Should India Introduce Capital Account Convertibility? An Assessment

A Dissertation Submitted to the University of Hyderabad in Partial Fulfillment of the Requirements for the Award of the Degree of

MASTER OF PHILOSOPHY

IN

ECONOMICS

BY

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DECEMBER-2015

DECLARATION

I hereby declare that the work embodied in the present dissertation entitled **"*Should India Introduce Capital Account Convertibility? An Assessment*"** carried out under the supervision of **Dr. Alok Kumar Mishra,** School of Economics, for the award of Master of Philosophy in Economics from University of Hyderabad, is an original work of mine. To the best of my knowledge, no part of this dissertation has been submitted for the award of any research degree or diploma at any University or institution. This is also free from plagiarism. I hereby agree that, my thesis can be deposited in Shodganga/INFLIBNET. A report of plagiarism statistics from the university librarian has been enclosed.

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CERTIFICATE

This is to certify that the research embodied in the present dissertation entitled "Should India Introduce Capital Account Convertibility? An Assessment" has been carried out by Rukmani Mahala under my supervision for the full period prescribed under M. PHIL ordinances of the university.

I declare to the best of my knowledge that no part of the thesis was earlier submitted for the award of a research degree of any university or institute.

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ACKNOWLEDGEMENTS

I take great pleasure in expressing a deep sense of gratitude to my supervisor, Dr. Alok Kumar Mishra, for his sincere guidance, healthy encouragement, concrete advice and cooperation during my research work.

I am also thankful to Prof. B. Kamaiah, dean of the school of economics for providing the conducive atmosphere, which enable me to complete this work.

No words of gratitude are sufficient to appreciate the support, technical advice and timely help received from my friends Tikelal, Anand, Niranjan, Roshan, Ebrahim, Varsha, Lingaraj, Lilu, Ketki, Chodaganga. Without their support, I would not have reached this stage. Special thanks to Tikelal and Anand, who shared their technical knowledge and provided invaluable assistance in the completion of this dissertation.

And finally, I would like to express my immense gratitude to my father Purna Chandra Mahala, my mother Pramila Mahala, my brothers Pawan Kumar Mahala and Puspak Kumar Mahala, my elder sister Lopa Mudra Mahala, and all my family members who have encouraged and supported me in all my endeavours, academic and otherwise.

Rukmani Mahala

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ABBREVIATIONS

3SLS	Three Stage Least Squares
ADF	Augmented Dickey Fuller
ADR	American Depository Receipts
ARDL	Autoregressive Distributive Lag
AREAR	Annual Report on Exchange Arrangements and Exchange Restrictions
ARMA	Autoregressive Moving Average
BSE	Bombay Stock Exchange
CAC	Capital Account Convertibility
CAD	Current Account Deficit
CAL	Capital Account Liberalization
CAO	Capital Account Openness
CAR	Capital Adequacy Ratio
CBLO	Collateralized Borrowing and Lending Obligation
CCIL	Clearing Corporation of India Limited
CIA	Central Intelligence Agency
CPI	Consumer Price Index
DF	Dickey-Fuller
DFHI	Discount and Finance House of India
DGP	Data Generation Properties
ECBs	External Commercial Borrowings
ECM	Error Correction Model
EOU	Export Oriented Unit
FA	Foreign Asset
FCAC	Fuller Capital Account Convertibility
FCCBs	Foreign Currency Convertible Bonds
FDI	Foreign Direct Investment
FEMA	Foreign Exchange Management Act
FERA	Foreign Exchange Regulation Act
FII	Foreign Institutional Investor

FINDEV	Financial Development
FL	Foreign Liability
GDP	Gross Domestic Product
GDPPC	GDP Per Capita
GDRs	Global Depository Receipts
GMM	Generalized Method of Movements
IFI	International Financial Integration
IID	Identically and Independently Distributed
IMF	International Monetary Funds
INR	Indian Rupees
INV	Investment
LAF	Liquidity Adjustment Facility
LLY	Liquidity Liabilities
LPG	Liberalization Privatization and Globalization
LRS	Liberalized Remmittances Scheme
MSS	Market Stabilization Scheme
MTM	Mark to Market
NBFCs	Non-Banking Financial Companies
NDA	Net Domestic Assets
NDF	Non-Deliverable Forward
NDTL	Net Demand and Time Liabilities
NFA	Net Foreign Assets
NIMZ	National Investment and Manufacturing Zones
NON-OECD	Non Organization for Economic Co-Operation and Development
NPA	Non-Performing Assets
NRERA	Non-Resident External Rupee Account
NRI	Non Resident Indian
NRNRRD	Non-Resident, Non-Repatriable Rupee Deposit
NSE	National Stock Exchange
OCB	Overseas Corporate Bodies
OECD	Organization for Economic Co-Operation and Development
OLS	Ordinary Least Squares
PIO	Person of Indian Origin

PP	Phillips Peron
PPP	Purchasing Power Parity
PRIVY	Credit Flowing Towards Private Sectors
SEBI	Security and Exchange Board of Indian
SEP	Primary School Enrolment
SES	Secondary School Enrolment
SEZ	Special Economic Zone
SSE	Secondary School Enrolment
UNIDO	United Nations Industrial Development Organization
VAR	Vector Auto Regression
VECM	Vector Error Correction Model
WDI	World Development Indicator
WPI	Wholesale Price Index
YPC	Income Per Capita

CHAPTER-I

Background, Objective & Methodology of the Study

1.0 Background:

In the late 19th and early 20th centuries the industrialized economies of Europe and the United States have been highly integrated in the global financial market; which means that the market has more priority over government regulations. Restrictions and regulations on capital have become relatively relaxed both within and between countries and trade hindrances on goods and services have been reduced. In this period, many countries have obtained a gold standard in their monetary system and have been practicing fixed exchange rate system with one another. The bank of England was the coordinator of the system. It encouraged bankers and industrial capitalists of the developed nations to gather wealth and make investment in infrastructure and other developmental projects in the colonial and semi-colonial countries in order to enhance the welfare of those countries. But this system did not run properly and the capital mobility collapsed in the 1930s. The main cause behind the collapse was the laissez faire approach to financial markets. This created an excessive accumulation of debt and more speculative investment which led to many investors failing spectacularly. The sole reason for the crisis was International capital flows.

In the aftermath of this collapse, many countries have adopted government regulations (Exchange and capital controls) to maintain the international flow of money and capital through the International Monetary Fund (IMF). John Maynard Keynes strongly supported this policy. Keynes, one of the renowned economists of 20th century, designed the Bretton Woods agreements in 1944. These agreements formulated the IMF and the World Bank as well as a global system of fixed exchange rates. Most of the countries maintained control on international capital as their model for at least the first three decades following the Second World War. In 1950s and 1960s most of the economy of the World started recovery and a majority of the developed economies performed well. This was called the golden age of economic growth and gradually the memories of the financial crises of the great depression disappeared. The governments started removing restrictions on the international flows of capital and money. From 1971 to 1973, the fixed exchange rates system collapsed and exchange rates became more flexible because of oil crises and stagflation of the 1970s. The United States, Canada and Europe, as well as many developing countries started becoming increasingly financially open and the control on` financial flows became flexible for the next 20 years. Capital mobility increased in most of the countries in 1980s. The economists and IMF started considering financial liberalization [1]and the removal of capital controls in the developing world.

