay Shah (2010), “Asia Confronts the Impossible Trinity,” Working Paper 10/64, National Institute of Public Finance and Policy, January.

²² The pattern tallies with the data released by the PBoC which indicates a drop in CPI between Q1 and Q3 of 2009 by 1.1% (on yoy basis) and a drop in CPI at (-)1.3% during Quarter 3 itself of 2009. Loans offered in domestic currency during the quarter expanded by 34% (yoy) while cuts were announced in reserve ratios and sale of bonds were fewer (or none), all in an effort to revamp the economy from its post-crisis slump. PBoC, China Monetary Policy Report Quarter Three, 2009.

recently, by Quarter 2 of 2011, prices rose further by 5.4% (yoy).²³ The reserve ratio actually increased 7 times over the first three quarters of 2011 with the ratio rising as much as by 21.5% by October 21st, 2011²⁴.

Measures on part of monetary authorities to control the recent inflation also included sales of official bonds which depressed the domestic inter-bank lending rate by 0.41% (yoy) in December 2011 and it reached a low of 3.74%²⁵. It can be expected that such actions led liquidity in the market to subside, especially as a consequence of the aggressive sales/purchases of bonds in response to changes in cash flows and the related changes in prices.

To arrive at a conclusive argument, we have used the monthly as well as annual data for China for 2006–2010 for a few variables. Those include official reserves, M2, RMB exchange rates vis-à-vis the US dollar, changes in the price levels (CPI), sale of government bonds, bank rates and lending rates and finally, China's trade balance. The data has been used to test the correlation among them.

Considering first the correlation results at 1% level of significance, we observe the following:

1. Changes in reserves and those in money supply are positively correlated, as is expected when policy changes in interest rate are guided by changes in money supply. The result holds for both monthly and annual data for 2006–2010 (*Tables 3 and 4*).
2. Money supply and bond sales are positively correlated, as indicated by annual data for 1998–2010 (*Table 1*). Again, this is expected, and shows use of monetary policy to ward off expansions in liquidity.
3. Reserves and exchange rate of the RMB, however, has a negative relation during 2006 and 2010 (*Table 3*). This can be interpreted by the management of the exchange rate in China which continued even after the 'de-link' with dollar in 2005.

Looking at the results at 5% significance level, the following can be reported:

1. Sale of bonds and movements in prices (CPI) bear a positive relation between 1996 and 2010 (*Table 1*). This also shows a perceptible effort on part of monetary authorities to control prices by sales of bonds.

²³ PBoC, China Monetary Policy Report Quarter Three, 2011

²⁴ Körner, Finn and Dirk Ehnts (2011) "The True Costs of Sterilization: What it takes China to Manage its Exchange Rate" (mimeo), October 27.

²⁵ PBoC, China Monetary Policy Report, Quarter Four, 2011.

2. Money supply (M2) and reserves are positively correlated on the basis of annual data 1998–99 to 2010–11 (*Table 2*), a result which is also confirmed at 1% level for the same period (*Table 3*) as reported above. The link confirms the impact of trade surpluses and net capital flows on money supply via changes in official reserves.
3. Lending rate and bank rate also move together, which is expected (*Table 1*).

Results as above indicate a distinct impact of China's external sector transactions on the package of monetary policies relating to the domestic economy. Accumulation of reserves, as resulted from the trade and capital account surpluses that the country enjoyed, impacted the supply of money which in turn prompted the use of sterilisation policies via sale of bonds (and also with hikes in reserve ratios, especially during 2010 when those were adjusted upwards three times).²⁶ Incidentally, as pointed out, a large part of the RMB 9.7 trillion post-crisis stimulus during 2008 and 2009 was channelized via the banking system, responsible for additional bank credit amounting to 7.3 trillion during the first half of 2009. Since such expansions were made possible under government pressure it did not have to rely on monetary base (including reserves). One also observes that the PBoC stopped selling central government bills in the 4th quarter of 2008 which coincided with the onset of the global recession. Steps as above led to spectacular expansions in liquidity in the market, pushing down the interest rate in inter-bank market lower than the deposit rates.

The policy moved in a reverse gear by 2010 as inflation was on the cards with monetary tightening setting bank credit quota at 7.5 trillion (as against 9.7 trillion in 2009). Also, as mentioned earlier, reserve requirements of banks were raised three times during the year, open market operations were used more effectively and inter-bank interest rates were increased.²⁷ One can notice the sharp swings in interest rates, with the lending rate ranging between 5.3% to 12.6% and the bank rate between 2.7% to 10.7% between 1990 and 2010 (*see Charts A and C*). One can even relate such swings to the changing scene, of the Asian crisis inducing steep cuts in interest rates between 1997 and 1999, followed by upward movements from 2005 as capital inflows started peaking up and once again, cuts in interest rates to combat the contractionary forces during the recent global downturn of 2007–08. The latter was followed by a renewed tightening of rates over 2009–10. Since 2005, the steady pace of liberal capital flows led to expansions in portfolio inflows as well as stock market capitalisation.²⁸

²⁶ Yu, Yongding (Ed.) (2010), *China & World Economy*, Vol. 18, No. 2, Wiley-Blackwell.

²⁷ Yu, Yongding (2009), "China's Policy Responses to the Global Financial Crisis" (mimeo), Richard Snape Lecture, Melbourne 25th November.

