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## **FULL Capital Account Convertibility:India's Readiness in the context of Financial Integration**

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**FULL CAPITAL ACCOUNT CONVERTIBILITY:  
INDIA'S READINESS IN THE CONTEXT OF FINANCIAL  
INTEGRATION**

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**WIPRO TECHNOLOGIES LIMITED**

**INDIA**

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## **I. Introduction**

During the recent turmoil in world financial market and its cascading disruptive effects, the role of financial integration assumes importance. A common outshoot of such financial crises generated locally or regionally is that they spread faster to other connected markets and economies to the extent such markets and countries are integrated with the originator country. The emerging/developing/non-developed countries bear their share of the brunt mostly due to their dependence on the advanced economies by way of trade or financial partnerships. There exists the famous adage: “If the US sneezes, rest of the world catches pneumonia.” As of late, the severity of this phenomenon might have been reduced – owing largely to emergence of alternate economic powers that are characterized by high rate of sustained growth – and also to what economists call the “De-Coupling Effect” – that some of these economies have been able to insulate themselves from shockwaves in other countries in such a way that susceptibility to such external disruptions has lessened, the domestic balance remaining largely unaltered.

However, in the age of increasing global integration, growing countries can not afford to stay highly insulated, closed or de-coupled from other economies. To accelerate such integration, countries resort to various approaches, financial integration being a prime one among them. And financial integration presupposes capital account liberalization. At one end of the spectrum is fully restricted capital account; at the other, a fully convertible capital account. Many of the developed countries practice the later. The least developed countries have a too low extent of capital account liberalization. The emerging countries largely fall midway – they have partially open and liberalized capital account.

Among the emerging economies, India occupies a dominant space. According to IMF and other reports, India would come in the top three of the economically most powerful economies by 2050. It has a much higher growth rate (more than 8% per annum) compared to many developed countries.

This paper examines the status of readiness of India in adopting a fully convertible capital account, keeping in mind its present and future financial integration status and objectives. Section I briefly introduces the scope and objective of the paper. Section II explains financial integration in terms of its meaning, forms and preconditions. Section III introduces Capital Account Convertibility (CAC) and its dimensions with a short note on the role of CAC in Asian currency crises in 1997-98. Section IV links CAC with financial integration. Section V describes the present state of financial integration in India. Section VI explores CAC in Indian context in greater detail. Section VII examines to what extent India is ready to adopt full CAC, going by the current state and the issues of concern, and concludes the paper.

## **II: Financial Integration**

### **II.A. Financial Integration: What It Means**

The commonly accepted definition of Financial Integration <sup>[1]</sup> states that all potential participants in a market:

- Are subject to a single set of rules when dealing with financial products and/or services.
- Have equal access to this specific set of financial instruments/services.
- Are treated equally when they operate in the market.

The above definition of financial integration has three important features.

- Financial integration is independent of the financial structures within regions (financial structure encompasses all financial intermediaries (institutions/market) and how they relate to one another with respect to flow of funds to and from households, government and corporations).
- Frictions in the process of intermediation can persist even after financial integration is completed. Even with existing friction, many areas can be financially integrated as long as such friction affects these areas symmetrically.
- This definition of financial integration separates the two constituents of a financial market, i.e. the Supply of, and Demand for, investment opportunities.

## **II.B. Forms of Financial Integration**

Financial integration can assume three primary forms <sup>[2]</sup>.

- **Direct Financial (Capital Market) Integration**

This form is expressed in terms of deviation from LOOP (Law of One Price) for financial securities. Under perfect direct financial integration, an investor can expect the same ROI (Return on Investment) on different markets, and borrowers the same loan costs, after the required adjustment has been made for risk (If the differential in expected risk-adjusted return is greater than zero but less than or equal to one, the markets are efficient but disintegrated).

- **Indirect Financial Integration**

In such form, the ROI for one economy is indirectly linked to the ROI in other economies. Here, influence on one market is exerted indirectly by other markets – the capital market can become (dis)integrated through the (indirect) influences of the goods market and the forex market.

- **Total Financial Integration**

It encompasses both the Direct and Indirect forms. Perfect or total financial integration implies that real exchange rates are the same across all concerned markets. Perfect total financial integration presupposes perfect indirect integration. If perfect total integration is complete at a global level, the world would consist of a single financial market comprising perfectly linked national capital markets under strict Purchasing Power Parity (PPP).

Alternately, we can classify financial integration into two forms (USAID, 1998):

- **Horizontal Integration:**  
This relates to the interlinking among domestic financial market segments.
- **Vertical integration:**  
This refers to integration between domestic market and regional or international financial markets.

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[1] “Measuring Financial Integration in the Euro Area”, Occasional Paper Series (No. 14, April 2004), European Central Bank, by Baele, Ferrando, Hordahl, Krylova and Monnet

[2] “International Financial Integration”, Lars Oxelheim, pp. 4

## **II.C. Drivers of Financial Integration**

Financial integration at a global level is driven by the following key factors:

- Opportunity to diversify risk internationally, since investors can access more than one countries as investment destination. The typical “all-eggs-in-one-basket” justification is advocated.
- Higher Rate of Return

In developed countries the growth rates have slowed down. In contrast the emerging/developing economies show higher growth rates. Average rate of return is higher, too, in these economies. Irrespective of the level of development, rational investors would always choose higher ROI/ROR over lower ones, and hence the more is the number of investment destinations, the better choice they have.

- Improved governance, compliance and regulations

Increased levels of integration would compel the host countries to adopt stricter regulation measures, compliance standards and improved governance at par with the international levels and standards.

## **II.D. Determinants/Characteristics of Effective Financial Market Integration**

An integrated financial market is characterized by following traits:

- Financial markets are efficient (A market is called efficient if the rate prevailing at any point of time reflects all the existing information available in the market).
- Rates are market-determined.
- Rates of Return are related to some benchmark/reference rate (such as LIBOR).
- There is resource flow from one segment of the market to others. Thus arbitrage opportunities are ruled out.
- Rates of various financial market segments tend to move in tandem.

## **III: Capital Account Convertibility (CAC)**

### **III.A. Capital Control and CAC**

Full Capital Account Convertibility (FCAC) implies that residents in a country can freely exchange domestic currency/financial assets against foreign currency/financial assets, without any restrictions. A foreign currency transaction can be of two types: Current Account and Capital Account. While the former denotes transactions for normal trade and some specified non-trade purposes (e.g. medical treatment, education expenses abroad), capital account transactions are only for investment purposes.

Restricted CAC implies existence of capital control. This section discusses a few aspects of capital control per se.

Capital controls can be imposed on:

- Direction of Capital flows (Inflows or Outflows)
- Type of capital Flows (FDI/FPI/Portfolio Debt or Equity)
- Maturity of capital flows (Short-term/Medium-term/Long-term)
- Sectoral destination of capital flows (Financial/Real estate/Infrastructure etc)

In essence, capital controls include restrictions pertaining to:

- Repatriation or surrender of proceeds from exports, invisibles and current transfers.
- Purchase and sale of capital- or money-market instruments.
- Derivatives or other instruments.
- Outward or inward FDI or real estate transactions
- Liquidation of direct investments
- Provision for banks and financial institutions.

Above instances of capital control can be categorized into three broad forms:

- Quantitative

In this form, capital control is imposed in measurable quantitative formats, ranging from complete prohibition (100% control) to some liberalization subject to limits and ceilings. Generally such forms of control require explicit moratorium or stipulated limit on such transactions.

- Price-based

This form of control seeks to introduce disincentives to discourage some categories of capital flows and/or incentives to encourage another category of capital flows. For example, discriminatory taxation and differential interest rates may be used to stimulate or dampen capital flows. Tobin Tax is an example of this form.

A case in point is China. Being faced with huge capital inflows in early '90s, China imposed unremunerated compulsory reserve requirement of 20% on all short-term debt inflows in '91. Later it imposed various Stay Requirements on FDI and FPI. Thus it succeeded in tilting the maturity structure of its debt inflows from short-term to long-term.

In many cases, a mix of Quantitative and Price-Based controls are exercised.

- Regulatory.

In addition to above, various regulatory forms of control could be imposed on the flows. In India most forms of control are quantitative, though in some cases, the second and the third form are exercised.

It may be noted that controls are stricter in case of short-term rather long-term inflows. Also, capital inflows are easier to control than outflows.

Capital controls do not come without costs. First, restrictive capital controls penalize short-term credit. In Chile, the Small and Medium Enterprises (SME) sector was badly hit due to imposition of capital controls, as their cost of capital (COC) increased substantially, adding more burdens towards debt-servicing. In addition, raising new capital was stalled by most firms on account of higher COC. Second, capital control affects total economic (allocative) efficiency by favoring existing and/or potential benefits to politically connected firms. Third, it distorts the investment decisions of multinational companies. Fourth, capital controls, once imposed, can be irreversible over time. Once abolished, re-imposing them can generate causes for tension. Case in point is Malaysia. When the Asian crisis erupted in 1997-98, Malaysia by then had full CAC for almost 20 years, but considering the financial crises and its own coordinates, Malaysia decided to re-impose some forms of capital control. This quickly eroded investor confidence and it took a long time to get that confidence restored.



### **III.B. Pre-conditions for CAC**

Before a country decides to adopt full capital account convertibility, it should ensure a general set of pre-conditions that precedes it.

- Macroeconomic policy concerns

A sound policy framework ideally should promote growth: by keeping inflation low, the budget deficit small, and the Current Account Deficit (CAD) sustainable (CAD sustainability has two aspects: From the debt perspective, it depends on economy's growth rate and real interest rate. Secondly, this sustainability also represents the ability to absorb internal and external shocks – though that is less susceptible to measurement or formal analysis. CAD financed by FDI inflows and long-term borrowings is usually more sustainable, but financing CAD through short-term debt is a cause of concern.

Short-term capital inflows in response to higher domestic interest rates are a cause of unease that many countries are facing of late. As a defense measure, flexibility of interest rate regime is necessary. Another measure could be an increasing flexibility of the exchange rate mechanism as well.

- Sound financial sector

Importance of a strong domestic financial sector can not be over-emphasized, more so after the Asian experience in late nineties. By now it has become an established fact that the financial sector should have strong supervision and prudent standards, safe lending policies, low level of bad loans or Non-Performing Assets (NPA), adequate provision for reserves to ward off sudden and unexpected contingencies, and transparent financial reporting standards.

- Effective supervisory system

There should exist an efficient and effective supervisory and regulatory authority to keep tag on the transparency and critical issues like capital adequacy in banks.

### **III.C. CAC and Exchange Rate Regime: A Note**

This section inspects the role of exchange rate regime with respect to capital market integration and/or CAC. It begins with the well-known Trilemma of Impossible Trinity, which says it is impossible to achieve the following three goals simultaneously: Exchange Rate Stability, Capital Market Integration and Monetary Autonomy. Any pair of goals is achievable by adopting a suitable payments regime abandoning the third. In particular,

- Exchange stability and capital market integration can be covered by adopting a fixed X-rate regime, but by giving up monetary authority. Thus the authorities lose the power of changing the domestic interest rate independently of foreign interest rate.
- Monetary autonomy can be combined with Capital market integration by giving up Exchange stability. Authorities can freely choose the domestic interest rate but must accept the market-dictated (floating) exchange rate.
- Exchange stability can be combined with Monetary Autonomy by giving up Capital Market integration – in presence of capital controls, the interest-rate/exchange-rate link breaks.

Accordingly, CAC – implying the absence of policy barriers to capital flows is consistent with imperfect capital mobility, since there can be natural barriers to mobility that can

make domestic and foreign assets imperfect substitutes. It creates some scope for at least short-term intervention using sterilization and thus, some monetary autonomy may co-exist with a fixed X-rate.

On principle, there can be six alternative combinations of X-Rate regime and Capital Control:

1. Fixed X-rate + CAC
2. Floating X-rate + CAC
3. Intermediate X-rate + CAC
4. Fixed X-rate + Capital control
5. Floating X-rate + Capital control
6. Intermediate X-rate + Capital control.

On inspection it can be realized that option (6) dominates options (4) and (5). However, exploration of these options in details is out of scope of this paper. For India, the applicable options would be (3) and (6).

Choice of appropriate X-Rate is critical in justifying long-run viability and desirability of CAC. Instead of adopting a rigidly fixed X-Rate, many countries have a “Managed Float” system where, even though the domestic currency is de-jure fully flexible and is “determined” by market demand and supply, the central bank intervenes at the right time to lessen any undesirable impacts of an appreciation or depreciation of domestic currency (primarily through Forex buying and selling) so that the deviation doesn’t extend beyond a certain band. This system is opted with the intention of keeping the X-rate within a targeted range.

Another wisely adopted system is the Pegged X-Rate system where the country in question “Pegs” its domestic “Soft Currency” to another “Hard Currency” (such as US Dollar). The value of domestic currency fluctuates according to the direction of change in the value of the Hard Currency. However, a time-tested fallout of a pegged system is that if the domestic currency is kept deliberately overvalued for a prolonged period, the long-run export-competitiveness gets adversely affected whereas imports become cheaper, so current account deficit starts to widen. After a threshold level such an economy becomes unviable.

Since full CAC would result in increased forex flows in and out of the country, choice of X-rate becomes an important factor. Effects on the exchange rate would depend importantly on how well the country manages its intervention in forex market and consequent stabilization of X-Rate. Central Bank’s buying of too much forex using domestic currency would result in inflationary pressure; this can be avoided using Sterilization. But sterilization too doesn’t come without costs, and thus beyond a limit becomes too much of a burden on domestic economy.