Trade liberalization and current account convertibility were the central ideas of IMF's ordinance in 1945, but the concept of liberalization of capital account transaction as a policy was debated in the 1990's. At the time, many countries thought of implementing this capital account convertibility policy right away, but the Asian financial crisis, 1997 devastated many highly successful Asian countries such as Thailand, South Korea, Indonesia, Philippines and Malaysia. The crisis was very soon followed by the Russian financial crisis in 1998 and the international capital flow began to drop suddenly. These crises prompted bankers and economists to reconsider financial liberalization for fear that it creates more volatility and instability in financial flows, which in turn causes financial crises. Countries like India and China who maintained strong controls over international flows were affected less by the financial crisis. Again in the world history, another severe economic crisis occurred during 2008-09 known as global financial crisis. The crisis of 2007-09 started initially as a "subprime mortgage crisis" with the loss of confidence by the investors on overvalued securitized mortgages in the US. The consequences of the global financial crisis unfolded with the collapse of the Lehman Brothers in September 2008. It was felt initially in the advanced economies' financial markets. It spread gradually to their real and external sectors, ultimately affecting growth, trade and financial flows across the global economy. The impact of the crisis in the advanced economies was transmitted to developing economies mainly through four channels, namely, trade, private capital flows, remittances and international bilateral aid. According to Rodrik (1998), "markets for goods and services are rarely textbook perfect, but they operate in most instances with a certain degree of efficiency and predictability. Financial markets are fundamentally different. Market failure arising from asymmetric information, incompleteness of contingent markets, and bounded rationality which are the common disease in financial markets."[2] In his opinion, there is no fixed reason for the crisis, i.e. there is no definite model or policy to avoid crises, which implies that the possibility of a financial crisis cannot be ruled out; there is no magic bullet to prevent one from occurring. Since the impact of the crisis varied across the region but was limited in emerging economies where capital account restrictions exist, critics of financial globalization have strongly argued against capital account transaction, and have advocated capital controls.

[1] The word financial liberalization, financial openness, capital account openness and capital account convertibility has been utilized as same meaning in this study.

[2] Rodrik, D. (1998). Who needs capital-account convertibility? *Essays in international finance* , 55-65.

From the above discussion, we may surmise that crises occur due to financial globalization. On the other hand, there are many economists and policy makers in favor of an open capital account, which will lead to more efficient allocation of capital. But now the question arises whether this open capital account will benefit the emerging economy. Does it actually make an emerging economy globally competitive and enhance economic growth or does it lead to economic collapse? India has started its liberalization process in recent years so the matter of capital account convertibility has become very pertinent for it at this point.

1.1. Concept of CAC:

The capital account of Balance of Payments consists of several financial flows like Foreign Direct Investment (FDI), portfolio flows and bank borrowing. It is possible to control these flows by imposing various kinds of restrictions through official channels. The concept of capital account convertibility indicates a higher degree of financial integration of the country with the World economy by permitting larger amounts of capital inflows and outflows (Kose, Prasad, & Taylor 2011). [3]It is a capital account convertibility (CAC) policy that allow freely for the transactions of local financial assets into foreign financial assets in a market determine exchange rates. The biggest advantage of capital account convertibility is that it will able to access more efficient global allocation of capital from capital rich to capital poor countries. People can obtain higher returns from savings in industrial countries by higher growth, employment opportunities and living standard in developing nations.

1.2. Liberalization process in India:

The reform in India was initiated in the year 1991 after facing balance of payment crisis in 1990-91. The main objectives of this reform are to remove economic difficulties and to enhance the development of the country. So the Indian government has been following the LPG policy for improving the economic conditions of the country. The implementation of this policy in India started integrating the country's economy with the world economy. This process is making India relatively more open to the world economy. An open economy interacts with the rest of the world in two ways; it interacts with the world markets for goods & services and it interacts with the world financial market. Considering these two forms of country openness, the Indian economy adopted the present form of current account convertibility in August 1994. This allows any Indian to access foreign exchange to buy goods and services. However, openness to financial

[3] Kose, M. A., Prasad, E. S., & Taylor, A. D. (2011). Thresholds in the process of international financial integration. *Journal of International Money and Finance , 30* (1), 147-179.

market/capital account is still controlled in terms of restriction on investment and borrowing, where outflows through Indian individual or an institution is strictly regulated. In the liberalization process foreigners and non-resident Indians can invest in Indian capital market freely. India has partially converted to capital account.

1.3. Tarapore Committee Approach:

As we know, the Indian economy is one of the fastest growing economies in the 21st century. Given this, economists and policy makers have been contemplating capital account convertibility for India. This led to the formation of the Tarapore Committee as recommended by Reserve Bank of India. The proposal for the initiation of CAC in India was forwarded by the Tarapore Committee. The report submitted by this committee in the year 1997 proposed a three year time period for the total conversion of rupee i.e. 1997-98 (1 phase), 1998-99 (2nd phase) and 1999-00 (3rd phase). The committee recommended some preconditions over the three-year period such as (a) that the gross fiscal deficit of the centre be reduced to 3.5 per cent of GDP in the year 2000, (b) that the inflation rate be maintained at an average of 3-5 per cent over the three year period, and (c) that the cash reserve ratio be lowered over the three year period from an average effective rate of 9.3 to 3 percent while reducing the non-performing assets from 13.7 per cent to 5 percent. But before all the objectives could be fulfilled, the emergence of the South-East Asian monetary crisis put the implementation of these policies on hold.

In the aftermath of crises, i.e. from the year 2000 onwards, the rate of the Indian economic growth increased significantly (in 2005 the growth rate was nearly 8.5 percent). When India's economic condition improved, Dr. Manmohan Singh, the then Prime Minister of India, brought up the issue of CAC in his speech at the Reserve Bank of India, Mumbai, on March 18, 2006. He suggested that the changes in the previous two decades foster merit movement towards fuller CAC within a transparent framework. He requested the finance minister and the Reserve Bank to revisit the subject and to construct guidelines on the basis of current realities. Therefore, the government revived the committee headed by Mr. S. S. Tarapore in 2006. The committee had recommended that emphasis should be laid on the better management of liquidity risked and credit risks by the banks before Fuller capital account convertibility (FCAC). It also sought to highlight the monitoring of liquidity levels through a centralized internal mechanism of the banks and through different currencies. Hence, it focused on the increase of more derivative instruments, proper accounting framework, and proper disclosure to be made and comprehensive guidelines for the derivatives. The second Tarapore committee guidelines had been made with the year 2011 as the target date for capital account convertibility of the rupee. In

2006, the committee concluded that the Indian economy then was quite conducive for the pre-conditions it suggested. The fuller capital account convertibility of the rupee was shown to be advantageous at the end of 2006 when the committee submitted its report. The global financial crisis of 2007-09 however, brought a big change in the economic situation. At the time, the Indian economy would have been vulnerable to the crisis if the capital account convertibility as recommended by the Tarapore Committee were implemented. Thus, the implementation of the second Tarapore committee recommendation also failed.