²⁸ Sen, Sunanda (2007), "China in the Bull Shop: Dealing with Finance after WTO" in A.K. Bagchi and Gary Dymksi (Eds.) *Capture and Exclude: Developing Economies and the Poor in the Global*

Evidence as above helps us to conclude that free flows as well as the volatility of overseas capital had a significant impact on China's monetary and related policies, curbing, in the process, monetary autonomy in the economy.

India

With near full convertibility of the Indian rupee and capital flows nearly free, official reserves held by India have been rising steadily, peaking, by August 2011 to a level of \$321bn which, after China, is one of the highest held by the emerging market economies. We draw attention in the following pages to the related changes within the economy, and especially the limits to options as have been faced by the policy makers. Successive liberalisation of global capital flows to India since 1992–93 led to a steep rise in the inflows of FDI and especially, of portfolio capital to the country; with capital account surpluses much in excess of the current account deficit which the country was experiencing. However, official interventions in the forex market successfully transferred a considerable part of the currency inflows to the exchequer, thus contributing to expansions in the level of official reserves; while avoiding appreciations of the rupee rate. As already pointed out, additions to reserves (high powered money) are capable of contributing monetary expansions, in turn posing additional problems for the policy makers.

We have observed in an earlier paper that monetary policy in India has often been conditioned by the exigencies related to the external sector; and in particular, to the direct and indirect repercussions of the surges in capital flows²⁹. Faced with expansions in money supply, which nearly tripled from around '2005 thousand crores in 2003–04' to nearly '5600 thousand crores by 2010–11', and with the inflationary pressures, especially on food items, authorities have been trying monetary sterilization by selling government bonds, and trying other measures like raising the CRR, etc. Incidentally, sales of government bonds were also in conformity with the marketised borrowing programme of the government, which, in terms of the statutory norms of the Fiscal Responsibility and Budget Management Act 2003 (FRBMA), replaced the non-market borrowings of the government from the Central Bank (earlier practiced as deficit finance). Market borrowings also helped in controlling the fiscal deficit as a proportion of the GDP, as needed in terms of the statutory requirements.

Finance, New Delhi: Tulika Books.

²⁹ Sen, Sunanda (2010), "Managing Finance in Emerging Economies: The Case of India," *Levy Economics Institute Working Paper* No. 630, Levy Economics Institute of Bard College, December. See also, *Alternative Economic Survey*, 2010 (Delhi).

Attempts were also made by the monetary authorities to tighten/cheapen credit, with hikes/reductions in interest rates, changes in Repo as well as the reverse Repo rates and with variations in Cash Reserve Ratios (CRR) maintained by banks with the RBI.³⁰

To verify the arguments, we have used the data relating to M3, exchange rate of rupee (ER), market borrowings of central and state governments (MBCS), FDI, Portfolio flows, Reserves, Gross fiscal deficit (GFD) gross primary deficit (GPD) and some items in the budget under heads of expenditures, for the period between 1990–91 and 2010–11.

Results showing the correlation coefficients between variables for annual values relating to above years are provided in *Tables 4 and 5*. Those indicate positive correlations at 1% level of significance among levels as well as log values for the majority of variables. The logic, as explained earlier in the context of China, relates to a sequence which include the rising capital inflows (FDI and portfolio), rise in reserves and related expansions in money supply which were sought to be neutralised with bond sales (and as can be observed from *Table 6*, by rise in interest rates). The pattern clearly is indicative of limited autonomy in India's monetary policy during the phase of capital account liberalisation over the last two decades. [The rising budget deficits, both fiscal and primary, do not add much to the above argument but unfold some other aspects which we will indicate later.]

We also tried to test the causal links between changes in some variables, by using regression results with significance at 5% level, while using quarterly data between 2000 and 2010 (*Table 6*). The results explain changes in interest rates as a positive function of growth in M3 and also inflation rate as a positive function of changes in GDP. Evidently, interest rates set by the monetary authorities during this period were in response to the supply of money, which, as mentioned earlier, were subject to changes in the external sector transactions. However, the results indicate a negative causality between the same variables as we regress the data set for a longer period between 1991 and 2010 (*Table 7A*). The explanation rests on the standard inverse links between the interest rate and money supply in a market-determined system, with a rise in money supply existing with a dampened interest rate. In contrast, the earlier case is one where monetary policy takes the lead to fix the interest in response to changes in money supply itself, as happened since 2000, in India.

A pattern as above clearly indicates a loss of monetary autonomy on the part of policy makers, and moves which may be contrary to the interests of the real economy. As an example one can mention the recent tightening of credit by the Reserve Bank of India, the Central Bank. The above has introduced successive rounds of upward movements in

³⁰ *Ibid.*

interest rates along with hikes in cash-reserve ratios as well as open market sales of government bonds, all in a bid to mop up liquidity in the market. Thus, the Repo rate (which is the rate at which money is injected in the system by the central bank) was adjusted 5 times between May and October of 2011, rising from 7.25% in May to 8.50% in October.³¹ Hikes as above were opposed to the interests of the real economy as is demonstrated by the noticeable drop in GDP from an average of 8.4% over 2009–2011 to 6.1% during the quarter ending December 2011.³²

Monetary policy package of the government in response to the external sector related changes included (as mentioned above) open market policy using government bonds. (Sale of bonds which was only at '99314 crores in 2000–01' rose to '111276 crores in 2010–11'). These measures of market borrowings were obviously connected to the overall limit on the fiscal deficit in terms of the FRBMA. Moreover, that such sales were prompted by rising M3 can also be observed in our tests (for data relating to 2000Q1 and 2010Q4) where sale of bonds is regressed on changes in M3 as well as inflation rate.