### **III.D. Trade Openness and CAC**

Trade openness is indirectly linked to capital account convertibility. The exports/GDP ratio and the Imports/GDP ratio together determine the CAD/GDP ratio. A widening CAD is sustainable if and only if matched by sufficient forex reserves or capital inflows, or both. However, beyond a certain threshold level, it is not desirable to widen the CAD as it would have other economic consequences.

For example, if capital inflows like FPI become an important source of financing CAD, a problem arises – the economy needs a higher rate of interest to attract such inflow, and also, a strong exchange-rate regime is needed to sustain such inflows in terms of

profitability and confidence. Consequently, the REER (Real Effective Exchange Rate) increases, thus eroding competitiveness and increasing trade deficit. Higher level of trade deficit requires higher level of capital flows, and beyond some point a cyclical dependence sets in.

### **III.E. Foreign Exchange Reserves Adequacy: Measurement**

Adequacy of forex reserves is an important consideration for capital account liberalization. With respect to managed-float economies, a passive way in which reserve accumulation occurs is as consequence of the exchange rate policy - when the central bank intervenes in forex market and buys forex. This is done when huge forex surplus is there in the system due to capital inflows. When forex supply exceeds forex demand, domestic currency appreciates. The appreciated domestic currency increases the forex-value of the exportable, thus adversely affecting export-competitiveness. So the central bank buys forex in order to prevent this. However, there are costs associated with holding huge forex reserves. Increasing the forex reserves beyond a point is problematic for the central banks, since it increases liability.

(Primarily, however, reserves are regarded as “insurance” against external shocks, and the cost of holding and accumulating such reserves are considered the “insurance premium” that a country must bear in order to reap the benefits of globalization and integration without suffering from associated shocks)

In functional form,

Net Cost =  $f$  [(Marginal cost at which reserves are built) – (marginal return from deployment of reserves)]. Accumulation of excessive reserves can lead to a negative BOP problem. This can happen in cases where capital inflows are invested abroad at a lower interest rate, whereas investors who bring in capital earn much higher returns payable by central bank in forex (when domestic interest rate is higher than international interest rate).

The adequacy of forex reserves can be measured in four forms:

- Trade-based measure

Traditionally, reserves adequacy has been measured in terms of ability to cover ‘X’ months of imports.

- Debt-based measure

This form considers the ability of a country’s reserves to cover its debt-servicing obligations.

- Liquidity-based measure

This measures the extent to which reserves can fund all capital account liabilities. In April 1999, Pablo Guidotti, the then deputy finance minister of Argentina proposed that emerging economies should maintain such a quantum of usable reserves that covers their debt requirements for at least 1 year, so that the reserves should enable the country to require no new borrowing for one year. This measure is approximated by the ratio of Reserves to (CAD + Short-Term External Debt).

- Money-based

This measure focuses on the extent to which an economy has a domestic currency that is backed by forex. It includes measures such as the ratio of Reserves to Broad Money, Reserves to Base Money etc. These provide a measure of potential for resident-based capital flight from the currency.

### III.F. CAC: Cost – Benefit Analysis

Full CAC has both pros and cons. The beneficial effects include the following:

- It leads to more inflow of capital into domestic financial system. Thus firms have access to more capital, and this reduces their cost of capital. A reduced COC induces firms to invest more, expand more and thus output, employment and income expand in medium- to long-run.
- Full CAC leads to freedom to trade in financial assets. Investors can choose from a wider range of financial products across multiple countries.
- Entry of foreign financial institutions results in eventual efficiency in domestic financial system, since such entry increases the number of players in the market, and fosters competition. In some cases, the market could see a transition from the near-monopoly to near-perfectly competitive market. In order to survive stiffer competition, (domestic) firms are forced to become more efficient. This also ensures compliance with international standards of reporting, disclosure and best practices.
- As a consequence of full CAC, tax levels converge to international levels.
- As more capital flows in, domestic interest rates are reduced, thus cost of government's domestic borrowing is reduced, and so fiscal deficit shrinks.

However, the other side of the coin has the following ill-effects:

- An open capital account causes an export of domestic savings abroad, to more attractive destinations. In capital-starved countries, such outbound savings-flight can be ill afforded.
- Increased capital inflows also lead to appreciation of real exchange rate. It shifts resources from tradable to non-tradable sectors.
- Premature liberalization and CAC lead to an initial stimulation of capital outflows, which by appreciating the real exchange rate, destabilizes the economy.
- Another possible side-effect is generation of financial bubbles. A sudden burst could replicate the Asian crisis once again.
- But the oft-cited argument against CAC is concerning movements of short-term capital. It is considered to be extremely volatile, highly sensitive to domestic and/or international economic, political and financial events, and once such an event starts, the extent increases as in a chain-reaction – such investors invest their capital only lured by the prospect of short-term 'windfall gains' precipitated by interest-rate differentials (in most cases). And once some investors withdraw their capital, the herd mentality is displayed – other 'arms-length' investors also follow suit and withdraw their money. This is known as 'capital flight'. Once capital flight takes place, international investors lose confidence on the host country's economy. Creditworthiness diminishes, too. And the most dangerous consequence of capital flight is that the government has to deploy its Forex Reserves to the investors who withdraw the capital, and this brings the domestic economy to a highly vulnerable state. This may well start a financial disruption and/or currency crisis.

It may be noted that full capital account convertibility doesn't necessarily lead to a financial crisis, but it makes the country in question more susceptible to such crises. The symptoms of such financial vulnerability are: Inadequate capital base, large bad loans (NPA), inappropriate risk management techniques and (politically) connected lending. Countries where such symptoms exist should exercise utmost caution while deciding

whether or not to adopt Full CAC, since these are most vulnerable to any shock, and take more time to recover from any external threat.

### **III.G. CAC and South-East Asian Crisis: A Note**

The Asian Crisis of 1997-98 originated from Thailand. The Baht was at that time pegged with US Dollar. As dollar appreciated, so did Baht, and exports decreased, export competitiveness also reduced, leading to increased current account deficit and trade deficit. Thailand was heavily reliant on foreign debt – with its huge CAD being dependent on foreign investment to stay afloat. Thus there was an increased forex risk. As US increased its domestic interest rate, the investors started investing more in the US. It led to capital flight. Forex reserves rapidly depleted, and the Thai economy tumbled down. At this juncture, Thai government decided to dissociate Baht from the US currency and floated Baht. Concurrently, the export growth in Thailand slowed down visibly. Combination of these factors led to heavy demand for the foreign currency, causing a downward pressure on Baht. Asset prices also decreased. But, that time Thailand was dominated by “crony capitalism”, so credit was widely available. This resulted in hike of asset prices to an unsustainable level – and as asset prices fell, there was heavy default on debt obligations. Credit withdrawal started.

This crisis spread to other countries as a contagion effect. The exchange markets were flooded with the crisis currencies as there were few takers. It created a depreciative pressure on the exchange rate. To prevent currency depreciation, the governments were forced to hike interest rates and intervene in forex markets, buying the domestic currencies with their forex reserves. However, an artificially high interest rate adversely affected domestic investment, which spread to GDP, which declined, and eventually economies crashed.

In this backdrop, the most vicious argument offered by the opponents of full CAC had been the role of free currency convertibility. In the absence of any capital control, no restrictions were kept on capital outflow, and thus the herd behavior of investor led to economic cash of the entire region.

Thus the Asian currency has taught the following observations and lessons:

- Most currency crises arise out of prolonged overvalued X-rate regime. As the pressure on the X-Rate increases, there is an increased volatility of the capital flows as well as of the X-Rate itself. If the X-rate appreciates too high, the economy’s export sector becomes unviable by losing export-competitiveness at a global level. Simultaneously, imports become more competitive, thus CAD increases and becomes unsustainable after a certain limit.
- Large and unsustainable levels of external and domestic debt had added to the crises, too. Thus, the fiscal policies need to be more transparent and forward-looking.
- During the crises, short term flows reacted quickly and negatively. Either receivables were postponed by debtors and/or payables were accelerated by creditors. Thus BOP situation worsened.
- Domestic financial institutions need to be strong and resilient to absorb and minimize the shocks so that the internal ripple effect is least.
- Gradual CAC is the safest way to adopt. However, even a gradual CAC can not fully eliminate the risk of crisis or pressure on forex market.

## **IV: Financial Integration and Capital Account Convertibility: Linkage**

Conditions (2) and (3) in the definition of financial integration state that all participants in a market have to be given equal access to the specific instrument/product and that they all be treated equally while operating in that market. Now, the more open is the host country's capital account, the easier it is for international players to enter the market and operate domestically. From this perspective, a country is ready to be financially integrated de-jure to the extent that it opens up its capital account. This doesn't ensure de-facto integration. The actual extent of integration depends on the country's financial markets' interaction, their interlinking and dependence, and also on the existing regulations and restrictions in both the host and the destination countries.

When a country has a fully convertible currency, residents can freely exchange their domestic currency and assets with foreign currency and assets. It ensures unrestricted flow of capital from either direction, since no capital control exists. So residents enjoy a freedom of choice as regards their investment decisions and destination. This creates a multi-fold effect:

- If domestic interest rate is higher compared to other countries, global investors seeking short term capital gains would invest more there. There would be a surge in forex inflows, and if the host country doesn't have a freely floating X-rate, its central bank would resort to sterilization operation to neutralize the pressure on X-Rate. Too much of inflow would raise the cost of sterilization. But since the cost of non-sterilization can not be quantified, the host can not afford not to sterilize. Thus a trade-off between optimal inflows and sterilization cost is generated.
- The destination of such capital flows also assumes importance in a fully liberalized economy. Too much investment in a particular segment of the financial market can be detrimental to the other segments. Unless the domestic financial market is horizontally integrated, such a 'selective investment' scenario would cause a distortion, and the segment receiving more capital wouldn't be able to circulate the positive effects of it across other segments. Thus, CAC without strong (horizontal) financial integration is disruptive.
- If domestic interest rate is lower than the global level, in presence of FCAC the residents would convert the currency and invest in assets or currencies abroad. This would not only cause a "domestic capital flight", but also would deplete domestic saving. The Savings-Investment gap would widen. Also, as the demand for currency conversion rises, the domestic currency loses its value and depreciates. In a strongly import-sensitive country (particularly an oil-importer), depreciation of its domestic currency would widen the trade deficit, since cost of imports increases. Simultaneously, inflationary pressure increases, and the government has to resort to contractionary monetary policy instruments like open-market operations, increasing the reserve requirements of banks etc which impede long-term growth prospects.

If the country is financially well integrated, such shocks would ripple evenly across all segments and the overall damage would be less, since various segments would capture their "share" of the shock. Otherwise, domestic economy would be badly damaged. Hence, Full CAC should be ideally preceded by horizontal financial integration.

- Financial integration is characterized by market-determined rates. In the absence of CAC, the relevant markets are essentially domestic. But once the currency is fully convertible, sooner or later the domestic segments have to play with the international counterparts, and the rates would be determined by the interaction of demand and supply within all these markets. To ensure smooth adoption of a globally-determined rate, the domestic financial sector has to be sophisticated and equipped enough to handle any emergent exigencies. Particularly the banking sector has to be resilient and efficient enough.
- A fully convertible capital account may aggravate the Lucas Paradox. Even though the capital/labor ratio is lower in developing/emerging countries, and thus return to capital is higher, Lucas observed through empirical evidence that capital is not really flowing from developed countries to emerging economies, instead it is the other way round: emerging economies are acting as net exporters of capital to the developed countries. This paradox can be explained by the fact that emerging economies have huge forex reserves which they deploy in foreign country bonds or financial institutions. If the country with CAC is financially integrated as well, the effect would be more severe.

## V: Financial Integration in India

This section examines the characteristics, progress and status of financial integration in India.

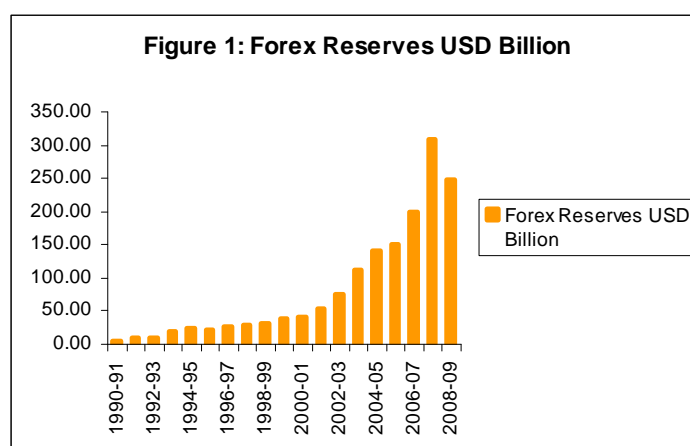
### V.A. Characteristics of Indian Financial Integration

Indian financial integration is characterized by three aspects:

- Unusually high Forex reserves

Compared to US\$ 5.8-billion in financial year 1990-91, India now holds a forex reserve base of US\$ 249-billion as on end of current financial year. <sup>[3]</sup>

(Note: Reserve base has shrunk in 2008-09 owing to sharp appreciation of rupee vis-à-vis USD – according to an ASSOCHAM study, as on 18<sup>th</sup> February 2009, India had lost forex reserves equal to 3.5% of GDP due to currency imbalances in previous 5 months)



Source: Reserve bank on India, Handbook of Statistics

- Highly asymmetric composition of international balance sheet. The asset side mostly contains low-yield forex reserves whereas the liability side contains higher-return equity instruments. This is a classic position of “long in Debt”, “Short in Equity”.
- The neoclassical development models predict India to be a net borrower in the international financial system, given her level of development. But India has reversed her large net liability position.