1.4. Research Context:

The issues of capital account convertibility, regarded as an integral component of the overall liberalization process in developing countries, is a raging debate in India. As country domestic savings and taxes are not able to fulfill country investment demand, funds from abroad are necessary for additional domestic savings for economic growth (Goel, S. 2012)[4]. Many economists have suggested that it is necessary to achieve stable macroeconomic parameters before moving towards this policy. Of late, the government is in the process of re-evaluating the chances of movement towards full capital account convertibility. The international capital flows perform a spectacular role in current significant development of India. The strength of external sector depends on the size and compositions of capital account in the Indian economy. According to the policy makers, it is quite impossible to maintain capital control in the long run (RBI, executive director G. Padmanabham, 2015). But this raises the question of how the adverse effects of capital account openness can be avoided. Thus the movement of full capital account convertibility depends on preconditions like fiscal consolidation, inflation control, low level of NPAs, low and sustainable level of current account deficit, strengthening of financial markets, and prudential supervision [5]of financial institution. Hence, in this study, we will analyze current conditions of India on the basis of preconditions given by the Tarapore committee for the movement of capital account convertibility. In addition to this, we will examine whether or not capital account openness can boost growth in the Indian economy.

[4] Goel, S. (2012), "India & Capital Account Convertibility: A journey of progress and menace", Management insight, Vol8, No 2.

[5] Generally the prudential supervision term mean to the banking society, where there is a supervising authority who assure to the depositors that they are being protected by the institution.

1.5. Objectives of the Study:

In the light of the above background, the objectives of the study are as follows:

1. To study the current macroeconomic soundness and stability of the Indian economy on the basis of the Tarapore committee recommendations for the movement of capital account convertibility.

2. To analyze the relationship between capital account convertibility and economic growth.

1.6. Methodology of the Study:

In order to show the impact of capital account openness on economic growth, our second objective, we use the time series annual data from the year 1972 to 2012 to find out the relationship. At first, the study employs the unit root test to examine the stationary properties of the time series variable. This has been tested through Augmented Dickey Fuller and Phillips Peron test. After that Johansen's co-integration test has applied to investigate the long run equilibrium relationship among the variables. In order to test the short-run dynamic relationship, we have followed the Toda and Yamamoto (1995) procedure to test for Granger's causality in the Vector Auto Regression (VAR) block exogeneity format.

1.7. Description of Variables and Period of Study:

To examine the relationship between capital account openness and economic growth in case of India, we apply annual data set. In this study GDP per capita is the dependent variable and capital account openness is taken as independent variable. The GDP per capita is a complex phenomenon, because it is influenced by several factors. Given this, the study has considered some control variables according to the relevant to our context. The control variables are investment (INV), secondary school enrollment (SSE) and financial development (FINDEV). The financial development (FINDEV) has been calculated by estimating the ratio of broad money (M_3) to GDP. Secondary school enrollment is the proxy of human capital. The study is based on the time series data for the period 1972 to 2012. The financial integration or, capital account openness is based on the measure of de facto financial integration created by Lane and Milesi-Ferretti (2003). The capital account openness is measured by the following formula:

$IFIGDP_{it} = (FA_{it} + FL_{it}) / GDP_{it}$

Here IFI represents the international financial integration and the FA & FL represents stock of foreign assets and liabilities respectively. The summation of FA (FDI and FII assets) and FL (FDI and FII liabilities) with respect to GDP is used to find financial integration or, capital account openness.

1.8. Organization of the Study:

This study is segmented into five chapters. Chapter II presents the theoretical and empirical review of literature in order to better understand the issues related to the capital account convertibility. Chapter III highlights the trend analysis of the macroeconomic soundness and stability of the Indian economy in terms of the Tarapore committee report recommendations. Chapter IV examines the relationship between capital account openness and economic growth empirically. The concluding chapter elaborates on the major findings of the study, conclusion and further scope for research.

CHAPTER-II

Review of Literature

2.0. Introduction :

Many countries have liberalized their capital account in the last two decades. In 1970s and 1980s many countries most of which were industrialized, adopted capital account liberalization policy in the process of international economic integration. It has seen that the benefit of capital account liberalization leads to higher growth and low volatility in case of industrial countries. However, the effect of capital account liberalization comes with risks as well as rewards. Theory suggests that capital account openness is very effective at allocating capital globally. It enables capital to transfer from capital rich countries to capital poor countries and people benefit more due to higher returns in saving. This leads to increase in growth, employment opportunities and enhances the living standard of people in developing countries. On the other hand, capital market openness makes the economic conditions of the country unstable. Most of the developing countries are unable to use the international financial market effectively to reduce volatility. Several studies have discussed the impact of capital account openness on the basis of different macroeconomic points of view.

Numerous academic studies have taken into consideration the relationship between capital account liberalization and growth by including the indicators of liberalization into the classic growth model. The available literature does not provide a particular strong conclusion regarding openness. Many existing studies have focused on the impact of capital account openness and growth; Rodrik (1998) has not found any relationship between capital account openness and growth, whereas Quinn and Toyoda (2008), Bekaert et al. (2005, 2010) Saidi (2010), Klein and Olivei (2000), Quinn (1997) have identified a positive relation between financial market integration and economic growth. No studies which strongly indicate that capital account openness has a negative impact on economic growth have been found. The upcoming section reviews literature concerning the impact of capital account openness.

2.1. Literature in Favour of Capital Account Openness and Economic Growth:

This section deals with the positive impact of capital account openness on economic growth.

Estrada, G. et al. (2015) studied empirically on the effect of financial openness and economic growth, even if many works had already on it. The post crisis period reveals the conflicting relationship between financial openness and economic growth. They applied baseline regression to find out the relationship among financial development, financial openness and economic growth. For analysis purpose the variables like financial development, financial openness, the exchange rate regime and the number of nonfinancial control variables are taken as variables which affect growth. The financial development indicators such as total liquid liabilities as a share of GDP measure as financial depth, private credit by deposit money banks as a share of GDP indicate the impact of banking sector, stock market capitalization as a share of GDP relates to the size of equity market in an economy, the data on liquid liabilities come from the Financial Development and Structure Dataset of Beck, Demirgrue- Kunt & Levine (2000, 2009) & Cihak et al. (2012), data on private credit and stock market capitalization come from the World Bank's World Development indicators online database. The second variable i.e. the measure of financial openness is taken through de facto and de jure indicator. The exchange rate regimes carry both the de facto classification and the official IMF classification constructed by Reinhart & Rogoff (2004) and updated by Ilzetski, Reinhart & Rogoff (2011). The Arellano-Bond generalized method applied for empirical estimation. The full sample of the GDP per capita growth regression is a cross-country panel dataset covering 108 economies (of which 20 are developing Asian economies) with five non-overlapping 5-year periods between 1977 and 2011. The result revealed that financial development lead to economic growth but priority should be given to the overall financial development rather than composition of the financial system and the positive effect of financial development of growth is more in developing countries. So the final conclusion of the study is that financial development has positive and significant impact on growth.