Finally, as can be observed, growth rates in M3 do not bear any significant relation to price changes (*Table 6*), thus disputing the quantity-theoretic argument in strategies of inflation targeting. Prices, as can be argued, are also influenced by factors (say supply of output) other than sheer money supply.

On the whole, our exercise with data confirms the argument put forward in earlier sections of the paper that monetary policy in India has been subject to the exigencies arising out of the open capital account and the need to manage the real exchange rate of rupee at a competitive level as well as to control inflation.

We now analyse some additional implications of the monetary policy package, and in particular, the effect of monetary sterilisation by means of bond sales. The latter, sold to the public, necessitates the payment of interests in the budget. This adds to expenditure in the fiscal budget which, again, is subject to the restraints of the FRBMA limiting the size of the deficit. We find that as a consequence of the rising interest bill, the deficit in the primary budget (which is fiscal deficit less interest payments), measured as a proportion of GDP, is further reduced (*Table 7*). With head of expenditures in the primary budget including subsidies, capital expenditures and defence expenditure, a major brunt of the cut in the primary deficit has fallen on subsidies, which show a decline, both as share of GDP and as shares of government expenditure in recent years. (*Charts G, H, I*).

³¹ Reserve Bank of India Bulletin, December 2010.

³² www.ndtv.com

The pattern indicates the following:

- (a) the relative drop in primary deficit as compared to the fiscal deficit, largely with steep increases in interest payments on government bonds as were sold to the public over the last few years;
- (b) the rising levels of market borrowings in recent years; and
- (c) the changing composition of expenditure in the primary budget³³, with the rising level of interest payments in fiscal budget far exceeding the payments under heads of subsidies and capital expenditures, the latter entered in the primary budget.

An outcome as above as described in this section on India signifies a trade-off, between achieving what is considered as 'financial stability' (inflation targeting, exchange rate management) on the one hand, and the developmental goals of a country which include the pitching of a growth-inducing interest rate and commensurate levels of social sector spending on the other hand. The dominance of finance in policy making for the developing economies is clearly visible in these measures, following the dictates of global finance with compulsions which make for a selection of policies which are not necessarily conducive to the interests of their real economy.

The 'trilemma' (or 'quadrilemma') which India has been facing with the closer integration with global financial markets has thus not only constrained its monetary policies which has been consistently side-tracking the interests of real growth, but has also changed the composition of public expenditure, away from distributional justice to the rentier interests. Examples are not difficult to find, with RBI's use of inflationary targeting in recent times (which include tightening of credit, successive rounds of hikes in primary lending rates and reserve ratios), despite the low growth performance of the economy, especially in the industrial sector.

Concluding Notes

The narrative as well as an analysis of the global imbalances, as exist in the literature, remains incomplete unless they capture that part of the story which relates to the experiences of the emerging economies which are experiencing the surges in capital flows. In addition to disregarding the implications of the capital flows on their domestic economies, especially in terms of the 'impossibility' of following a monetary policy that

³³ In terms budget classification in India, Fiscal Deficit = Total Expenditure – Total Receipts = [Revenue Expenditure + Capital Expenditure] – Total Receipts
or, Fiscal Deficit = [Interest Payments + Subsidies + Defense Expenditure + Capital Expenditure] – Total Receipts
Primary Deficit = Fiscal Deficit – Interest Payments = [Subsidies + Defense Expenditure + Capital Expenditure] – Total Receipts

suits growth in the domestic economy, such analysis fails to recognise the significance of uncertainty and changes in expectations as factors behind the build up of the large official reserves, often on a precautionary mode. The consequences, as discussed above, are more than one, affecting the fabric of growth and distribution in these economies. Incidentally, it is the flow of *gross* capital (rather than the net current account imbalances) which plays an instrumental role in the concerned economies by influencing the banking system, an argument which applies to the advanced countries as well.

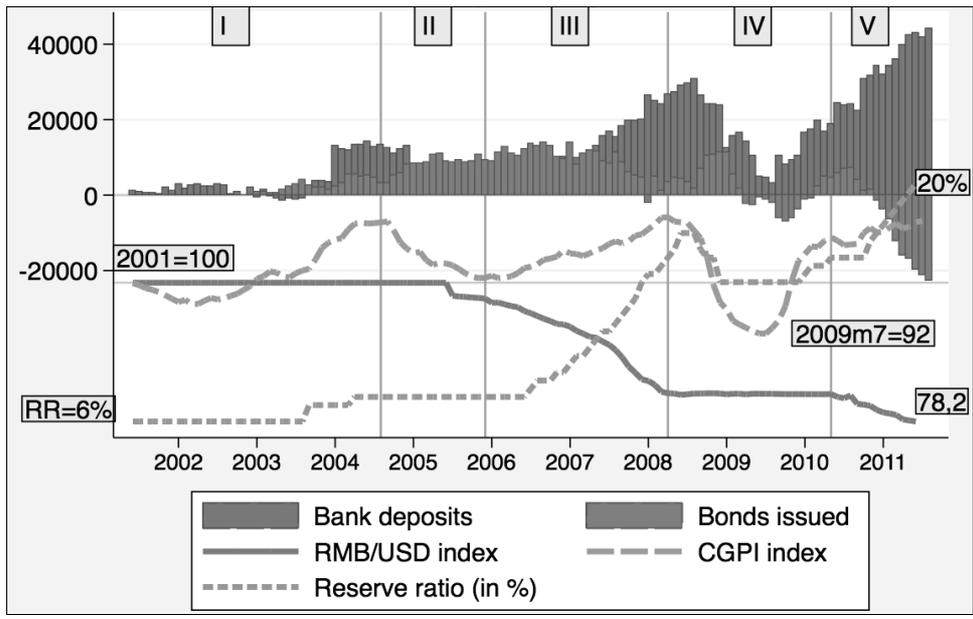
Experiences of China as well as India, with their de-regulated financial sectors in recent years, bear testimony to the points mentioned above. While China had the capacity to make use of the fiscal budget to amend the unwanted consequences, the country has already experienced the plunge that comes with free capital flows, with volatile and short term capital setting the direction of investments, and to spheres of short term profitability. Also the high level of reserves, with a large portion invested in US, defines the significance of US for China, not only as a major trade destination, but also in protecting the value of wealth invested in US dollar.