## **V.B. Segments of Indian Financial Market**

This sub-section examines the following four segments of Indian financial market:

- Equity Market
- Debt Market
- Money Market and
- Forex Market

### ***Equity Market***

The equity market is further segmented into Primary Market and Secondary Market. Participation in the equity market is from both retail as well as institutional players.

### ***Debt Market***

Debt market is further segmented into Government Securities (G-Sec) Market and Corporate Debt Market.

#### ***(a) G-Sec Market***

Even though this segment shows high volume of transactions, it is yet to emerge as a deep and liquid market across different maturities, so that the market is able to generate a meaningful yield curve.

#### ***(b) Corporate Debt Market***

This segment is not as mature as the G-Sec market. Even now, corporate funding or internal resources remain the principal means of corporate funding. However, concurrent with the growth of corporate sector, emphasis should be put on development of this sector, too. Also, this is a virtually illiquid market with least transparency, as it doesn't follow any well established policies. As of now, participants are essentially institutional.

### ***Money Market***

Money market segments are:

#### ***(a) Overnight Market***

#### ***(b) Term Money Market***

This segment is conspicuously absent in India; however, without existence of this segment, it is difficult to develop a meaningful linkage between forex market and domestic currency market.

#### ***(c) Certificate of Deposit (CD)/ Commercial Paper (CP) Market***

#### ***(d) Interest Rate Derivatives Market.***

### ***Forex Market***

This comprises Inter-Bank Market and Retail Market. A liberalized capital account would result in increased volume and liquidity in spot and derivatives segment of the forex market.

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<sup>[3]</sup> Forex reserves for 2008-09 have been considered as per the latest available information.

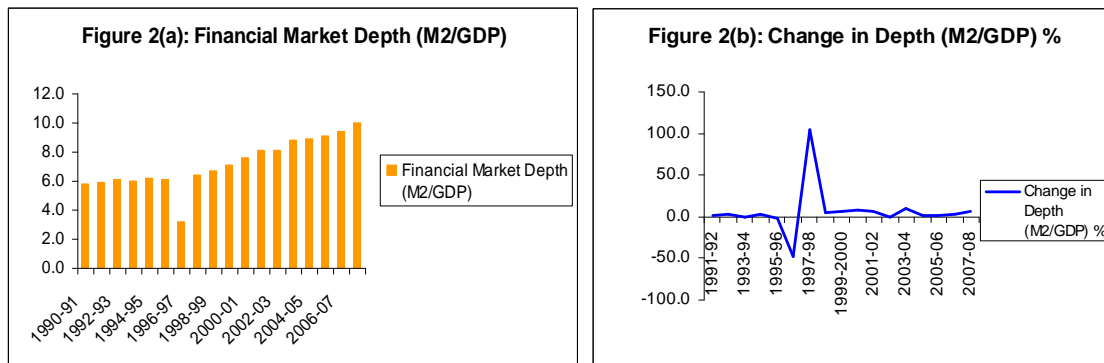


Volatility in one segment leads to the same in other markets depending on the extent of integration. The rate of interest prevailing in different market segments would ideally reflect their risk-reward relationship. Interest rate and exchange rate are interlinked. In an efficient market, the forward margin on exchange rate should equal the interest rate differential between two currencies.

Full CAC requires well developed and tightly integrated markets. Otherwise, shocks generated in one market wouldn't be transmitted to others. Such a financial system can not absorb shocks with minimal damage.

### V.C. Extent of Financial Integration in India

As observed by Tarapore Committee-II in July 2006, Indian financial market segments are not yet well-integrated, and some segments are either in the nascent stage or non-existent. Also, the Financial Market Depth, approximated by the ratio of M2 to GDP, is growing too slowly as following figures indicate: <sup>[4]</sup>



(a) Financial Depth (M2/GDP)

(b) Change in Financial Depth (%)

Source: RBI and Author's calculations

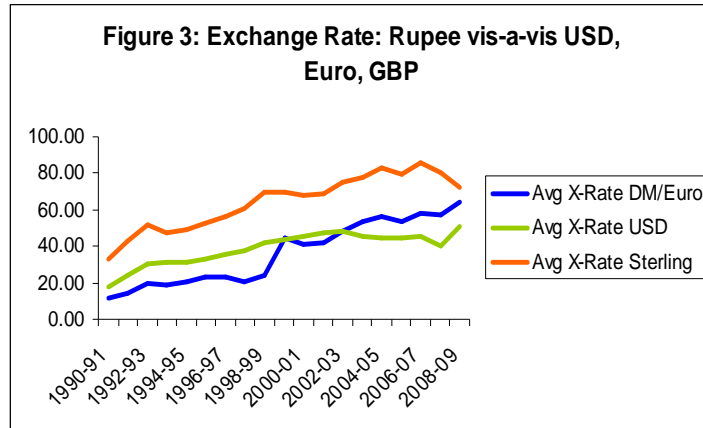
The horizontal integration itself is in its formative stage. But India is gradually opening up her doors to vertical integration forms. Still the country is far away from a well-developed integrated state with such shallow market.

## VI. Capital Account Convertibility in India

### VI.A. Exchange Rate Regime in India

This section makes a note of the X-rate regime followed by India post-BOP crisis. Till 1991, India followed an X-rate regime of a Crawling Peg to USD. After the acute BOP crisis and the subsequent intervention by IMF, India was forced to accept the Structural Adjustment Package of IMF and in 1993, adopted a "market-determined" X-rate regime de jure. However, owing to heavy intervention by Reserve Bank of India (RBI), this X-rate regime has become a Managed Float de facto. RBI has adopted a policy of keeping the X-rate within a sustainable level and thus often buys and sells forex in order to keep the rupee within a pre-targeted band.

[4] In 1996-97 there is a sudden dip in M2/GDP ratio due to a sudden sharp fall in M2.

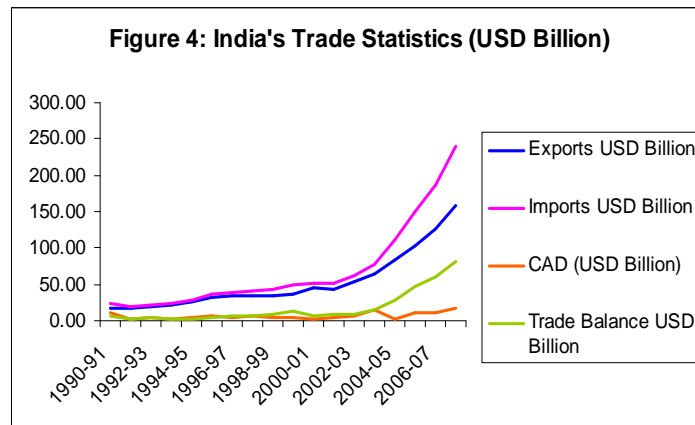


Source: Bloomberg

Against all USD, GBP and Euro, the Rupee has been showing a long-run appreciating trend. However, there is a sharp appreciation of rupee against USD and Euro in 2008-09.<sup>[5]</sup>

### VI.B. Trade Openness in India

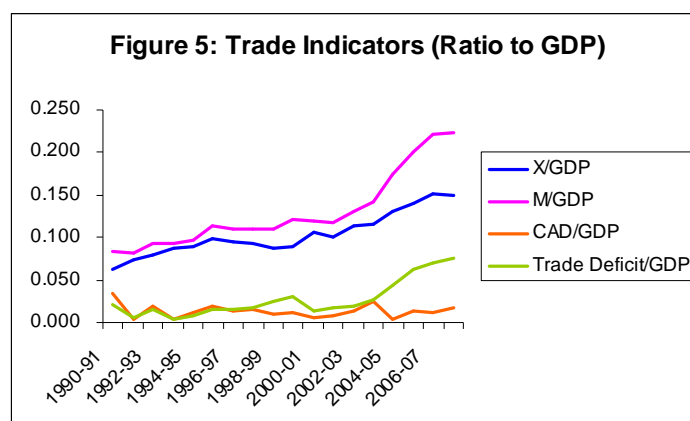
During 1990-91 before opening up, India had total exports, imports, trade deficit and current account deficit to the extent of USD Billion 18.15 , 24.07 , 5.93 and 9.68 respectively. As on 2007-08, the values in terms of USD Billion were 159.01, 239.65, 80.64 and 17.4 respectively:



Source: RBI Trade Statistics

However, in terms of GDP, the Exports/GDP, Imports/GDP, Trade deficit/GDP and CAD/GDP ratios in 1990-91 were 0.063, 0.084, 0.021 and 0.034. In 2007-08, these ratios shot up to 0.149, 0.224, 0.075 and 0.016.

<sup>[5]</sup> The latest X-rates have been considered from RBI website for the year 2008-09.



*Source: Author's calculations*

Above charts reveal a continuously rising trend in both exports and imports, though imports have been rising faster than exports (mostly on account on sharp hike in oil prices), thus generating an increase in trade deficit.

#### **V.C. Pre-Conditions of CAC in India: Tarapore Committee Recommendations (I)**

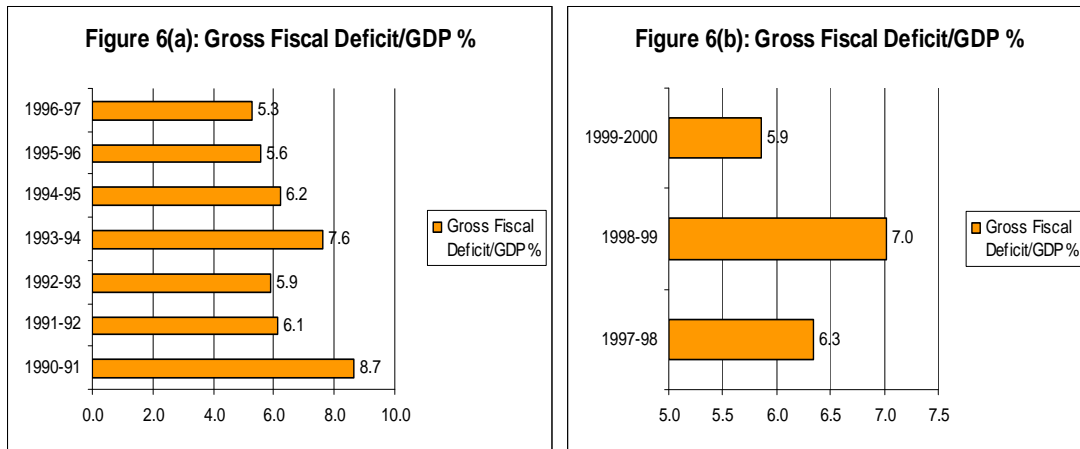
After liberating the current account in 1995, Government of India decided to examine its readiness to adopt capital account convertibility. Accordingly, Tarapore Committee was set up in 1997 by Reserve Bank of India to develop a roadmap to full CAC. This committee laid down following pre-conditions to be satisfied before India adopts CAC gradually over a period of 3 years (1997-2000).

1. Gross Fiscal Deficit/GDP ratio should come down to 3.5% by 1999-2000 from 4.5% as in 1997-98.
2. Previous 3-years annual average rate of inflation should lie between 3-5% for the period 1997-2000.
3. Gross NPA (Non-Performing Asset) of public sector banks should come down to 5% by 2000 from 13.7% as in 1997.
4. Average effective Cash Reserve Ratio (CRR) should come down to 3% from 9.3% as in 1997-98.
5. There should be a rising trend in Current Receipts/GDP ratio.
6. The Debt-Servicing Ratio should come down to 20% from 25% as in 1997.
7. Forex Reserve Adequacy has to be measured using four indicators.
8. Minimum NFA/Currency ratio of 40% has to be prescribed by law in the RBI Act.
9. Government of India should set up a Consolidated Sinking Fund.
10. Current Account Deficit (CAD)/GDP Ratio to come down to the level of 2-3%.

#### **V.D. India's Performance on above Criteria**

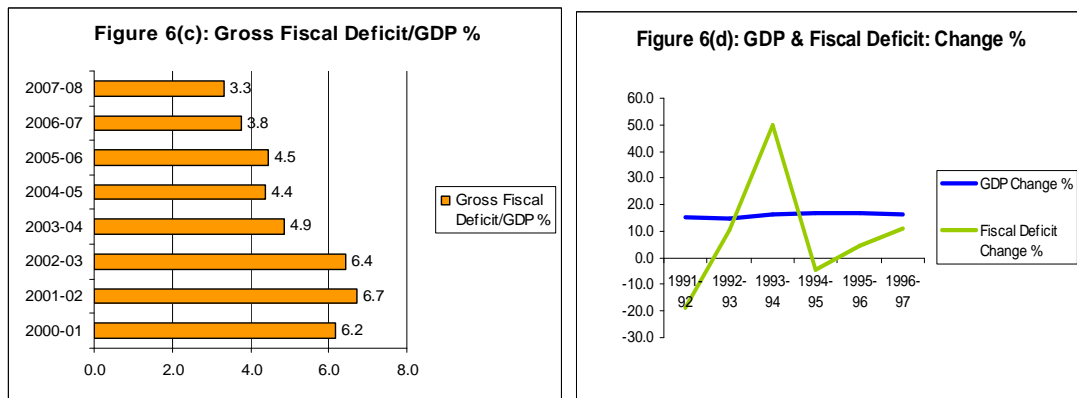
The graphical representation of the status as regards above pre-conditions can be divided into three parts: Pre-Tarapore committee position (1991-1997), the period for which these criteria were put in place (1997-2000), and the period post-2000 till date.