Kennedy, A. (2013) highlighted the impact of financial openness on economic growth in the sense that whether the relationship between financial openness and economic growth is significant or not. For estimation purpose, the study based on panel level data for selected developed countries. The study considered 34 developed countries and ten year time period, i.e. 2000-10 for analysis purpose. These countries had been selected from the list of World Bank and the CIA World Fact book. The Fixed Effect model had employed in regression due to panel data. The result indicated positive relationship between financial openness and economic growth. So by considering the theory and the study, he suggested that developed countries should avoid restrictions on financial openness to get more benefit. Therefore the study recommended that policy maker should not support on the restriction of financial openness in order to assist countries by encouraging economic growth in a decline global economy.

Popov, A. (2011) emphasized that growth in output and risk is a combine effect of financial liberalization. For analysis purpose he collected the sample of 21 industries data in 55 countries over 45 years. The data sourced from 2010 UNIDO industrial statistics 2 databases and cover the period 1963-2007 which contain industry data on investment, number of establishment and employment. The data on each sector must have 10 years before and at least 10 years after liberalization and each country must have 10 such sectors. The simple OLS and 3SLS method have applied. The results indicated the volatility of growth process and the distribution of output growth is skewness in nature which leads to risk that if higher growth and higher growth variability occur at the same time, then it can be measured as the volatility and the left skewness of the growth process. He revealed that the effect of growth and growth volatility is quite high in industries which basically depend on externally and able to get higher opportunities. There are some effects of liberalization on growth, which lead to increased risk; therefore the growth and risk are the simultaneous effect in liberalization. The study suggests that the benefits of financial liberalization and its cost is related to higher risk and which can be reduced through strong and efficient institutions.

Bakaert, G. et al. (2010) studied that financial openness lead to economic growth, but the impact of financial openness on factor productivity is more important than the effect on capital growth. So the impact of financial openness is a permanent one, not temporary. The study covers 96 countries over 1980-2006 periods for estimation. They measure capital stock by using the method described in King and Levine (1993) and the total factor productivity growth is constructed from Beck, Levine and Loayza (2000). For measuring financial openness, data uses from IMF's (AREAR) and Quinn's (1997) measures of capital account openness. This was available for only 78 countries out of 96 countries. Secondly, for equity market openness they have used official financial openness measure based on Bekaert and Harvey (2005). It is available for 96 countries and the measure of equity market openness has been used from the proposed given by Bakaert (1995) and Edison & Warnock (2003). The pooled OLS method has been applied to investigate the relationship. The variables are capital account openness, official equity market liberalization on real per capita GDP, capital stock, total factor productivity and the control variables are secondary school enrollment (human capital), logarithm of life expectancy (health care), trade openness (export plus import divided by GDP) and private credit to GDP (financial development). The result indicates that growth on financial openness is not uniform to all. The countries having an efficient institution are enjoying growth.

Saidi, H. (2010) has investigated the relationship between capital account liberalization and economic growth. The sample has been taken over 60 developed as well as developing countries (OECD & Non- OECD) over the period 1984-2007. The independent variables are income per capita (YPC), primary school enrollment rate (SEP), secondary school enrollment rates (SES) and capital account liberalization (CAL) and the dependent variable is real per capita GDP. The dynamic panel data have employed to estimate the relationship between capital account liberalization and economic growth. The data have sourced from WDI CD-ROM (2008) for growth, i.e. real per capita GDP, YPC, SEP, SES and IMF's (AREAER) data for CAL. The GMM system analysis model has utilized for analysis. The result reveals that there is a direct correlation between the CAL and economic growth. But this may be positive or negative and any diversification of results based on the sample collection and study period. This study has revealed that OECD countries have shown good performance due to proper management of capital flight, whereas non-OECD countries have shown negative value to co-efficient.

Quinn, D.P. & Toyoda, A.M. (2008) showed a positive relation between capital account liberalization and economic growth in case of both developed as well as emerging nations. In their studies, they have applied de jure measures of capital account openness and financial current account regulations to identify whether capital account openness lead to economic growth or not. The method like pooled time series, cross-sectional OLS and system GMM have applied to examine the growth rate of economy for 94 nations, from the period 1955-2004. The measurement of error is differing according to time periods and the collinearity among independent variables account for conflicting results in previous scholarship. The result suggests that the change does not have any link with international financial openness associated with independence and postcolonial government in many parts of the world in 1960s which have severe harmful macroeconomic effects. The financial policy plays a vital role to influence growth. There is no evidence has been found for prudential capital control whereas many evidence are against the case for strong capital controls.

Shahbaz, M. et al. (2008) have examined the relationship between capital account openness and economic growth both in short run as well as long run in case of Pakistan. They have applied the advance Autoregressive Distributive Lag (ARDL) for long run association and Error Correction Model (ECM) for short run dynamics for the time period 1971 to 2006 to investigate the relationship between capital account openness and economic growth in Pakistan. For analysis purpose capital account openness, GDPPC i.e. GDP per capita and control variables such as inflation, investment as a share of GDP, secondary enrollment proxy for human capital and market capitalization proxy for financial development have taken as variables. The dependent variable is GDPPC and other variables are independent variable. The result of the study has indicated that capital account openness leads to economic growth in long run. The study proposed that macroeconomic soundness, strong financial systems and well developed infrastructure is necessary to reduce the risk of capital account openness.

Bekaert, G. et al. (2005) have found the relationship between financial openness and growth on the basis of the equity market liberalization process on economic growth. They have regressed the real per capital gross domestic product growth on an equity market liberalization indicator by using the panel data. The equity market liberalization data is based on IMF measure and two measure of capital account openness based on Quinn (1997) and Quinn & Toyoda (2003). The largest samples cover 95 and 75 countries and have used macroeconomic and demographic data. The small sample cover 50 and 28 countries which are based in addition to macroeconomic and demographic information, data describe the state of banking and equity market development in each country. The result based on largest sample of 95 countries and largest sample of 50 countries includes financial information and cover the time 1981-97 period. The result show that on an average equity market liberalization lead to 1 per cent increase in economic growth. They found that largest sample results are in favors of country with a high-quality institution.

Levine, R. (2001) highlighted that international financial integration lead to enhance economic growth. This can be achieved by improving the domestic financial market and banks. He emphasized that foreign banks tends more efficient domestic banking system which positively effects productivity and growth. Secondly, liberalizing restrictions on international portfolio flows tends to boost domestic stock market liquidity, which positively effects productivity and growth. Therefore the findings show that international financial integration will able to encourage economic development through domestic financial system improvement which will impact positive growth on long run.

Edwards, S. (2000) measured the effect of capital mobility on economic growth by doing cross-countries analysis. Basically he analyzed among industrial, African, Asian, Non-industrial European, Middle East and Western Hemisphere or Latin America & the Caribbean countries and divided the capital flows into three types such as FDI, debt flows which include debt of banks and bonds purchased by foreigners and other type of flows which mostly indicate portfolio equity flows. For concrete analysis he divided the time period into three different parts like 1975-82, 1983-89 and 1990-97. To find out whether capital flows behaved differently across countries, he has taken the help of non-parametric Kruskal-Wallis chi-square tests and the result of the study strongly suggested that capital account openness and productivity can only show positive relation when the country will have certain degree of development. As the degree of development differ from advanced country to emerging country. So only rich and middle income nations will get benefit due to capital openness.