As for India, the country lacks the flexibility, as enjoyed by China, in managing finance by using fiscal resources, given the norms of fiscal compression. The related effects include the volatility in the money and capital market, the related measures by monetary authorities, both in injecting liquidity as needed and more often, in restraining the latter by using standard tools like reserve ratios, bank rates and open market operations in security market. The latter has already increased the budgetary liabilities under the head of interest payments which makes it difficult to meet liabilities on other heads like social sector spending.

Financial integration and free capital mobility, which are supposed to generate growth with stability in terms of the “efficient market” hypothesis, have not only failed to achieve their promises, especially in the advanced economies, but also have pushed the high growth developing economies like India and China to a state of compliance, where domestic goals of stability and development are sacrificed to attain the globally sanctioned norms of free capital flows.

Appendix

Chart A
China: Five Stages Programme



Note: l.h.s. year-on-year changes in stocks in RMB 100m Yuan; People’s Bank of China
Source: Dirk H. Ehnts and Finn M. Körner, “The true costs of sterilization: What it takes China to manage its exchange rate” (*mimeo*), 2011.

Chart B
China – Changes in M3 2000–2010

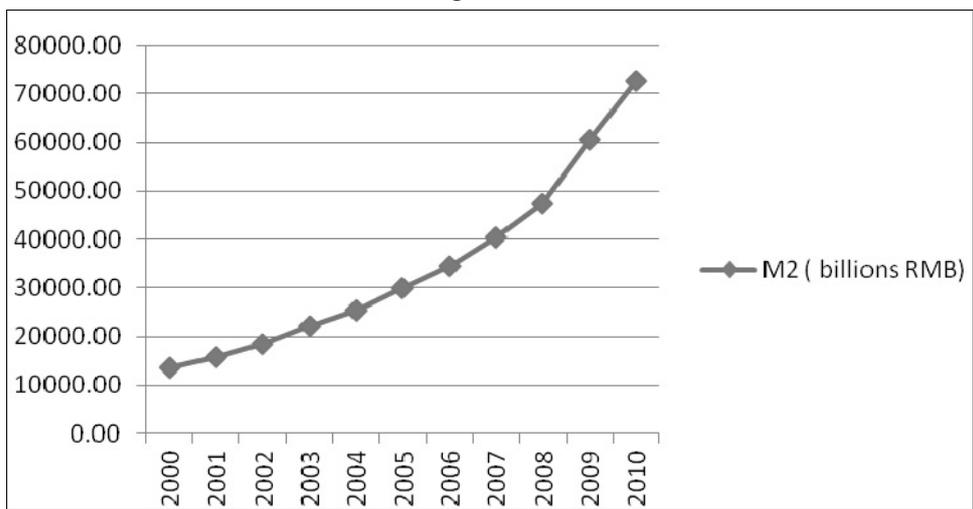
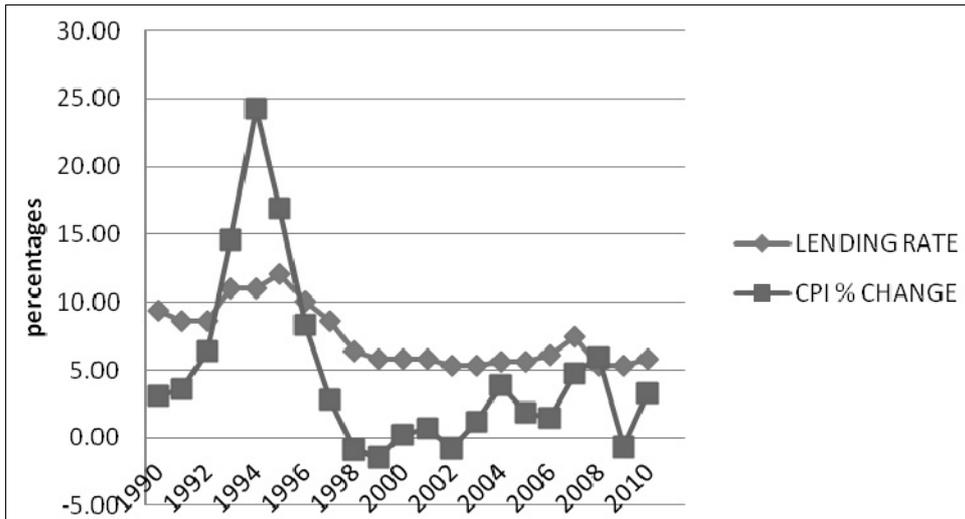
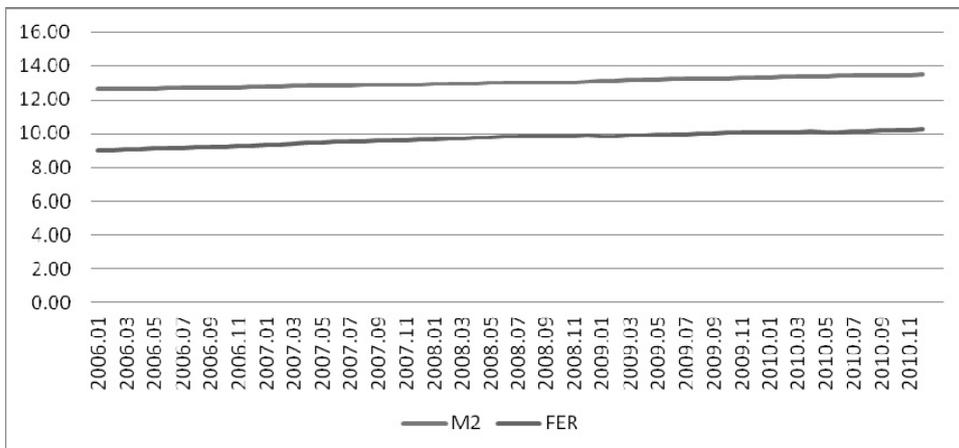