(i) *Gross Fiscal Deficit/GDP*



(a) *Period: 1990-91 to 1996-97*

(b) *Period: 1996-97 to 1999-2000*



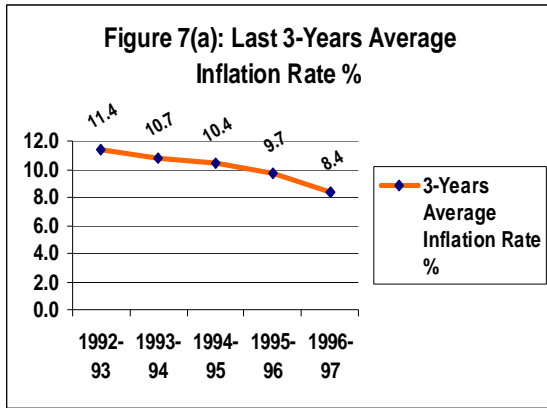
(c) *Period: 2000-01 to 2007-08*

(d) *GDP & Fiscal Deficit: Change (1991-97)*

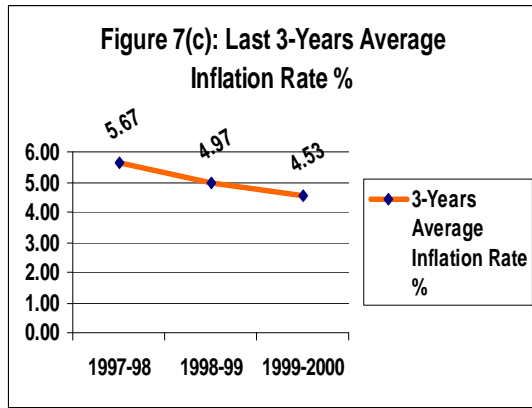
Source: RBI Fiscal Statistics and author's calculations

Above figures reveal the following points. First, Panel (d) clearly indicates that in the pre-Tarapore period (1991-97), GDP had been growing at an almost constant rate, whereas fiscal deficits had been sharply increasing since 1994-95. Considering this, the prescription (reducing Fiscal Deficit/GDP ratio to 3.5% in three years) itself looks premature. The time period recommended (3 years) for achieving this result certainly doesn't represent "gradualism". Panel (a) shows that Gross Fiscal deficit/GDP ratio has come down to the level of less than 6% after five years. Panel (b) depicts utter failure of the fiscal criterion set by Tarapore committee: during the 3 years, the ratio has indeed gone up than come down. It is only in 2006-07 that the ratio is less than 4% (Panel (c)). Thus, this criterion would prove an unstable one for judging India's readiness to adopt FCAC: 3.3% in a single year (2007-08) is not safe enough to go for it.

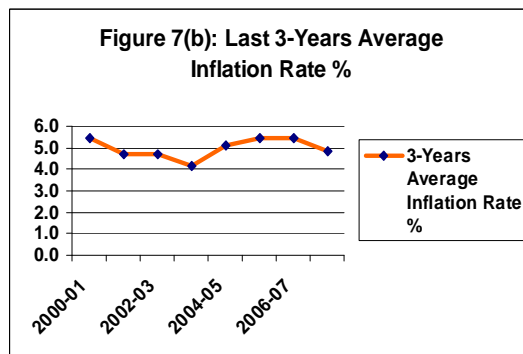
(ii) *Three-Years' Average Inflation Rate*



(a) Period: 1992-93 to 1996-97

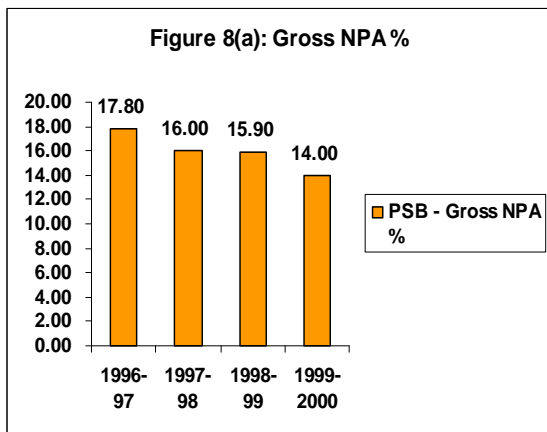


(b) Period: 1997-98 to 1999-2000

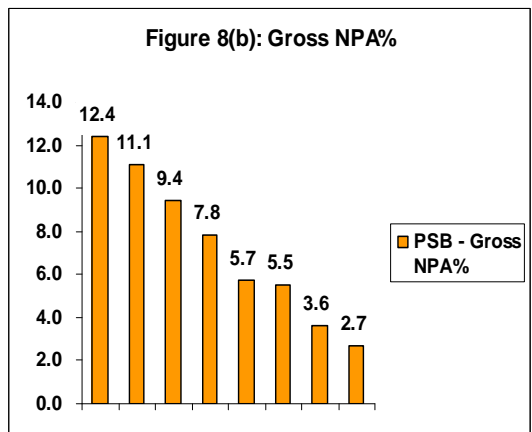


(c) Period: 2000-01 to 2007-08

Panel (a) makes the criterion of a 3-years average inflation rate hovering between 3-5% questionable, as for 5 years preceding the Tarapore Committee, the same has never been less than 8%. During the stipulated period (1997-2000), it has decreased continuously from 5.67% to 4.53% (Panel (b)). But in the following period, the average rate has mostly been above the 5% limit (Panel (c)). Thus, Indian performance has been non-satisfactory on this criterion as well. <sup>[6]</sup>



(a) Period: 1996-97 to 1999-2000



(b) Period: 2000-01 to 2007-08

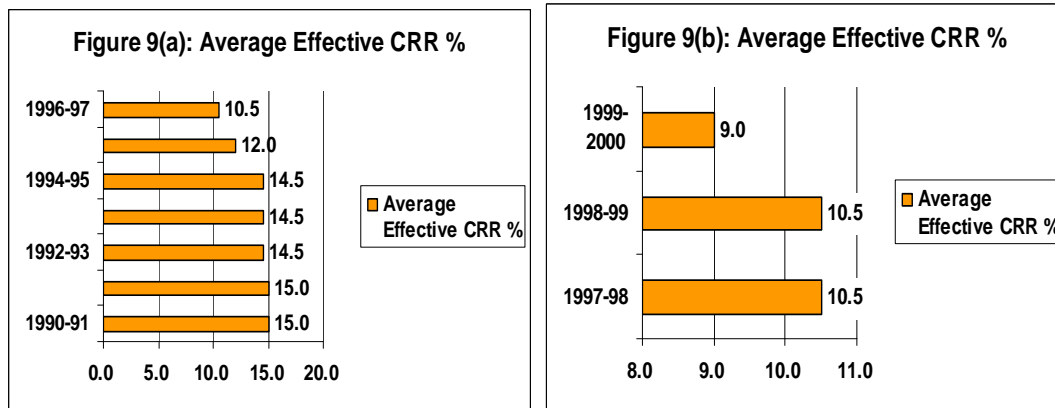
Source: RBI and author's calculations

<sup>[6]</sup> During 2008-09 inflation rate has shown sharp increase followed by a decrease in subsequent months, and the average value for the year has not thus been approximated.

(iii) *Gross NPA of Public Sector Banks (PSB)*

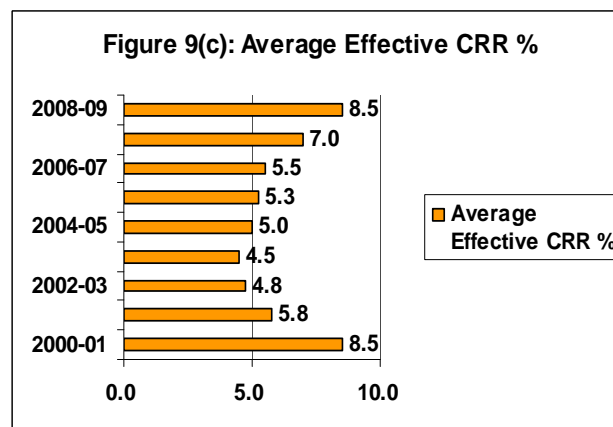
The committee's recommendation on the Gross NPA % has not been possible in India. As panel (a) shows, during the prescribed period, the Gross NPA assumed a minimum value of 14% as against the 5% prescribed. It came down below 6% only in 2004-05.

(iv) *Average effective CRR*



(a) *Period: 1990-91 to 1996-97*

(b) *Period: 1997-98 to 1999-2000*

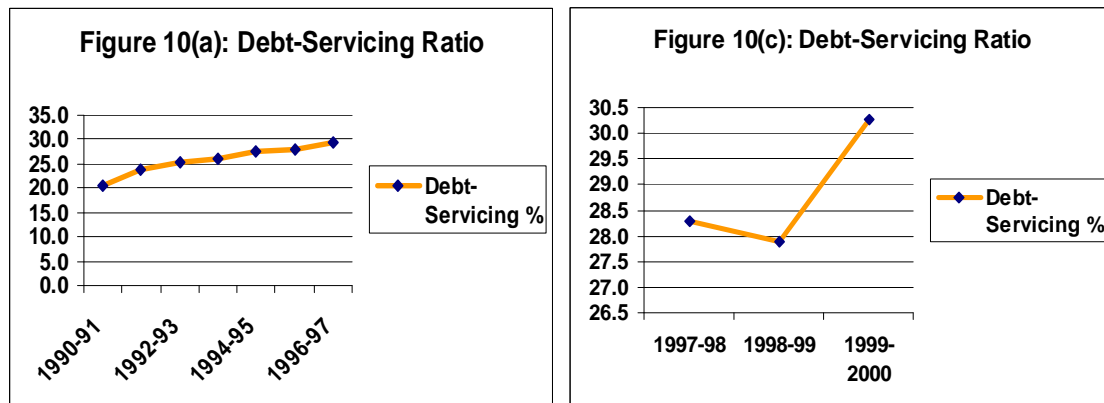


(c) *Period: 2000-01 to 2008-09*

Source: RBI

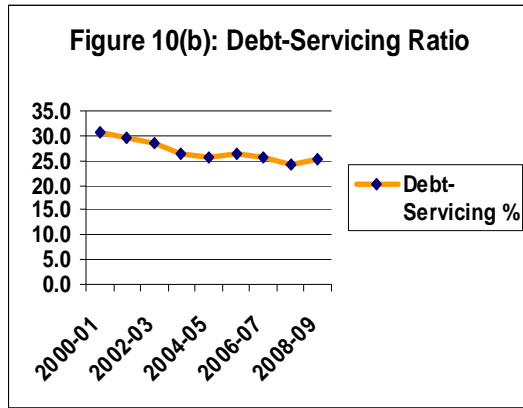
All the above panels show failure on CRR count as well: The lowest level of CRR during the entire period from 1990-91 to 2008-09 has been 4.5 %.

(v) *Debt-Servicing Ratio*



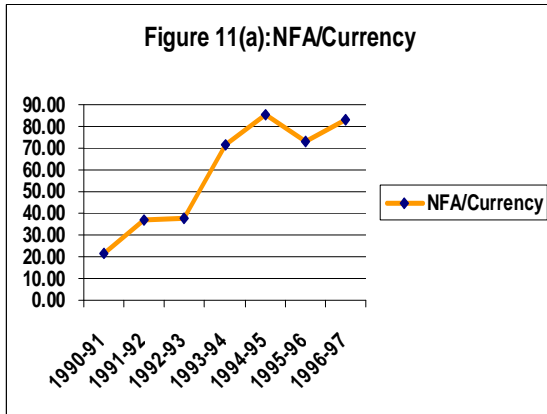
(a) *Period: 1990-91 to 1996-97*

(c) *Period: 1997-98 to 1999-2000*

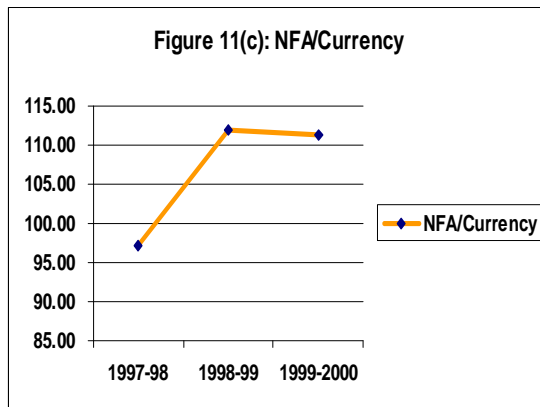


(b) Period: 2000-01 to 2008-09  
Source: RBI

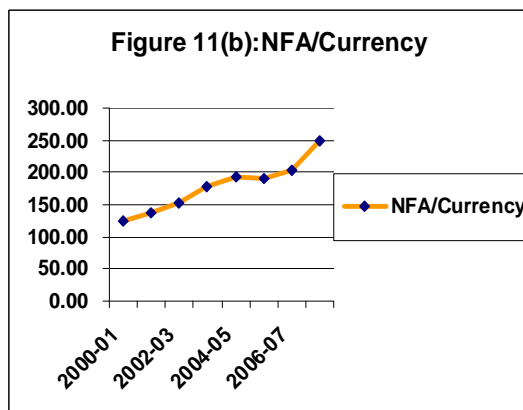
Above panels show that debt-servicing ratio has never touched the prescribed 20% level.  
(vi) Net Foreign Assets (NFA)/ Currency Ratio