Klein & Olivei (1999) have examined cross-section of countries for the time period 1986 to 1995 in order to find out the effect of open capital accounts on financial deepness and economic growth. So in the literature the three indicators of financial deepness has been used on the relationship between financial depth and economic growth (King $ Levine 1993; Levine, Loayza & Beck 1999) and the indicators are liquidity liabilities indicator (LLY) which represent the ratio of liquid liabilities to GDP, second indicator i.e. the credit flowing towards private sectors (PRIVY) which is the ratio claims on the nonfinancial private sector to GDP indicate credit issued to the private sector only and the third indicator i.e. BANK represents the deposit money bank domestic assets to the sum of deposit money bank domestic assets and the central bank domestic assets. They tried to explore the connection between the indicators LLY & PRIVY and in between either of these and BANK. For the analysis purpose, the sample of almost 100 countries has been taken where the sub samples of 21 industrial countries and over 70 developing countries. The Wilcoxon test has applied to see whether significant number of countries experienced an increase in financial depth between 1986 and 1995. The result reveals statistically significant and economically relevant effect of open capital accounts on financial deepness and economic growth in a cross section of developed and developing countries over the period 1986 to 1995. It shows that basically capital account openness and financial depth are positive among industrial countries whereas it is not that relevant for non OECD countries. Therefore the study has suggested that policy reform in developing countries is needed with appropriate institutions and sound macroeconomic policies.

2.2. Literature Against the Relationship between Capital Account Openness and Economic Growth:

Many authors were unable to show any correlation between the degree of capital account convertibility and economic growth in their reviews. Alesina, Grill and Milesi-Ferretti (1994), Grilli and Milesi-Ferreti (1995) have shown that there is no relation between the degree of financial openness and economic growth. Rodrik (1998) does not find any correlation of capital account liberalization and growth in his study. Kraay (1998), too, reveals no relation between degree of capital account liberalization and growth. Edwards (2001) highlighted that the degree of capital account openness has no impact on growth in developing countries. Stiglitz (2000) in his study found various theoretical and empirical weaknesses in favor of capital account liberalization, where capital account openness recommends various types of capital controls in order to rescue from financial crisis. According to Edison et al. (2002), the effect of capital account opening or stock market liberalization on economic growth is mixed. The study found that capital account openness and growth in developed countries is positively related. All these studies are briefly examined in the following section:

Kraay, A. (1998) has basically focused on two things such as (1) removal of capital control will make country more vulnerable (2) benefit of capital account liberalization depends on strong domestic financial system by taking the combination of cross-sectional and event study analysis covering the large sample of developed as well as developing nations. He has stressed on the macroeconomic benefits of capital account liberalization in medium- to long run on growth, investment and inflation. At first indicator i.e. the control on capital account measure he has taken IMF (AREAR) report, second indicator as measure of financial openness developed by Quinn (1997), and third indicator i.e. actual capital inflows and outflows of an outcome as financial openness and trade volume as trade openness. In cross sectional analysis he regress each variable of interest on each of the financial openness measure in term and set a control variable. The dependent variables are real per capita GDP growth, real per capita GNP growth, gross domestic investment as a fraction of GDP and the logarithm of the average annual CPI inflation rate, all over the period 1985-97. The control variables are logarithm of per capita GDP at PPP, population growth and secondary school enrollment rates and set regional dummies. He has applied OLS for regression and financial openness using its own average value over the previous ten years 1975-84 as an instrument. The result of cross sectional evidence shows that capital account openness does not have much statistically significant effect on growth, investment and inflation. There is little evidence on higher volatility of capital flow on financially open economy and also little evidence on strong financial institution have higher positive effect of liberalization.

Rodrik D. (1998) has highly emphasized on the IMF's major mission i.e. the liberalization of capital account. The result has shown that there is no significant relationship between capital account liberalization and growth. For analysis purpose 100 industrial and developing countries data have taken for the year 1975-89. He has regressed the growth of GDP per capita on capital account liberalization, controlling for initial income per capita, secondary school enrolment, quality of governments and regional dummy variables for East Asia, Latin America, and Sub-

Sahara Africa and he has come to the conclusion that there is no correlation between capital account openness and growth rate of GDP per capita. So it has no evident that capital account openness will bring benefit, but that the costs have revealed in the shape of periodic emerging markets crises.

Edison, H.J. et al. (2002) have utilized new type of technique and new data to find out the effect of international financial integration on economic growth. He has taken broad data set for this study. The new IFI indicators are based on Lane and Milesi-Ferretti (2002) measures of the stock of foreign assets and liabilities. For IFI data of IMF-restriction, Quinn measure, stock of capital flows, flows of capital, stock of capital inflows, inflows of capital has been taken and per capita GDP for growth. The controls variables are initial income (Logarithm of real per capita GDP in the initial year of the period under consideration), initial schooling (logarithm of average year of schooling of the initial year of period under consideration), private credit (logarithm of credit to private the private sector by deposit money banks and other financial institutions as a share of GDP), stock activities (equal to logarithm of the total value of domestic stock transactions on domestic exchanges as share of GDP), inflation growth rate from consumer price index, government balance equals to government's fiscal balance divided by GDP, law & order and corruption. For estimation initially they have applied simple OLS regressions with one year per country over the period 1980-2000. Secondly two- stage least squares instrumental variable estimator within the purely cross-country context over 1980-2000 periods. Thirdly they have used generalized method of moments (GMM), dynamic panel procedure to control for potential biases with the purely cross-sectional estimators. They have studied over 57 nations over the period 1980-2000. The economic results have indicated that null hypothesis (no statistical relationship between IFI and economic growth) cannot be strongly rejected. That means IFI is not associated with economic growth. In fact IFI have positive link with real per capita GDP, educational attainment, banking sector development, stock market development, the law and order tradition of the country and government integrity i.e. low level of corruption. Therefore prosperous countries are having open economies.

Eichengreen, B. et al. (2009) have analyzed the effect of capital account liberalization on industry growth by examining the cross country wise. They have applied baseline estimation model where value added of industry external financial dependence (FE), financial development (FD), capital account liberalization (LIB) as variable and crisis (CR) as dummy variable have taken. They have sourced the data from different sources such as: for calculating the growth value added data have collected from UNIDO's industrial statistics data base (2006), CPI data from IMF, EFD data from Rajan & Zingales worlds cope database, FD from international financial statistics, IMF, LIB de jure from Chinn & Ito (2006) & IMF, LIB de facto from Lane & Milesi-Ferrettis (2007), banking crisis from Hanohan & Laeven (2005) data base, currency crisis from Glick Hutchison data base. They have found that capital account openness (CAO) has positive effect on the financially dependent industries but the effect might eliminated by crises. So countries which avoid crises have benefited from CAC. Therefore countries must reach certain threshold condition that is economic and institutional development before expect benefit from capital account liberalization (CAL).