Chart C
China: Lending Rates and CPI Changes (Percentages)



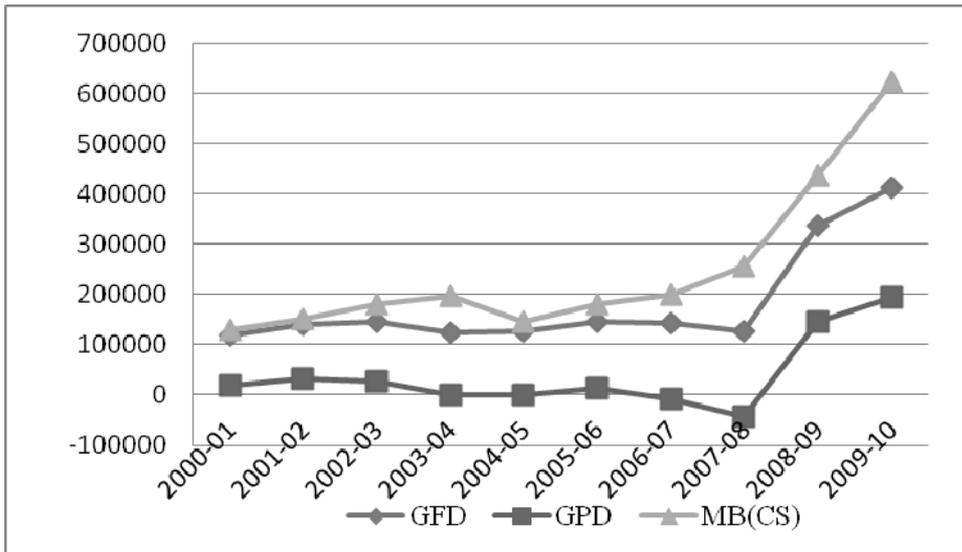
Source: IMF, International Financial Statistics

Chart D
India: M2 and Foreign Exchange Reserves (log values)



Source: Economic Survey, Government of India

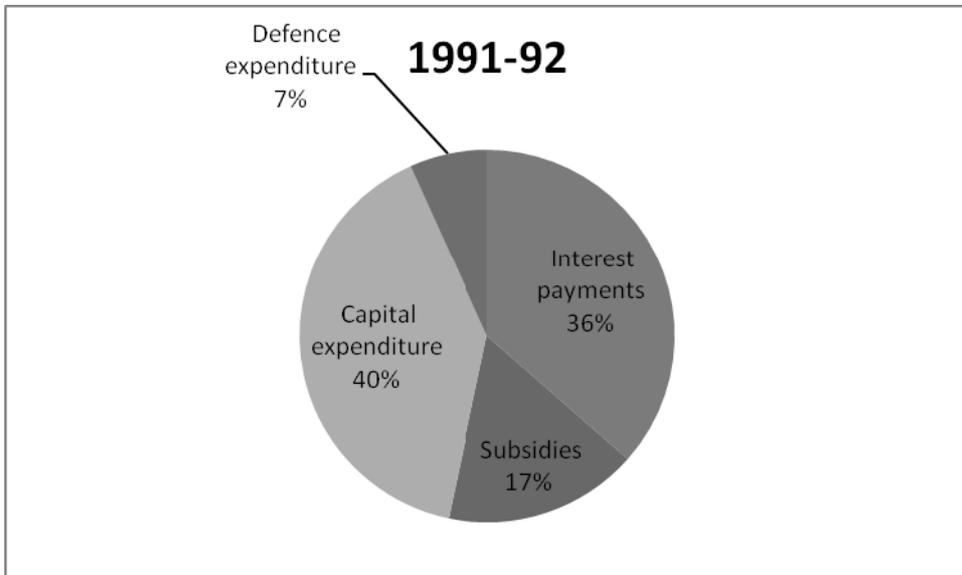
Chart E
India: Fiscal Deficit, Primary Deficit and Market Borrowings (in ₹crore)