(a) Period: 1990-91 to 1996-97

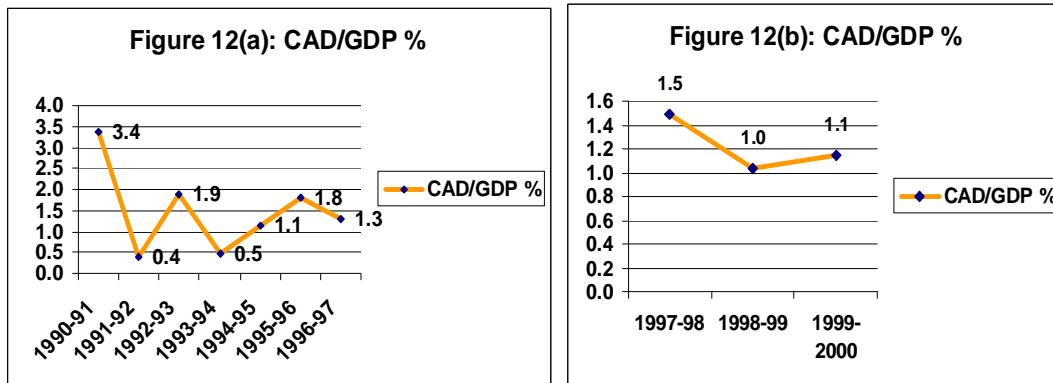


(b) Period: 1997-98 to 1999-2000



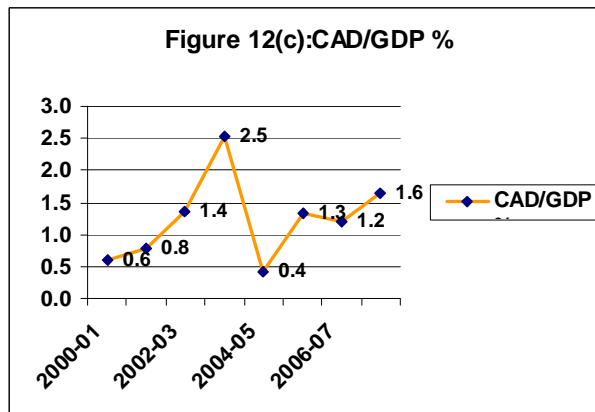
(c) Period: 2000-01 to 2007-08

(vii) Current Account Deficit (CAD)/GDP Ratio



(a) Period: 1990-91 to 1996-97

(b) Period: 1997-98 to 1999-2000

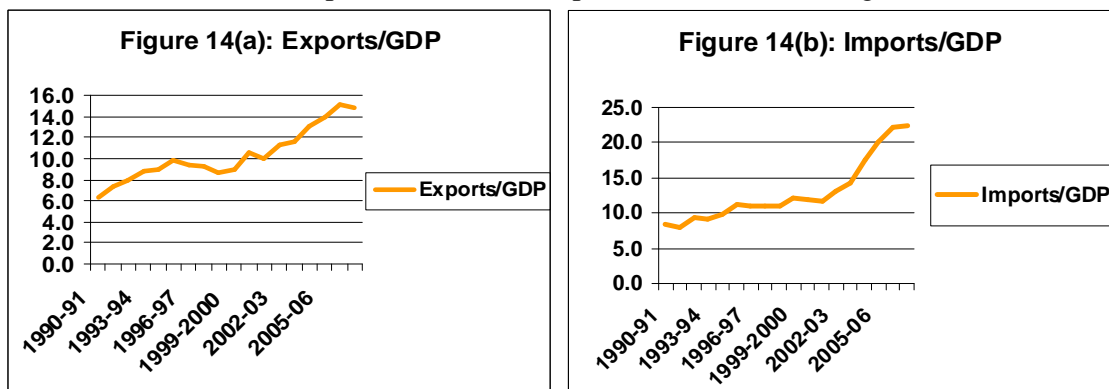


(c) Period: 2000-01 to 2007-08

Source: RBI and author's calculations

Panel (a) shows that pre-Tarapore period registered CAD/GDP ratios between 1-2%. Based on that, the prescription of containing the ratio within 2% has not only been achieved in the recommended period (Panel (b)), but also during the period following it (except the year 2003-04) (Panel (c)).

In external sector, India's performance has improved as seen in the figures below:



(a) Exports/GDP %: 1990-2008

(b) Imports/GDP %: 1990-2008

However, the following point needs a mention. Viability of CAD is a function of availability of normal capital flows as opposed to any form of exceptional financing. If



Net Capital (In)Flows regularly exceed the CAD requirements, viability also increases, by way of increasing forex reserves to the extent of the excess NCF.

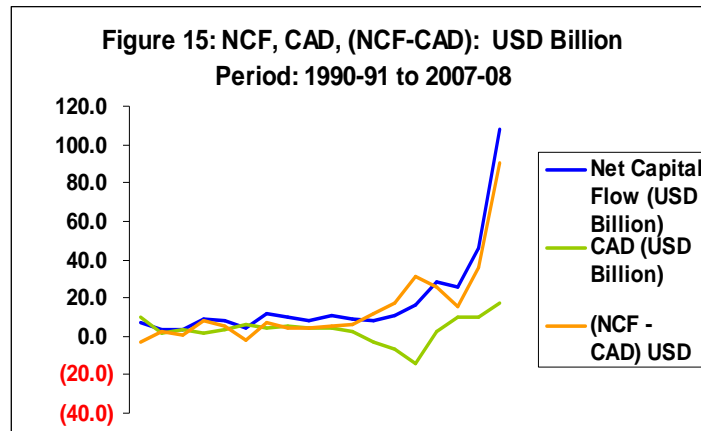


Figure 15 captures the movement of CAD, NCF and the excess of NCF over CAD for the period 1990-91 to 2007-08. Except the years 1990-91 and 1995-96, the NCF has always well-exceeded the CAD requirements (In 2007-08, the NCF has jumped from USD 46 Billion to USD 108 Billion owing to sharp rise in Foreign Investment, Loans, Banking Capital and Other Capital).<sup>[7]</sup>

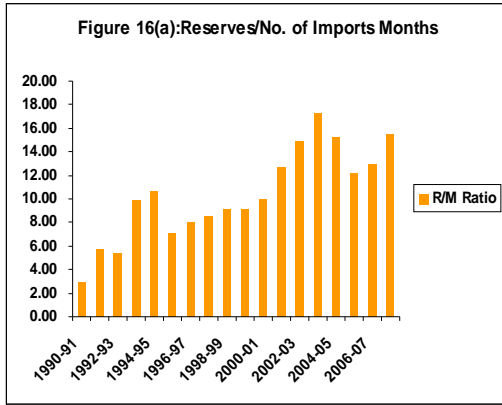
*(ix) Reserve Adequacy Measures*

Following are the charts showing the various Reserves Adequacy Measures for India. They are computed as:

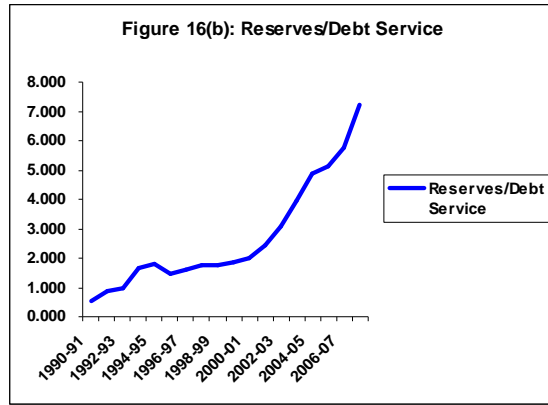
1. Trade-Based: Number of months of imports to be covered by the existing reserves (i.e. the Reserves/No. of Import-Months).
2. Debt-based: Extent of Debt-service covered by existing reserves (i.e. Reserves/Interest Expense). Another metric used is: Reserves to (Cumulative FPI+STED). This metric recognizes FPI as a debt liability of Indian government, and it fully captures the adequacy of reserves against the possibility of an acute capital flight scenario.
3. Liquidity-Based: Reserves to (CAD+STED) ratio.
4. Money-based: The metrics used are: (Reserves/Broad money), (Reserves/Base Money) and (Reserves/ (Broad money + Base money)).

<sup>[7]</sup> The sharp hike in NCF is attributable to the following components:

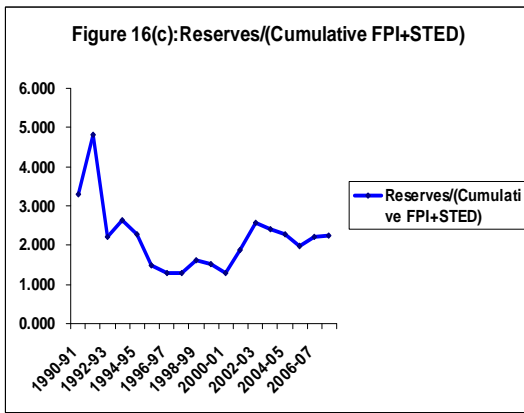
- Foreign Investment: From USD 15.5 Billion to 44.8 Billion, out of which
  - FDI: From USD 8.5 Billion to 15.5 Billion
  - FPI: From USD 7.1 Billion to 29.3 Billion
- Loans: From USD 24.5 Billion to 42 Billion
- Banking Capital: From USD 1.9 Billion to 11.8 Billion
- Other Capital: From USD 3.9 Billion to 9.6 Billion)



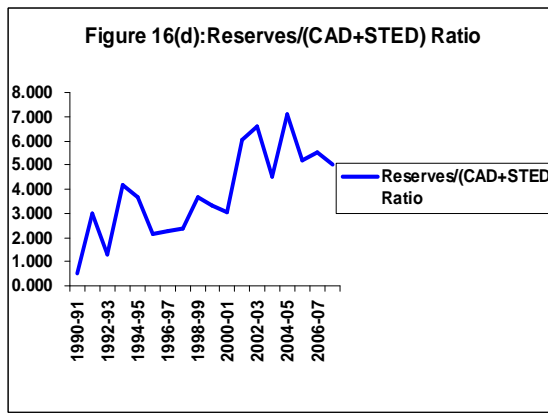
(a) Reserves/ No. of Imports Months



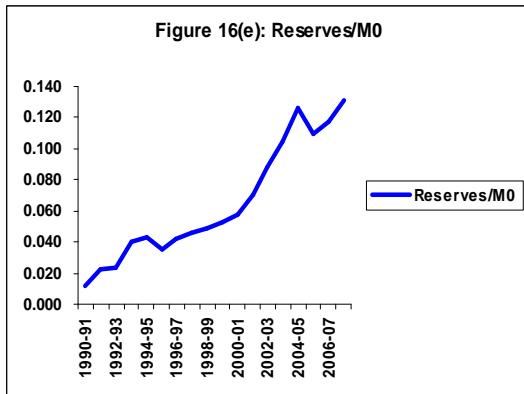
(b) Reserves/ Debt Service



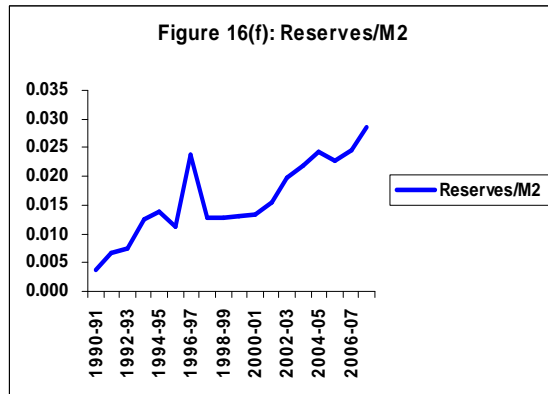
(c) Reserves/ (Cumulative FPI + STED)



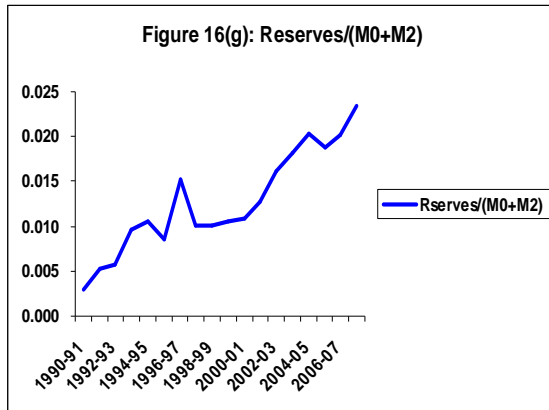
(d) Reserves/ (CAD + STED)



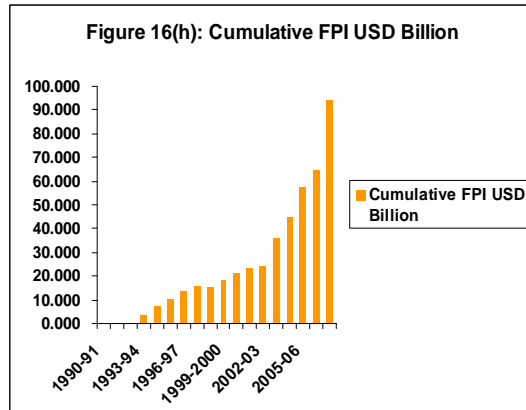
(e) Reserves/ Base Money(M0)



(f) Reserves/ Broad Money(M2)



(g) Reserves/ (M0+M2)



(h) Cumulative FPI, USD Billion

Source: Author's calculations

First, the trade-based indicator shows that from just over 2 months of import cover in 1990-91, India now has an import cover of more than 15 months, which is way above the generally accepted 'safe' level of 3 or 6 months. Next, the Reserves/Debt-Service ratio has shot up from 0.5 to 7.2 over the period. This indicates a comfortable level of debt-servicing using the reserves during exigency. Third, if we consider the sum of cumulative FPI and short-term external debt (STED), it has increased from USD 1.76 billion to 138.15 billion during the period (Data Appendix: 1), and the Reserves/ (Cumulative FPI+STED) ratio has come down from 3.3 to 2.2. However, this can be credited to the sharp increase in the denominator. By this count, the reserves are adequate to cover the external debt. Fourth, sum of current account deficit and STED has risen from USD 11.4 billion to 61.7 billion during the period, and Reserves/ (CAD+STED) ratio has increased from 0.51 to 5.02, indicating more than adequate liquidity position to repay external sector payments in foreign currency. Finally, all the money-based measures have shown an almost continually rising trend, excepting the year 1995-96 when all the measures showed a moderate/sharp decline, owing to the fact that reserves showed a negative change of 14% in that year.