2.3. Critical Analysis of Review in Relationship between Capital Account Openness and Economic Growth:

In this section we will critically analyze the different studies on the relationship between the degree of financial openness and economic growth. In the below Table: 2.1 we have mentioned the studies which have reached a negative conclusion or a mixed conclusion according to the relationship between the two variables. The result of these studies differs due to many reasons such as : firstly, the variation in sample i.e. the sample size vary in each individual study. Additionally, the samples may be taken exclusively from either developed or developing countries, or may contain a mix of the two. Secondly, the observation periods don't coincide. Thirdly, other variables which have been used to analyze the influence of financial openness on growth may be different in different studies. Finally, there are differences in econometric method application.

A majority of studies have also emphasized that these divergent results occur due to differences in factor productivity, which in turn may be explained by factors such as the quality of social infrastructure such as governance, compliance with the principles of law and private ownership. In addition, most of the studies involving developing countries have, in fact, neglected the impact of other factors that feature in the development of poor countries which are highly sensitive to internal and external shocks (such as drought, socio-political unrest, volatility of world commodity prices). These factors, however, are admittedly difficult to identify and factor into an empirical analysis.

Table.2. 1 Classification of Selected Studies on Relationship between Financial Integration and Growth:

Study	Impact on Growth	Study	Impact on Growth
Quinn (1997)	Positive	Alesina, Grill & Milesi-Ferretti (1994	No Impact
Klein and Olivei (2000)	Positive (for industrial countries)	Grill & Milesi-Ferretti (1995)	No Impact
Edwards (2000)	Positive	Rodrik (1998)	No Impact
		Kraay (1998)	No Impact or Mixed
Quinn and Toyoda (2008)	Positive	Klein and Olivei (2000)	No Impact (for developing countries)
Shahbaz , M et al. (2008)	Positive (long run)	Edwards (2000)	No Impact (for developing countries)
Saidi , H (2010)	Positive (OECD-countries)	Saidi , H (2010)	Negative (for non-OECD countries)
Bakeart et al. (2005,2011)	Positive		
Kennedy, A. (2013)	positive (developed countries)		
Levine, R. (2001)	Positive		
Estrada, G. et al. (2015)	Positive (developing countries)		

2.4. Conclusion:

The literature review indicates that most of the literature has identified a positive impact of capital account openness on economic growth in case of developed/ industrial/ rich countries, while some studies have found no impact of capital account openness on economic growth. There exists some literature which indicates the positive impact of capital account openness for both developed as well as developing countries. Therefore, the conclusion drawn from the review of literature is not entirely consistent on whether capital account openness leads to economic growth or not. The reasons behind the contrasting results have been critically discussed. The subsequent chapters seek to develop a stance on whether or not capital account openness can lead to economic growth.

CHAPTER -III

Analyze the Preconditions of the Tarapore Committee and Current Conditions of Indian Economy

3.0. Background of CAC in India:

The World has encountered several financial and economic crises since the great depression. According to the market oriented economists, capital account openness is the ultimate process of liberalization in developing nations (Gilbert, C.L. et al. 2000)[6]. Before the East Asian crisis, many emerging nations sped up the process of capital account liberalization. Most of the nations thought that liberalization of capital account will result in a positive impact on the economy since the economies of many developed countries have been running smoothly after the implementation of open capital account. India formulated a committee to prepare an outline for capital account liberalization. The committee had suggested a gradualist approach of CAC and recommended a three year time period, at the end of which the country may adopt an open capital account. The speeding up of open capital account process in India depends on how far the country will able to achieve the preconditions suggested by the committee within given time frame. Before all the preconditions could be fulfilled, the 1997 East Asian crisis changed the stance of Indian authorities and the implementation of this policy was put on hold.

In the aftermath of these crises, the Indian economy had been performing well from the year 2000 onwards. In March 2006, Prime Minister Manmohan Singh again brought the issue of the CAC in his speech at the Reserve Bank of India. He proposed that changes in the last few years in the economy make a sense to rethink about the movement on Fuller CAC with transparent framework. So the authority introduced the second Tarapore committee. The second committee guideline prepare for five years time period (i.e. 2006-11). The five year time period has been divided into three phases, 2006-07 (phase I), 2007-09 (phase II), 2009-11 (phase III). The authorities had prepared an arrangement to go for stock taking after each phase before proceeding to the next phase. The targeted date of capital account convertibility was 2011.

According to the Tarapore Committee, "CAC refers to the freedom to convert local financial assets into foreign financial assets and vice-versa. It is associated with changes of ownership in foreign or domestic financial assets and liabilities and embodies the creation and liquidation of

[6] Gilbert, C. L., Irwin, G., & Vines, D. (2000, June). International Financial Architecture, Capital Account Convertibility and Poor Developing Countries. In Overseas Development Institute Seminar, June

claims on, or by, the rest of the World. CAC can be, and is, coexistent with restrictions other than on external payments". There is a variety of literature in favour of open capital account, both in trade and finance, which boost economic growth and welfare. But the tradeoff of risk-benefit of open capital account is still debated by both academics and policy makers. Previously, India obtained fewer restrictions on inflows while maintaining severe restrictions on outflows. After observing the experience of many emerging countries, India has adopted the policy of managing the capital account in case of non-debt flows, discouraging short-term debt flows and maintaining an adequate amount of foreign exchange reserves. So that control of short-term debt capital flows will reduce the volatility. The outflows have been gradually relaxed. Various policies have been implemented in the process of liberalization of the capital account in order to make macroeconomic factors sound.

Fuller capital account convertibility does not indicate zero capital regulation. FCAC is not an end in itself, but it should be considered as a means through which the country will realize the maximum potentiality of its economy at the least cost (Committee report, 2006). Due to high requirement of investment, the current domestic saving has proved insufficient. Hence, foreign capital becomes necessary to meet this requirement. The capital account convertibility has both risks as well as rewards.

Many arguments support capital account liberalization based on the neoclassical model (Stiglitz, 2000). [7]The most certain advantage of open capital account is that capital will transfer from capital rich countries to capital poor countries. According to the neoclassical theory, liberalizing capital account can contribute to the efficiency of international allocation of capital. The flow of capital flows from the capital abundant countries to the developing countries for a higher return of the capital. The cost of capital for developing nations will reduce and enhance the overall welfare of the world (Shen & Yang 2015). [8]Hence open capital account leads to higher output and greater efficiency. Capital account openness will encourage multilateral trading system by enlarging the means through which the country can finance trade and investment (Stanley Fischer)[9]. Financial openness will help to enhance financial and institutional development, efficiency will increase due to competition, new technical knowhow and technology will become

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[7] Stiglitz, J. E. (2000). Capital Market Liberalization Economic Growth And Instability. *World Development , 28* (6), 1075-1086.

[8] Shen, Y. S. Y., & Yang, L. (2015). Does Capital Account Liberalization Affect the Financial Stability: Evidence from China? *Journal of Reviews on Global Economics*, *4*, 152-158.