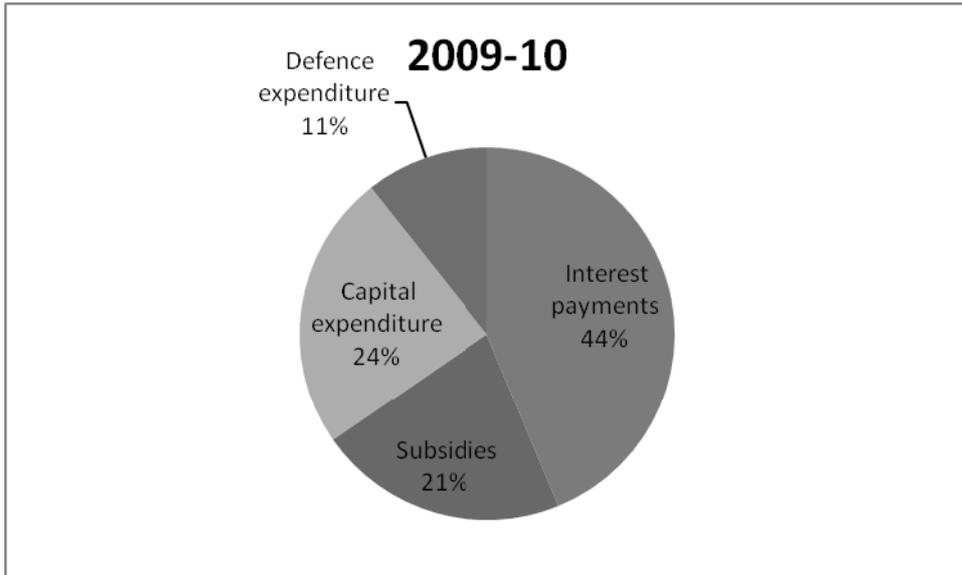
Note: GFD: Gross fiscal Deficit, GPD: Gross Primary Deficit and MB(CS): Market borrowing of Central and State Governments

Source: Budget documents of the Government of India.