## V.E. Tarapore Committee-II: Recommendations

In July 2006, the Prime Minister of India declared the government's intention to adopt full CAC and hence the second round of Tarapore Committee was set up. The committee, in its report, suggested following observations and recommendations.

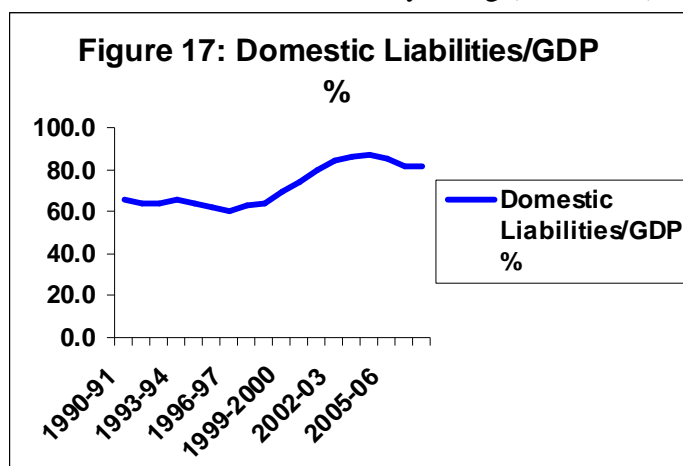
- The sequential FCAC would be adopted in three phases: 2006-07 (Phase-I), 2007-08 and 2008-09 (Phase-II) and 2009-10 and 2010-11 (Phase-III).
- FIIs should be banned from investing fresh capital thru issue of fresh Participatory Notes. PNs should be gradually phased out.
- Industrial houses should be allowed and encouraged to set up banks.
- Discriminatory tax treaties (like Double Tax Avoidance Treaties or DTAA) should be abolished, since they are incompatible with the concept of FCAC.
- For resident corporate, the ceiling for financial capital transfer abroad should be relaxed from 25% of their net worth.

- Overseas investment ceiling for resident corporate should be relaxed from 200% of their net worth.
- ECB (External Commercial Borrowing) limit per annum should be increased.
- Ceiling for loans and borrowings by resident banks from overseas banks should be relaxed from 25% of their unimpaired tier-I capital.
- Ceiling for remittance abroad by resident individuals should be enhanced beyond USD25 Million.

#### V.F. India's Performance against the Pre-Conditions

The previous discussion clearly indicates the following:

- On the fiscal front, India has performed poorly. The fiscal deficit/GDP ratio has not been contained within the prescribed limit. Concurrently, domestic liabilities/GDP ratio has been continuously rising (See below).



Source: RBI and author's calculations

- Average inflation rate has stayed higher than the recommended band.
- Debt-servicing ratio has not at all responded to the recommendation.
- Average effective CRR has remained much higher than the floor.
- However, the gross NPA ratio of public sector banks has come down remarkably.
- India's external sector has registered positive performance. The exports/GDP ratio and import/GDP ratio have gone up. CAD/GDP ratio has been contained within the 2-3% band on a continuous basis.

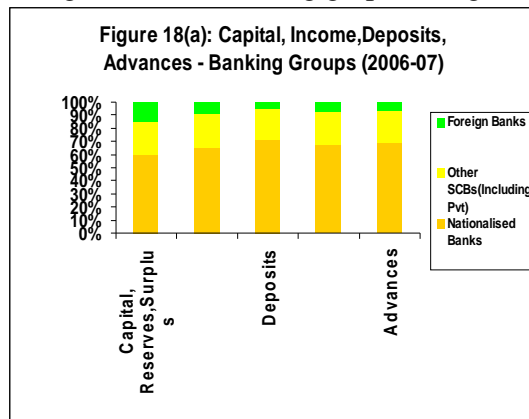
Thus Tarapore Committee's recommendations have mostly not been implemented, since the prescribed conditions were not met. Time-frame wise, it is clear that the committee's suggestions and recommendations were premature by at least 10 years, if not more.

#### VII: Is India Ready for Full CAC Considering the State of Financial Integration?

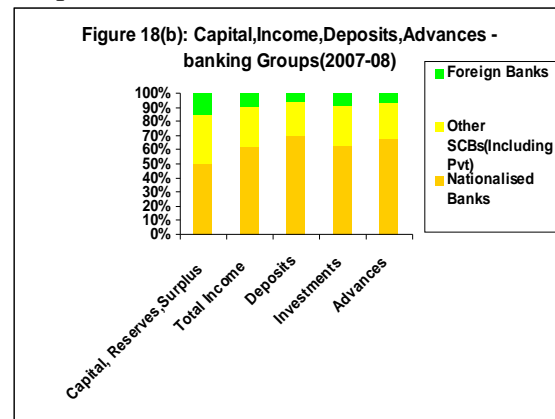
As the previous sections discuss, Indian financial integration is still in a nascent and developing stage. The financial market is not even horizontally integrated. In such a situation, if India goes for FCAC, vertical integration would be forced upon the players at some point of time. But owing to lack of horizontal integration, any benefits from vertical integration would be confined within the recipient segment only and would not be

distributed to other segments. This would create distortion and subsequent complications. Also, once such distortion sets in, with full CAC, dissatisfied players in the adversely affected segments would move out to international markets. This would not only cause a capital and savings flight but also an erosion of confidence in that segment.

One of the strongest backbones of a CAC-ready economy is its banking and financial sector. Existence of a strong and resilient banking sector is an essential pre-requisite for any country. Indian banking scenario doesn't conform to such a criterion. The sector is still dominated by public sector banks with relatively weak presence of private and foreign banks. Following graphs bring home the point:

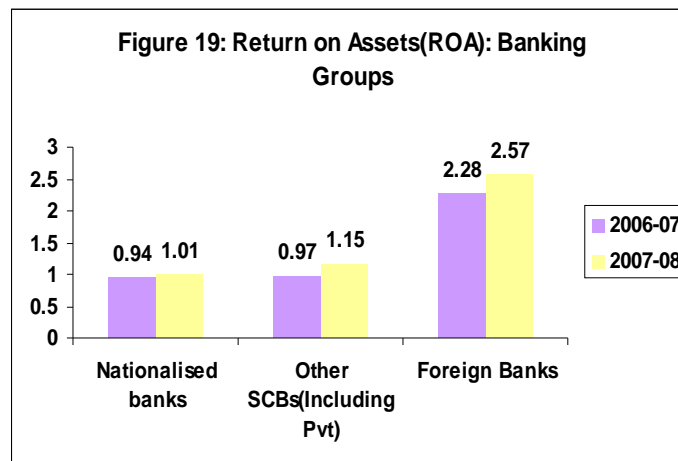


(a) Year: 2006-07



(b) Year: 2007-08

In both the years, the Public Sector Banks contribute most to Capital (Reserves and Surplus included), Income, Deposits, Investments and Advances made. However, Return on Assets is least for the PSB segment as shown in Figure 19:



Source: RBI

The weak performance by the private sector and foreign banks can be attributed to: Relatively late entry (the most profitable private banks started operating from mid-1990s), Lower scale of operations (in terms of customer base and spread) and higher degree of regulations and prohibitions (more applicable for foreign banks).

Thus it's evident that financial integration has mostly excluded the banking sector in India as of now. The adverse effects of CAC would have to be mostly absorbed by the public banks, whose efficiency has rooms for doubt, being preceded by a long era of

protectionism. But post-CAC, they are expected to deal with multi-currency transactions. The risks involved are:

- Currency Risk: Effect of currency appreciation/depreciation
- Counterparty Credit Risk
- Transfer Risk: Generated from tracking financial position of all economies involved
- Legal Risk.

It is still doubtful whether the state-protected banks would be able to ward the risks off. India also falls short of most of the criteria suggested by the first Tarapore Committee. The 3-year phasing plan of CAC as conceived in 1997 has not been fully effective even 11 years down the line. Without the pre-conditions strongly in place, no country can safely adopt CAC (as mentioned earlier, capital controls are virtually irreversible so far as international investor confidence is concerned).

Two crucial questions arise during evaluation of India's readiness to adopt full convertibility: First, are the indicators which conform to the levels suggested by the Committee sustainable in future, or are significant deviations from current levels to be expected, say 10 years down the line? Second, when, if at all, the non-conforming criteria are expected to converge to the recommended level or band? The following sub-sections explore these two issues.

#### **VII.A. Question 1: Sustainability of Conforming Criteria**

Previous sections identify the following counts on which India performed as recommended by the Committee:

- (a) *Trade and External Sector*
- (b) *Reserves Adequacy, and*
- (c) *Gross NPA of Public Sector Banks.*

The following discussion examines the sustainability of similar performance of these three measures, using a Trend Projection Method.<sup>[8]</sup>

##### **(a) Trade and External Sector**

The indicators of external/trade sector performance considered are: Exports, Imports, Trade Deficit, and Current Account Deficit: both in Absolute Value<sup>[9]</sup> and as Ratio to GDP.

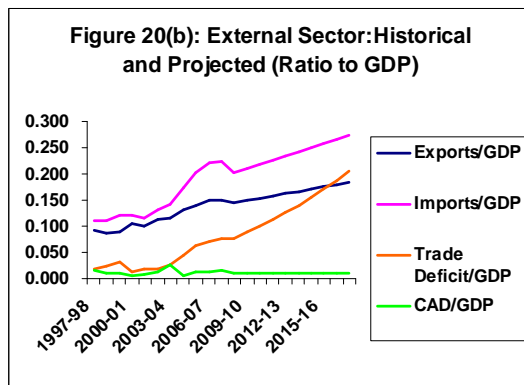
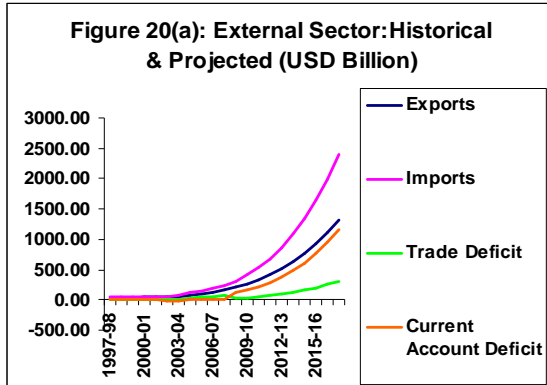
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<sup>[8]</sup> Period under Consideration:

*Historical: 1997-98 to 2007-08*

*Projection: 2008-09 to 2017-18*

<sup>[9]</sup> For Trend Equations see Technical Note.



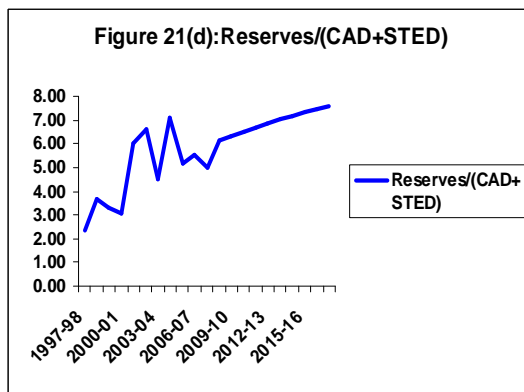
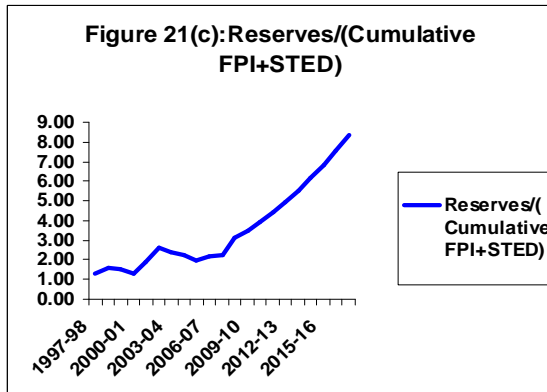
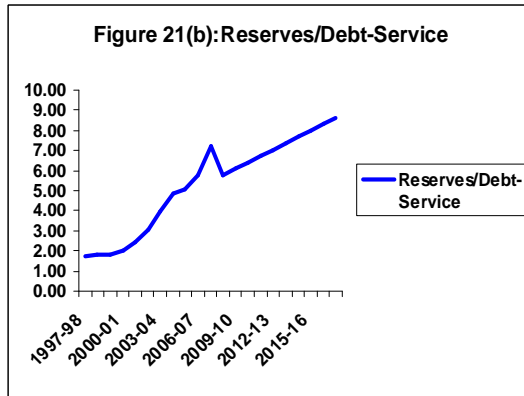
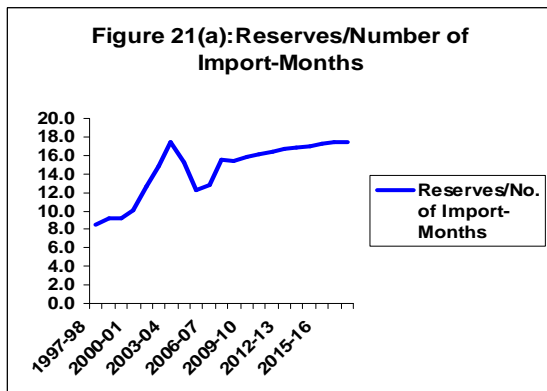
(a) Exports, Imports, CAD, Trade Deficit (b) X/GDP, M/GDP, CAD/GDP, TD/GDP

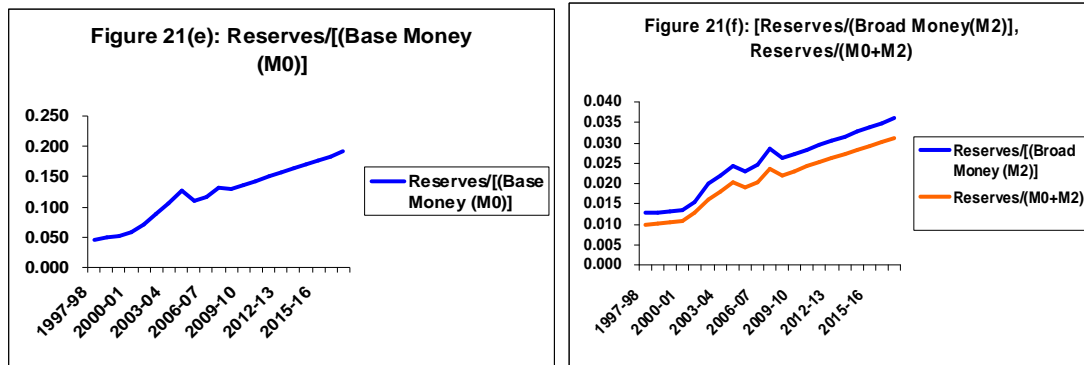
All the four indicators show a steadily increasing trend over the period in absolute value terms.