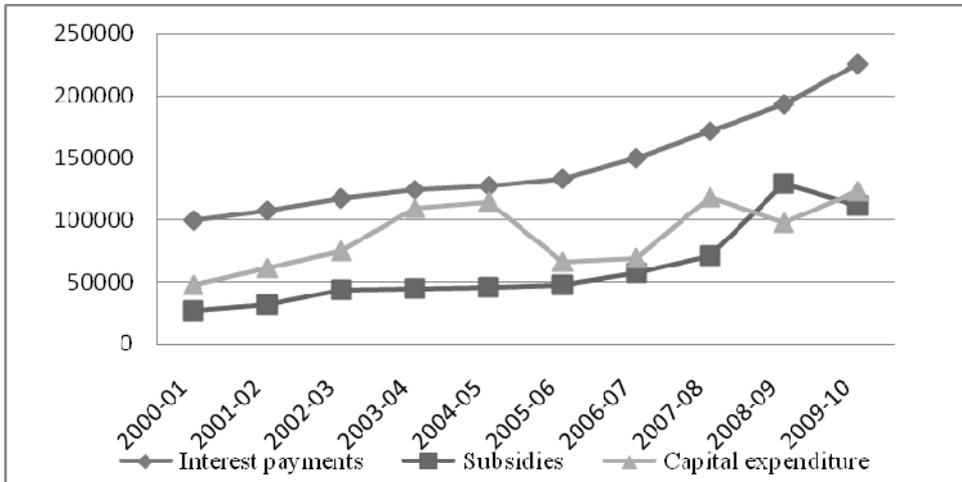
Chart F
India



**Chart G
India**

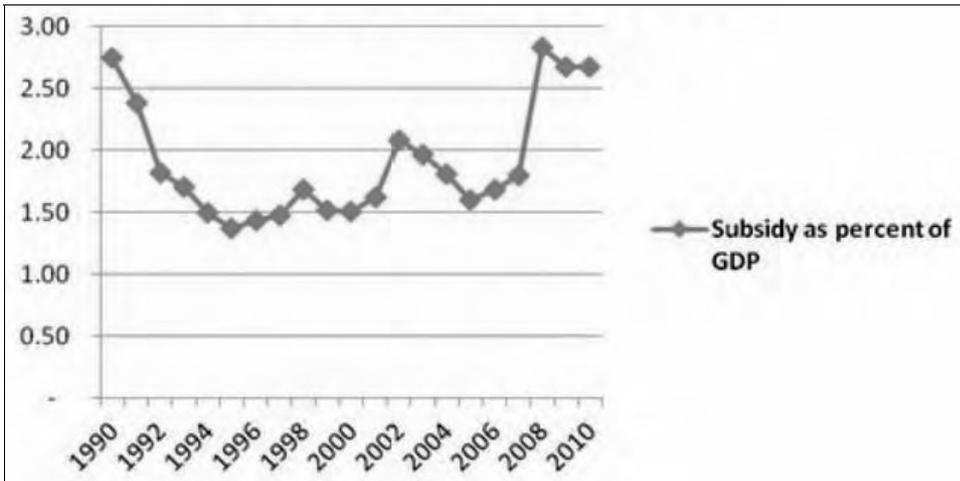


**Chart G(1)
India: Major Heads of Expenditure: Central Government (in ₹crore)**



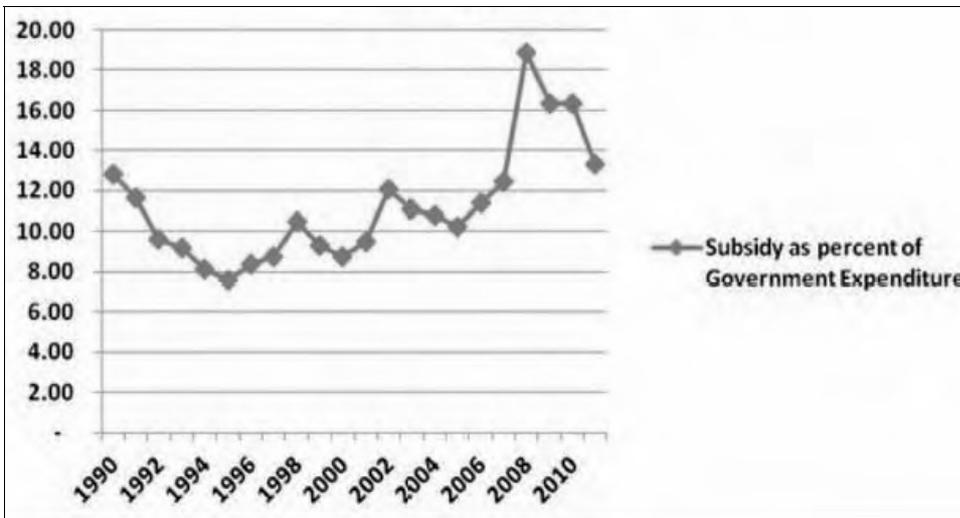
Source: Budget documents of the Government of India.

Chart H
India: Subsidies as proportion of GDP



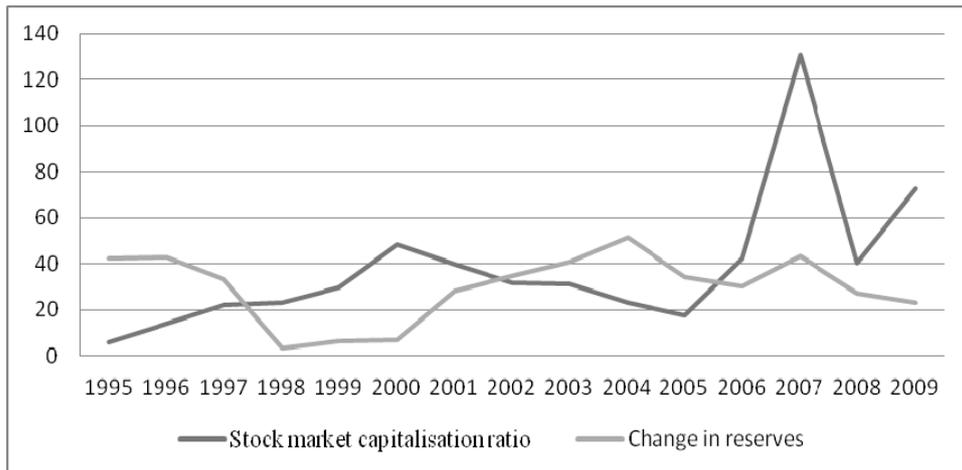
Source: Economic Survey of India, cited in B. Dasgupta, "Subsidies unlikely to be reduced," *Business Economics* (e-journal), March 1-15, 2012.

Chart I
India Subsidy as percent of Government Expenditure



Source: Same as Chart H

Chart J
India: Stock Market Capitalisation and Change in Official Reserves
(in per cent)



Source: Peoples' Bank of China

Table 1
Correlation Results for China: Annual Data from 2006–07 to 2010–11

<i>Variables</i>	<i>Reserves</i>	<i>Exchange Rate</i>
Reserves	1	
Exchange Rate	(-)0.9***	1
Money supply	0.98**	(-)0.8

Note: *, ** and *** indicate statistical significance at 1, 5 and 10 per cent level.

The monthly figures are converted to Annual and money supply is one year lag

Sources: Monthly Figure from Peoples' Bank of China (PBOC).

Table 2
Correlation Results for China: Annual Data from 1998–99 to 2010–11

<i>Variables</i>	<i>Bank rate</i>	<i>lending rate</i>	<i>CPI% Change</i>	<i>M2</i>	<i>Bonds</i>
Bank rate	1				
lending rate	0.55**	1			
CPI% Change	(-)0.16	0.2	1		
M2	(-)0.32	(-)0.06	0.5***	1	
Bonds	(-)0.29	(-)0.06	0.60**	0.98*	1

Note: *, ** and *** indicate statistical significance at 1, 5 and 10 level.

Source: Annual figures from IFS

Table 3
Correlation Results for China:
Monthly Data from January 2006 to December 2010

	<i>Reserves</i>	<i>Exchange Rate</i>	<i>Money supply</i>
Reserves	1		
Exchange Rate	(-)94*	1	
money supply	0.99*	(-)0.89*	1

Note: * indicates statistical significance at 1% level of significance.

The variables are used as monthly figures and money supply is one month lag.

Source: Monthly figures from PBOC.

Table3A
Correlation of Trade with Other Variables in China during 2006–2010

	<i>Money Supply</i>	<i>Reserves</i>	<i>Balance of Trade</i>	<i>Lending Rate</i>
Money Supply	1			
Reserves	0.98*	1		
Balance of Trade	-0.91***	-0.9***	1	
Lending Rate	-0.52	-0.66	0.48	1

Note: * and *** indicates statistical significance at 1 and 10per cent level. The annual figures are used for the calculation of correlation coefficients.

Source: PBOC

Table 4
Correlation Results for India from 1990–91 to 2010–11 at Level Form

<i>Variables</i>	<i>M3</i>	<i>ER</i>	<i>GFD</i>	<i>GPD</i>	<i>MBCS</i>	<i>FDI</i>	<i>Portfolio</i>	<i>Reserves</i>
M3	1							
ER	0.96*	1						
GFD	0.90*	0.76*	1					
GPF	0.57*	0.35	0.84*	1				
MBCS	0.96*	0.85*	0.98*	0.5 *	1			
FDI	0.96*	0.93*	0.85*	0.58*	0.90*	1		
Portfolio	0.52**	0.55**	0.35	0.11	0.50**	0.45**	1	
Reserves	0.96*	1.00*	0.76*	0.35	0.85*	0.93*	0.55**	1

Note: *, ** and *** indicates the statistical significance at 1, 5, 10% respectively.

Broad Money, ER: Exchange Rates, GFD: Gross fiscal deficit, MBCS: Market borrowing of centre and state, FDI: Foreign Direct Investment and portfolio: Portfolio foreign investment.

Source: Annual Data from Budget documents of the Government of India.

Table 5
Correlation Results for India from 1990–91 to 2010–11 at Log Form

<i>Variables</i>	<i>M3</i>	<i>ER</i>	<i>GFD</i>	<i>GPD</i>	<i>MBCS</i>	<i>FDI</i>	<i>Portfolio</i>	<i>Reserves</i>
M3	1							
ER	0.98*	1						
GFD	0.94*	0.89*	1					
GPF	0.70*	0.62*	0.81*	1				
MBCS	0.97*	0.94*	0.96*	0.70*	1			
FDI	0.95*	0.95*	0.90*	0.74*	0.94*	1		
Portfolio	0.75*	0.80*	0.73*	50***	0.83*	0.84*	1	
Reserves	0.98*	1.00*	0.89*	0.62*	0.96*	0.95*	0.8	1

Note: *, ** and *** indicates the statistical significance at 1, 5, 10% respectively.

Broad Money, ER: Exchange Rates, GFD: Gross fiscal deficit, MBCS: Market borrowing of centre and state, FDI: Foreign Direct Investment and portfolio: Portfolio foreign investment.

Source: Annual Data from Budget documents of the Government of India

Table 6
Regression results using quarterly data 2000 Q1–2010 Q4

<i>Explanatory Variables</i>	<i>Interest Rate</i>	<i>Bond sales</i>	<i>Inflation rate</i>
constant	9.4 (9.88)*	32.43 (1.14)	80.42 (3.04)*
GDP growth			9.35 (5.58)*
Growth of M3	0.11 (1.96)**	0.23 (0.16)	2.11 (1.45)
Bond Sales			0.22 (1.75)*
Inflation Rate		-3.86 (-2.88)*	
R ²	0.09	0.14	0.46
F statistics	3.84 **	4.29 **	14.64*

Note. * and ** indicate the level of statistical significance at 1 % and 5 % respectively. The included number of observation is 56. The frequency of data is quarterly.

Table 6A
Regression equation M3 and interest rate

Interest Rate = 15.2 -0.000001 Money(M3)

Predictor Coef SE Coef T P

Constant 15.1921 0.3005 50.55 0.000

Money(M3) -0.00000109 0.00000012 -9.21 0.000

S = 1.787 R-Sq = 52.1% R-Sq(adj) = 51.5%

Table 7
Central and State Governments Deficit (in % of GDP)

	2007–08	2008–09 BE	2009–10 BE
Revenue Deficit	0.2	4.4	5.5
Gross Fiscal Deficit	4.2	8.9	10.2
Gross Primary Deficit	-1.3	3.5	4.6

Source: RBI various issue and <http://www.adbi.org/files/2010.09.17.wp249.fpiiag.tab.4.1.pdf>

Table 8
Major Heads of Expenditure: Central and State Governments (in crore)

<i>Years</i>	<i>Interest payments</i>	<i>Subsidies</i>	<i>Capital expenditure</i>	<i>Capital Defence expenditure</i>
1991-92	26596	12253	29122	4905
1992-93	31075	10824	29916	5473
1993-94	36741	11605	33684	6867
1994-95	44060	11854	38627	6819
1995-96	50045	12666	38414	8015
1996-97	59478	15499	42074	8508
1997-98	65637	18540	51718	9104
1998-99	77882	23593	62878	10036
1999-00	90249	24487	48975	11855
2000-01	99314	26838	47753	12384
2001-02	107460	31210	60842	16207
2002-03	117804	43533	74535	14953
2003-04	124088	44323	109129	16863
2004-05	126934	45957	113923	31994
2005-06	132630	47522	66362	32338
2006-07	150272	57125	68778	33828
2007-08	171030	70926	118238	37462
2008-09	192694	129243	97507	41000
2009-10	225511	111276	123606	54824

Source: Budget documents of the Government of India.

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The pattern tallies with the data released by the PBoC which indicates a drop in CPI between Q1 and Q3 of 2009 by 1.1% (on yoy basis) and a drop in CPI at (-)1.3% during Quarter 3 itself of 2009. Loans offered in domestic currency during the quarter expanded by 34% (yoy) while cuts were announced in reserve ratios and sale of bonds were fewer (or none), all in an effort to revamp the economy from its post-crisis slump. PBoC, China Monetary Policy Report Quarter Three, 2009.

Treasury Direct at <http://www.treasury.gov/resource-center/data-chart-center/tic/Documents/mfh.txt>

Unless otherwise mentioned, data presented in this section are all from IMF, *International Financial Statistics*.

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