A near-steady increasing trend is observed when these indicators are expressed as a ratio to GDP, except the CAD/GDP ratio which stays contained in a certain band. This is a healthy indicator showing that CAD doesn't increase more-than-proportionately with a rise in GDP, so the GDP growth is sufficient enough to sustain the increase in CAD. <sup>[10]</sup>

### (b) Reserves Adequacy

This sub-section checks the seven Adequacy Indicators for Forex Reserves, namely: [Reserves/Number of Import-Months], [Reserves/Debt Service], [Reserves/ (Cumulative FPI+STED)], [Reserves/ (CAD+STED)], [Reserves/Base Money (M0)], [Reserves/Broad Money (M2)], and [Reserves/ (M0+M2)].

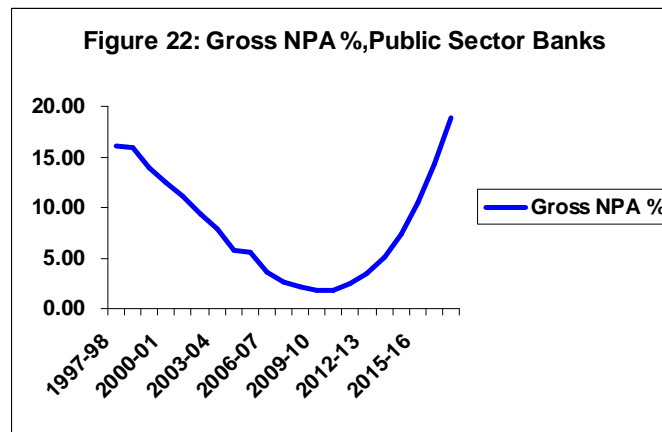




*Reserves Adequacy Indicators: Historical (1997-2008) and Projected (2008 – 2018)*

All the indicators, despite showing fluctuations, register an increasing trend that bolsters the reserves adequacy scenario of India in future. Hence, forex reserves tend to be adequate for absorbing the outcomes of large capital inflow, post-CAC.

**(c) Gross NPA % of Public Sector Banks (PSB)**



The projected trend line shows that after 2010-11, the gross NPA % increases continuously up to end of period considered. However, the trend projection method has not been subject to rigorous statistical testing and so this rising trend is questionable. This aspect, thus, can not be commented upon.

**VII.B. Question 2: Convergence of Non-Conforming Criteria to Target Levels**

The criteria that were not fulfilled by the Committee were:

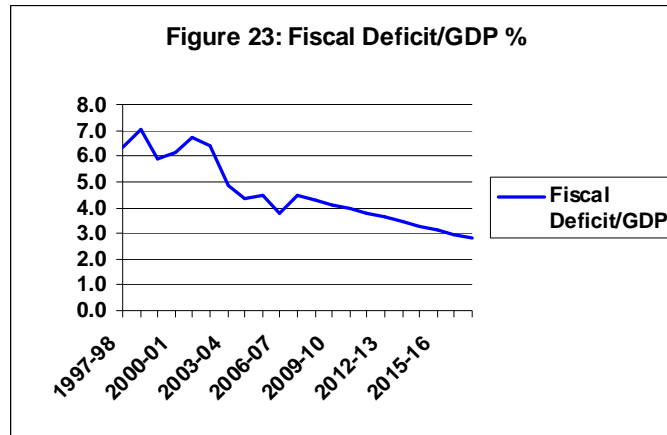
- (a) Fiscal Deficit/GDP Ratio
- (b) Cash Reserve Ratio
- (b) Debt Servicing Ratio
- (d) Last 3-months Average Inflation Rate.

[10] GDP Growth rate has not been individually computed due to fluctuations caused by global sub-prime crises. Such measurement being out of scope of this paper, (CAD/GDP) ratio has been directly projected.



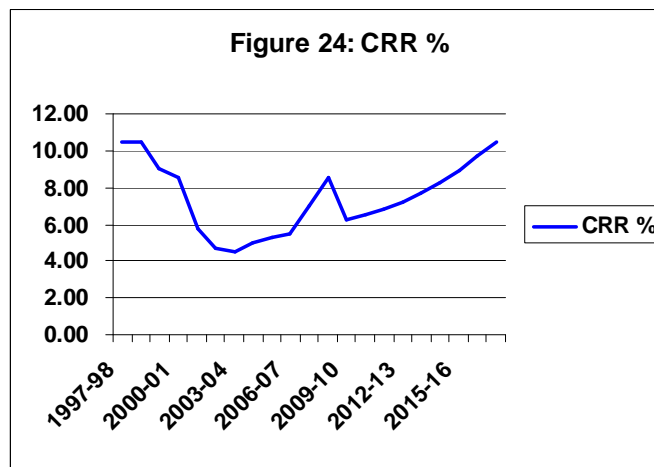
The following section discusses, using the same technique, the approximate timeline by when, if at all, the criteria would converge to the prescribed level.

**(a) Fiscal Deficit/GDP**



As against the prescribed Fiscal Deficit/GDP ratio of 3.5% by 1999-2000, the trend line reaches this target value in the year 2013-14. <sup>[11]</sup>

**(b) Cash Reserve Ratio**

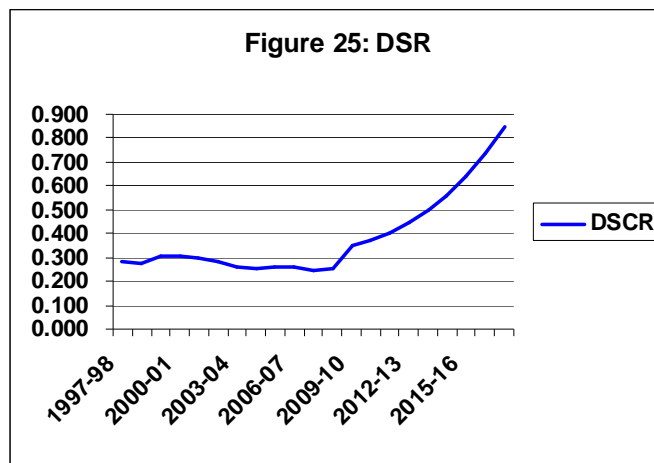


The lowest historical value of CRR was 4% in 2003-04. Since then it has never touched that level and assumed a highest historical value of 8.5%. <sup>[12]</sup> As the trend shows, there is an increasing trend in CRR after that. So CRR being at 3% is not a feasible possibility.

<sup>[11]</sup> Fiscal Deficit/GDP ratio is projected in entirety. No statistical testing was done, so these are gross estimates based on a fully autonomous and non-regressive trend projection method.

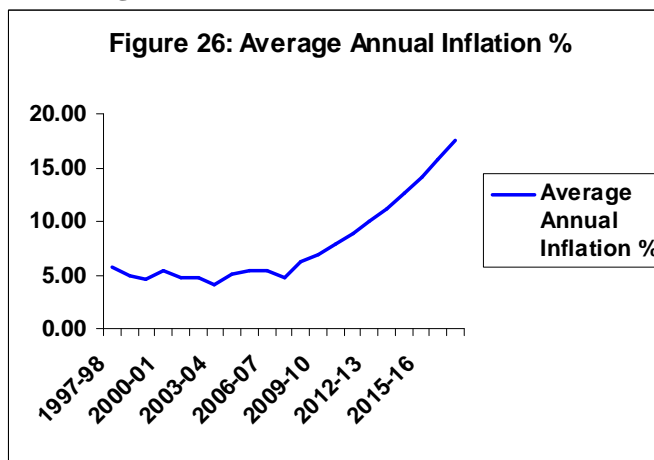
<sup>[12]</sup> For data values see Data Appendix: Projected Values

**(c) Debt-Servicing Ratio (DSR)**



Historically DSR has always stayed above the 20%-mark recommendation. The projection shows an increasing trend as well. <sup>[13]</sup> In India, interest expense covers approximately a quarter of total expenditure. Recovery from such “potential debt trap” situation seems a much difficult task, given present circumstances.

**(d) Last 3-Months Average Inflation Rate**



Historically, average annual inflation hovered around 5% but it was never as low as 3%, <sup>[14]</sup> the lower limit of the prescribed 3% - 5% band. Even if the projection is too steep to be feasible, there has not been considerable decline in inflation rate to reach 3%. <sup>[15]</sup> Thus the preceding sections show that while the fulfilled criteria show a tendency of being sustainable, the same can not be said about the rest. These are either met with at least a 15-year lag, or are not met at all in next 10 years.

<sup>[13]</sup> Rough estimate, refer note [11]

<sup>[14]</sup> For Data values see Data Appendix: Historical Values

<sup>[15]</sup> Currently India’s inflation rate is 0.27%, and it is clearly heading for a deflationary stage. In the year 2008-09 itself, inflation rate first reached 12% ceiling, then started falling drastically and came down to 0.27%. Such situation being an outlier, its effect has been excluded from scope of the discussion.

Accordingly, it can be concluded that the issue of viability of India adopting full capital account convertibility is still questionable. Adoption of the Second Tarapore Committee recommendations is not feasible at this stage, since the essential pre-conditions set by the Committee itself in a prior period have not been fulfilled still. These pre-conditions were cited by the Committee as the pillar of India's readiness to adopt CAC.

Advancing to fuller convertibility of the currency without ensuring the basic requirements firmly in place would cause bifurcations in the economy. Even though the corporate sector would largely benefit from CAC since they can access cheaper capital, thus augmenting investment decisions that would certainly bring medium-to-long-term benefits to the country, the short-term interests of the masses would be adversely affected. Since possibility of a currency and/or financial crisis can not be ruled out, political unrest could also set in.

As of now, India should focus on ensuring tight horizontal integration first, in its financial market. Unless the internal market segments are well-coordinated, any positive or negative outcome of vertical integration or capital account liberalization generated in one segment of the market would not spread to other segments. If negative shocks are generated, then the recipient segment would have to fully bear the brunt as it can not distribute the shock to other segments. Hence that segment would likely get crashed. Also, if positive stimulations are received by any segment, then too it gets contained in that segment only, so investors and players in other market segments would perceive this segment as more attractive and "domestic capital flight" would be generated. The remaining segments would dry up, causing distortion in entire financial market.

Clubbing this situation with full CAC offers much reason for concern. Capital would flow in and go out at the simplest sign of positive or negative signals generated by any part of the economy, and also by any global movements. In that case India should need a rigorous regulatory and monitoring authoritative body in place which would have effective system for anticipating investor behavior and intervening at the right moment to ensure domestic stability, prevention of disruption and mass interests. Currently the regulator system in India is not so robust. Frequent stock market crashes make home this point. Finally, India can no longer claim being "De-coupled" from western developed world. The current global financial crisis has impacted Indian economy adversely, even though after a time lag. GDP growth has declined, employment generation slowed down much, and the services sector – that contributes to more than half of India's GDP – is finding it vulnerable, being heavily reliant on the crisis-affected countries. The country is now at the brink of much uncertainty.

Thus, multiple trades-off exist in Indian economy now: that between corporate sector and citizens, between 'now' and 'later', and between internal strengthening and external collaboration. A rigorous cost-benefit analysis has to be done before ensuring further capital account liberalization keeping financial integration at the background. It will not be prudent to adopt a virtually irreversible policy stance at this uncertain juncture.

So it is concluded that India is not ready for full capital account convertibility, but it should prepare the grounds for adopting CAC in future, with a robust roadmap. But the exact timeframe of complete readiness still remains highly futuristic at this point.

## Data Appendix: Historical Data

### 1) Values in USD Billion

	FX-Res	Exports	Imports	CAD	T.D.	Cum FPI	NCF	NCF-CAD
1990-91	5.8	18.1	24.1	9.7	5.9	0.0	7.1	-2.6
1991-92	9.2	17.9	19.4	1.2	1.5	0.0	3.9	2.7
1992-93	9.8	18.5	21.9	3.5	3.3	0.3	3.9	0.4
1993-94	19.3	22.2	23.3	1.2	1.1	3.8	8.9	7.7
1994-95	25.2	26.3	28.7	3.4	2.3	7.6	8.5	5.1
1995-96	21.7	31.8	36.7	5.9	4.9	10.4	4.1	-1.8
1996-97	26.4	33.5	39.1	4.6	5.7	13.7	12.0	7.4
1997-98	29.4	35.0	41.5	5.5	6.5	15.5	9.8	4.3
1998-99	32.5	33.2	42.4	4.0	9.2	15.5	8.4	4.4
1999-2000	38.0	36.8	49.7	4.7	12.9	18.5	10.4	5.7
2000-01	42.3	44.6	50.5	2.7	6.0	21.3	8.8	6.2
2001-02	54.1	43.8	51.4	3.4	7.6	23.3	8.6	12.0
2002-03	76.1	52.7	61.4	6.3	8.7	24.3	10.8	17.2
2003-04	113.0	63.8	78.2	14.1	14.3	35.6	16.7	30.8
2004-05	141.5	83.5	111.5	2.5	28.0	45.0	28.0	25.6
2005-06	151.6	103.1	149.2	9.9	46.1	57.4	25.5	15.6
2006-07	199.2	126.4	185.7	9.8	59.3	64.4	45.8	36.0
2007-08	309.7	159.0	239.7	17.4	80.6	93.8	108.0	90.6
2008-09	249.0	NA	NA	NA	NA	NA	NA	NA

*FX-Res: Forex Reserves*

*CAD: Current Account Deficit*

*T.D. Trade Deficits (Exports – Imports)*

*NCF: Net capital Flows*

*Cum FPI: Cumulative FPI*

### 2) Banking Sector Statistics: In INR Billion

(a) 2006-07

(b) 2007-08

	Nationalized Banks	Other SCBs(Including Pvt)	Foreign Banks		Nationalized Banks	Other SCBs(Including Pvt)	Foreign Banks
Capital, Reserves, Surplus	46.34	20.19	11.41	Capital, Reserves, Surplus	56.6	39.7	17.6
Total Income	62.5	24.75	8.61	Total Income	82	38	13
Deposits	680.4	220.8	51.98	Deposits	840	294	68
Investments	226.5	85.6	24.65	Investments	267.6	121	35
Advances	478.9	165.9	43.57	Advances	601.9	225	58

3) Average X-Rate: INR vis-à-vis 4) X/GDP, M/GDP, CAD/GDP, TD/GDP

	USD	GBP	Euro		X/GDP	M/GDP	CAD/GDP	TD/GDP
1990-91	17.94	33.19	11.44	1990-91	0.063	0.084	0.034	0.021
1991-92	24.47	42.52	14.62	1991-92	0.074	0.081	0.004	0.006
1992-93	30.65	51.69	19.59	1992-93	0.079	0.093	0.019	0.014
1993-94	31.37	47.21	18.74	1993-94	0.088	0.092	0.005	0.004
1994-95	31.40	48.82	20.20	1994-95	0.089	0.097	0.011	0.008
1995-96	33.45	52.35	23.40	1995-96	0.098	0.113	0.018	0.015
1996-97	35.50	56.36	22.92	1996-97	0.094	0.110	0.013	0.016
1997-98	37.16	61.02	20.96	1997-98	0.093	0.110	0.015	0.017
1998-99	42.07	69.55	24.18	1998-99	0.086	0.110	0.010	0.024
1999-2000	43.33	69.85	44.79	1999-2000	0.089	0.120	0.011	0.031
2000-01	45.68	67.55	41.48	2000-01	0.106	0.120	0.006	0.014
2001-02	47.69	68.32	42.18	2001-02	0.100	0.117	0.008	0.017
2002-03	48.40	74.82	48.09	2002-03	0.113	0.131	0.014	0.019
2003-04	45.95	77.74	53.99	2003-04	0.116	0.141	0.025	0.026
2004-05	44.93	82.86	56.51	2004-05	0.130	0.174	0.004	0.044
2005-06	44.27	79.05	53.91	2005-06	0.139	0.202	0.013	0.062
2006-07	45.28	85.73	58.11	2006-07	0.151	0.222	0.012	0.071
2007-08	40.24	80.80	56.99	2007-08	0.149	0.224	0.016	0.075
2008-09	50.73	72.52	64.57					

*X/GDP: Exports/GDP Ratio*

*M/GDP: Exports/GDP Ratio*

*TD/GDP: Trade Deficit/GDP Ratio*

*DL/GDP: Domestic Liabilities/GDP %*

*R/M: Reserves/No. of Import-Months*

*R/DS: Reserves/Debt-Service Ratio, R/(F+S): Reserves/(Cumulative FPI+STED)*

*R/(C+S): Reserves/ (CAD+STED)*

*Average Inflation: Previous 3-Months' Average Annual Inflation rate*

*DSR: Debt-Service Ratio*

5) M2/GDP, Debt-Service% (6) NFA/C, DL/GDP, Inflation Rate, Change in Tax/GDP

	M2/GDP	DSR		NFA/C	DL/GDP	Avg Inflation	Change in Tax/GDP Ratio
1990-91	5.813	0.204	1990-91	21.26	65.5		NA
1991-92	5.905	0.239	1991-92	37.03	64.2		1.64
1992-93	6.061	0.253	1992-93	37.93	64.1	11.37	-2.78
1993-94	6.045	0.259	1993-94	71.66	65.3	10.73	-8.12
1994-95	6.202	0.274	1994-95	85.64	63.8	10.37	3.69
1995-96	6.125	0.281	1995-96	73.29	62.5	9.67	0.86
1996-97	3.161	0.296	1996-97	83.26	60.6	8.40	-1.79
1997-98	6.437	0.283	1997-98	97.12	63.4	5.67	-2.21
1998-99	6.692	0.279	1998-99	111.96	64.3	4.97	-6.96
1999-2000	7.093	0.303	1999-2000	111.34	69.5	4.53	6.72
2000-01	7.631	0.305	2000-01	123.94	73.7	5.47	3.15
2001-02	8.123	0.297	2001-02	136.92	79.2	4.70	-5.56
2002-03	8.053	0.285	2002-03	152.20	84.5	4.73	5.86
2003-04	8.801	0.263	2003-04	178.63	86.5	4.17	3.16
2004-05	8.880	0.255	2004-05	193.07	86.9	5.13	4.85
2005-06	9.058	0.262	2005-06	189.72	85.0	5.47	4.38
2006-07	9.367	0.258	2006-07	202.39	81.5	5.43	6.76
2007-08	10.047	0.242	2007-08	250.32	81.7	4.83	6.16

7) Reserve Adequacy Measures

	R/M	R/DS	R/(F+S)	R/(C+S)	R/M0	R/M2	R/(M0+M2)
1990-91	2.89	0.531	3.303	0.507	0.012	0.004	0.003
1991-92	5.70	0.897	4.827	2.995	0.023	0.007	0.005
1992-93	5.39	0.989	2.212	1.274	0.024	0.007	0.006
1993-94	9.91	1.644	2.637	4.150	0.040	0.013	0.010
1994-95	10.55	1.811	2.264	3.678	0.043	0.014	0.011
1995-96	7.09	1.486	1.491	2.156	0.035	0.011	0.008
1996-97	8.10	1.596	1.271	2.258	0.042	0.024	0.015
1997-98	8.50	1.766	1.301	2.342	0.046	0.013	0.010
1998-99	9.20	1.772	1.602	3.672	0.049	0.013	0.010
1999-2000	9.19	1.838	1.504	3.311	0.053	0.013	0.010
2000-01	10.04	1.986	1.301	3.040	0.058	0.013	0.011
2001-02	12.63	2.457	1.876	6.039	0.070	0.015	0.013
2002-03	14.87	3.068	2.585	6.603	0.088	0.020	0.016
2003-04	17.35	3.950	2.418	4.487	0.105	0.022	0.018
2004-05	15.23	4.877	2.270	7.125	0.126	0.024	0.020
2005-06	12.20	5.100	1.974	5.181	0.109	0.023	0.019
2006-07	12.87	5.778	2.193	5.510	0.117	0.024	0.020
2007-08	15.51	7.199	2.242	5.019	0.131	0.029	0.023

## Data Appendix: Projected Data

	Exports (USD Billion)	Imports (USD Billion)	CAD (USD Billion)	Trade Deficit (USD Billion)	Exports /GDP	Imports/GDP	CAD/GDP	Trade Deficit/GDP
<b>2008-09</b>	209.3	316.3	119.4	26.9	0.145	0.204	0.0115	0.0776
<b>2009-10</b>	264.1	412.9	164.1	37.4	0.149	0.211	0.0113	0.0885
<b>2010-11</b>	331.3	533.6	221.0	51.4	0.154	0.219	0.0111	0.1002
<b>2011-12</b>	412.6	682.2	292.0	69.7	0.158	0.227	0.0109	0.1127
<b>2012-13</b>	510.0	862.6	379.4	93.0	0.163	0.235	0.0107	0.126
<b>2013-14</b>	625.6	1079.2	485.5	122.2	0.167	0.242	0.0105	0.1401
<b>2014-15</b>	761.3	1336.5	612.6	158.1	0.171	0.250	0.0103	0.155
<b>2015-16</b>	919.6	1639.3	763.6	201.7	0.176	0.258	0.0101	0.1707
<b>2016-17</b>	1102.7	1992.7	941.1	254.1	0.180	0.265	0.0099	0.1872
<b>2017-18</b>	1313.2	2402.1	1148.0	316.3	0.185	0.273	0.0097	0.2045

	Gross NPA %	Fiscal Deficit/GDP %	CRR %	DSR %	Inflation %
<b>2008-09</b>	2.09	4.3	8.50	0.254	6.21
<b>2009-10</b>	1.77	4.1	6.26	0.347	6.95
<b>2010-11</b>	1.85	4.0	6.50	0.370	7.81
<b>2011-12</b>	2.40	3.8	6.83	0.402	8.81
<b>2012-13</b>	3.47	3.6	7.23	0.443	9.93
<b>2013-14</b>	5.12	3.5	7.72	0.495	11.19
<b>2014-15</b>	7.43	3.3	8.29	0.560	12.57
<b>2015-16</b>	10.45	3.1	8.94	0.640	14.09
<b>2016-17</b>	14.26	3.0	9.68	0.736	15.73
<b>2017-18</b>	18.90	2.8	10.49	0.851	17.51

	R/M	R/DS	R/(Cum- FPI+STED)	R/(CAD+ST ED)	R/M0	R/M2	R/(M0+M2)
<b>2008-09</b>	15.5	5.76	3.10	6.13	0.130	0.026	0.022
<b>2009-10</b>	15.8	6.08	3.50	6.32	0.136	0.027	0.023
<b>2010-11</b>	16.1	6.40	3.94	6.51	0.143	0.028	0.024
<b>2011-12</b>	16.4	6.72	4.43	6.69	0.150	0.029	0.025
<b>2012-13</b>	16.6	7.04	4.97	6.86	0.157	0.031	0.026
<b>2013-14</b>	16.9	7.36	5.55	7.02	0.164	0.032	0.027
<b>2014-15</b>	17.0	7.68	6.17	7.18	0.170	0.033	0.028
<b>2015-16</b>	17.2	8.00	6.85	7.33	0.177	0.034	0.029
<b>2016-17</b>	17.3	8.32	7.56	7.47	0.184	0.035	0.030
<b>2017-18</b>	17.4	8.65	8.33	7.60	0.191	0.036	0.031

## Technical Notes

### Trend Equations

1) Exports (USD Billion)

$$Y = 0.0049 X^4 - 0.1048 X^3 + 0.7232 X^2 + 0.7126 X + 14.698$$

2) Imports (USD Billion)

$$Y = 0.0111 X^4 - 0.2855 X^3 + 2.5333 X^2 - 5.8681 X + 24.905$$

3) Current Account Deficit (CAD) (USD Billion)

$$Y = 0.0026 X^4 - 0.0948 X^3 + 1.2166 X^2 - 5.9604 X + 12.362$$

4) Trade Deficit (USD Billion)

$$Y = 0.0063 X^4 - 0.1809 X^3 + 1.8131 X^2 - 6.5946 X + 9.9523$$

5) Exports/ GDP

$$Y = 0.0044 X + 0.0614$$

6) Imports/GDP

$$Y = 0.0077 X + 0.0574$$

7) CAD/GDP

$$Y = -0.002 X + 0.0153$$

8) Trade Deficit/GDP

$$Y = 0.0004 X^2 - 0.0047 X + 0.0225$$

9) Reserves/Number of Import Months

$$Y = -0.0147 X^2 + 0.9105 X + 3.4716$$

10) Reserves/Debt-Service

$$Y = 0.3209 X - 0.3401$$

11) Reserves/(Cumulative FPI + STED)

$$Y = 0.0227 X^2 - 0.4860 X + 4.1371$$

12) Reserves/(CAD+STED)

$$Y = -0.0036 X^2 + 0.3328 X + 1.108$$

13) Reserves/Base Money (M0)

$$Y = 0.0068 X + 0.0004$$

14) Reserves/Broad Money (M2)

$$Y = 0.0011 X + 0.0052$$

15) Reserves/(Base Money + Broad Money)

$$Y = 0.0011 X + 0.0031$$

16) Gross NPA % (Public Sector Banks)

$$Y = 5E-05 X^4 + 0.007 X^3 - 0.1503 X^2 - 0.5875 X + 18.324$$

17) Fiscal Deficit/GDP

$$Y = 0.0005 X^4 - 0.0247 X^3 + 0.3665 X^2 - 2.0819 X + 9.952$$

18) Cash Reserve Ratio

$$Y = 0.0404 X^2 - 1.4241 X + 18.457$$

19) Debt Servicing Ratio

$$Y = 4E-06 X^4 - 0.0001 X^3 - 0.0002 X^2 + 0.0197 X + 0.1928$$

20) Last 3-Year Average Annual Inflation %

$$Y = 0.065 X^2 - 1.5404 X + 13.616$$



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