[9] Fischer, S. (2003). Globalization and its challenges. *American Economic Review*, 1-30

accessible and the country will be able to maintain discipline in macroeconomic policies (Prasad, 2008). [10]According to Dr. Y. V. Reddy (2009) "In India it is recognized that the pace of liberalization of the capital account depends on both domestic factors, especially progress in the financial sector reform and the evolving international financial architecture."

The economic logic of the liberalization of the capital account for a less developed country like India is to increase capital inflows in order to increase GDP and growth while smoothing consumption through international borrowing (Dutt, 2006). Corruption can reduce due to capital account liberalization (Gilbert, C.L. et al 2000).

This section will try to answer the following research questions:

a) What are the drawbacks of open capital account?
b) What is the current progress made by India with regard to the preconditions set by the Tarapore Committee for the movement of capital account convertibility?
c) What lessons the Emerging Market Economies have given for capital account convertibility?

This section analyses whether India is ready for capital account openness or not. First we will start this section by putting forward the drawbacks involved in the movement of capital account convertibility. In the second part, we will take into consideration the preconditions of Tarapore committee and compare them to the current macroeconomic conditions. Our next discussion will be based on the experiences of other developing countries who have implemented capital account convertibility in their economy.

3.1. Drawbacks of Capital Account Convertibility:

In spite of the various advantages obtainable through capital account convertibility, there are various limitations involved in open capital account. Capital inflows are voluminous when, the country's macroeconomic fundamentals are sound, and however, under performed macroeconomic factors lead to huge capital outflows. From the historical point of view, many countries have come across crises due to high capital outflows. Capital account liberalization could do a lot of damage to the economy of developing countries (Gilbert, C.L. et al 2000). The emerging nations are unable to avoid crises due to their premature financial system and weak balance of payment. So capital control policy has been implemented by many nations which have weak balance of payment. Capital controls help to fix the interest rate and exchange rate in order

[10] Prasad, E. S. (2008). A pragmatic approach to capital account liberalization. *National Bureau of Economic Research.* ((No. w14051).

to maintain internal and external balance. The concept of impossible trinity [11]is also justified for the countries that have fixed exchange rate or managed exchange rate (Jadhav).

Developing countries are the victims of crises due to their weak macro economic factors. Capital flows are sensitive to macroeconomic conditions. Any deterioration in fiscal conditions, inflation management, balance of payments, or any other macroeconomic shock may cause a reversal of capital flows (G. Padmanabham).

Open capital account might create misallocation of capital inflows. The capital inflows may invest in low-quality domestic investments, like investments in the stock markets or real estates, however less investment on establishment of industries and factories, which might lead to capacity creation and utilization, and increased level of employment. But there might be a chance to reduce the capacity of the country to raise export. Hence this will cause external imbalances.

An open capital account might reduce the domestic investment capacity of a capital scarce developing country by giving scope to the export of the domestic savings (the rich can convert their saving into dollars or pounds in foreign banks or keep assets in foreign countries). There is also the possibility of transferring domestic savings as well as foreign investments from emerging nations due to the risk of crisis.

Access of foreign banks into the emerging economy creates high competition among all banks, domestic as well as foreign. Foreign banks, being more efficient, attract the most credit worthy borrowers and depositors. This might create a problem for the farmers and the small scale industrialists, who are not considered credit worthy by these banks. Domestic banks might deny lending credit to these sectors due to high competition. Interest rates are likely to rise due to high demand at a more competitive level.

Capital account openness leads to fear of a high amount of short term speculative capital flows which are extremely volatile by nature and do not encourage much growth in the country (Stiglitz 2000). This process of the international capital flows moving from country to country for high speculative returns gives birth to economic crisis in various developing countries. Hence, short term capital is known as hot money. Full capital account convertibility creates a more open economy and high volatility due to heavy hot money flows.

[11] It is impossible to pursue stable foreign exchange rate, free capital movement i.e. absence of capital control and independence monetary policy at a same time which is known as "Impossible Trinity".

The sole reason for the East Asian crisis is open capital account. These countries were not well prepared for the open capital account and they allowed the high volume of short-term capital flows. According to Joseph Stiglitz rapid financial and capital account liberalization is the only reason for the crisis (Stiglitz 2002). There are very few facts that support capital account openness leading to economic growth (Rodrik, 1998).

The decision to convert to capital account convertibility is not easy to make. The economy will integrate with World economy, which will bring more fluctuation and business cycles. Hence, careful thought is necessary to avoid the situation that Argentina faced in the early 80's or that befell the Asian economies in 1997-98. In India, the committee has formulated preconditions which should be satisfied before moving to an open capital account. The possibility of a crisis cannot be ruled out entirely, but we may attempt to avoid it.

3.2. Preconditions of Tarapore Committee:

3.2.1. Introduction:

India follows the gradualist approach of capital account liberalization, as defined by two reports of the Tarapore Committee, i.e. I & II which have been submitted in 1997 & 2006 respectively. After observing the experience of many emerging countries, India has adopted the policy of managing the capital account in case of non-debt flows, discouraging short-term debt flows and maintaining an adequate amount of foreign exchange reserves. Maintaining control over short-term debt capital flows will reduce the volatility. Gradually, outflows have been relaxed. Various policies have been implemented in the process of liberalization of the capital account in order to make macroeconomic factors more sound.

In this section, we will focus on analyzing briefly the country's gradual process from capital control to a certain degree of liberalization. As recommended by the committee, a certain degree of stability and soundness is required in the process of capital liberalization. Hence, a glance at the history of capital controls and its liberalization process of India might prove useful in examining the macro-economic soundness of the economy.

3.2.2. History of Capital Controls:

Capital controls play an important role in bringing stability to an emerging nation's economy. India was following the capital control policy in its economic strategy prior to 1991. In late 1950s capital controls were first introduced in India. These became severe in a couple of decades; the mid-seventies experienced a relaxation in the control on external borrowing, including short-term borrowing and this one-sided relaxation on control lead to an external crisis in 1991. After this external crisis, India started liberalizing its economy. Industrial licensing was abolished and import quotas and tariffs were lowered. Additionally, the authorities reduced restrictions on foreign investment flows, for both FDI as well as portfolio investments. By the end of this decade, current account transactions were relaxed completely. However, control on debt-creating inflows was retained, i.e. on external borrowings as well as on resident investments abroad. In the process, restrictions on the factors under capital account were also gradually liberalized. The factors concerning the capital account side that we will discuss are as follows:

3.2.2.1. Foreign Direct Investment:

With the Foreign Exchange Regulation Act (FERA), of 1973 the government permitted 40 per cent foreign direct investment in Indian companies without prior approval. It also largely abolished the industrial license policy in 1991, excepting only a few industries. Restriction on FDI was very severe before 1991, very meager inflows were allowed at this point. The FDI was allowed only on a case by case basis. Since then, the rule for FDI has been liberalized and more & more sectors are opening up for FDI investment. As India is considered as one of the fastest growing economies in the World, it features in the top three attractive destinations for inbound investment. The regulatory scenario of India is becoming flexible in order to make foreign investment friendly since 1991. After the 1991 reforms, 51 percent of FDI support allowed in 35 big priority industries as against 40 per cent of total equity investment. The industries that need more shares are discussed and observed by the Foreign Investment Promotion Board. However, this system does not run as smoothly as expected because of bureaucratic problems. Even so, it is more liberal than before. In 1996, the list of open industries was increased along with the foreign limit, which was raised to 74 per cent in many cases. Simultaneously, government permission was deemed unnecessary for FDI for many firms. NRIs/OCBs (overseas corporate bodies) were allowed to invest up to 100 per cent in the priority sector industries with repatriability [12]of capital and income. NRI investment up to 100 per cent of equity was allowed in real-estate, hospitals, EOUs, sick industries, hotels and tourism related industries. Foreign citizens of Indian origin were allowed to buy house property without the permission of the RBI. Foreign companies were permitted to use their trade marks on domestic sales from May 14, 1992. From September 15, 1992, foreign investors, rather than the RBI, were free to determine the prices of equity for disinvestment at the market rate. In 1997 foreign investment in non-banking financial companies (NBFCs) providing 15 categories of financial services were

[12] The investor can move an asset from a foreign country to an investor's home country is known as repatriability.

announced. Further in 1998-99, in an attempt to encourage FDI, permission was granted for foreign equity participation up to 100 per cent under automatic routes for the projects of electricity generation, transmission and distribution as also roads and highways, port and harbours, and vehicular tunnels and bridges, with condition of equity not exceeding Rs. 1,500 crore.

In the current policy measures, a lot has been changed with regard to FDI restriction caps. There is 100 per cent FDI allowed in medical devices and also the FDI cap has increased in insurance and sub-activities from 26 per cent to 49 per cent. In the pension sector, FDI up to 49 per cent is allowed. The limit of FDI has been increased from 26 per cent to 49 per cent under government approval route. Foreign portfolio investment up to 24 per cent is allowed under automatic route. If FDI is beyond 49 per cent then it will be allowed on a case to case basis under the approval of Cabinet Committee on Security. The construction, operation and maintenance of specified activities on railway sector have been 100 per cent allowed for FDI in automatic route. In order to encourage investment in affordable housing, the investors contributing 30 per cent of the total project cost for low cost affordable housing are being exempted from minimum area and capitalization norms. Moreover, investment by NRIs under schedule 4 of FEMA regulations is considered to be domestic investment at par with investment by residents. 100 per cent FDI is also permitted in White label ATM [13]operations. In India, if investment is more than 49 per cent then it will be approved by Cabinet Committee on Security, if foreign investment is more than INR 30 billion then it will be approved by Cabinet Committee on Economic Affairs. Furthermore, repatriation on dividends is possible without any restriction. The central government has various incentive programs in order to boost investment. There is incentive for the units set up in SEZ, NIMZ etc. as well as for EOUs. Export incentives such as duty drawback, duty exemption & remission scheme, focus product and market scheme etc. have also been offered. Area based incentives, such as a unit set up in the North East region; Jammu & Kashmir, Himachal Pradesh, and Uttarakhand have been initiated. Sector specific incentives like M-SLPS in electronics also exist. As there is no specific incentive for all states, different states have different types of incentive based on amount of investment, project location, employment generation etc. However, there are broad categories of incentive like stamp duty exemption for land acquisition, refund or exemption of value added tax, exemption from the payment of electricity duty, and so on. NRI investments such as construction development,

[13] The white Label ATM is owned and operated by non-Bank entities which are located in non-traditional places. Any customer from ant bank can withdraw money, but need to pay fee for the services. This ATM will not show any logo of any particular bank.

ground handling & air transport services, are anticipated. NRI investment on non repatriable basis, FDI from NEPAL & BHUTAN will be allowed in Indian rupees. The sectoral caps in FDI inflows to India, according to the May 2015 status, have been mentioned in (Annex-1).

3.2.2.2. Portfolio Investment:

According to committee suggestions, India ought to encourage non-debt creating flows and reduces the dependency on debt creating flows. A large number of steps have been taken since 1991 to promote these types of flows into the country. Although registered Foreign Institutional Investors were permitted to invest in India on equity and debt markets from 1992, individuals were not allowed to do so. After the reforms, NRI and overseas corporate bodies (OCBs) have been allowed to have 1 per cent individually and 5 per cent jointly of the paid up capital of Indian companies. This ceiling has been raised to 24 per cent in 1992 and 40 per cent in 1998. The individual FII limit was increased from 5 per cent to 10 per cent in June 1998 and the ceiling of single FII was separated from that of a single NRI/PIO/OCB. The limit has been increasing from time to time. The portfolio investment holding of less than 5 per cent of a company's equity capital did not have voting rights. The total limit for all FIIs was increased to 30 per cent in April 4, 1997; 40 per cent in March 1, 2000; and 49 per cent in March 8, 2001. In the year 1997, Foreign Institutional Investors were also allowed to invest on government bonds. Currently the inflows from FII investments into the country have increased. The liberalization process is to encourage FII investment in India. In October 2007, according to SEBI regulation 2004 only regulated entities could invest in India through participatory note route in order to reduce speculative flows. FIIs and sub-accounts were also not allowed to issue/renew participatory notes. The FII relaxation in India has taken place through the following process: (i) relaxation of investment limits for FIIs (ii) relaxation of eligibility conditions; and (iii) liberalization of investment instruments accessible for FIIs. But it is important to note that FII investment registration may come under stricter regulation in case the economic situation demands capital control.

Annex-1

Sectoral caps in FDI Inflows to India: status on May 12, 2015

(A)	**FDI Prohibited**
	(I) Atomic Energy (II) Lottery Business Including Government/Private Lottery, Online Lotteries Etc. (III) Gambling And Betting Including Casinos Etc. (IV) Business Chit Funds (V) Nidhi Company (VI) Agricultural (Excluding Floriculture, Horticulture, Development Of Seeds, Animal Husbandry, Pisciculture & Cultivation of Vegetable, Mushrooms Etc. Under Controlled Conditions and Services Related to Agro And Allied Sectors) and Plantations Activities (Other than Tea Plantations) (VII) Housing And Real Estate Business (Except Development of Townships. Construction of Residential/ Commercial Premises, Roads or Bridges) (VIII)Trading In Transferable Development Rights (TDRS) (IX) Manufacture of Cigars, Cheroots, Cigarillos and Cigarettes, of Tobacco or of Tobacco Substitutes.
(B)	**FDI permitted up to 20%**
	(i) Banking-public sector subject to banking companies-Government Route
(C)	**FDI permitted up to 26%**
	(i) Insurance- Automatic Route (ii) Print media (publishing of newspaper& periodical, Indian editions of foreign magazines)-Government Route (iii) Broadcasting -FM radio- Government Route -Up-linking of news & current affairs TV channels- Government Route
(D)	**FDI permitted up to 49%**
	(i) Power market (FDI+FII/FPI)- Automatic Route (ii) Insurance (FDI+FPI(FII,QFI)+NRI+FVCI+DR)- up to 26% Automatic Route and Government Route beyond 26% and up to 49% (iii) Infrastructure company in securities markets- Automatic Route

	(iv) Commodity exchange(FDI+FII/FPI)- Automatic Route (v) Banking –private sector- Automatic Route (vi) Asset reconstruction companies- Automatic Route (vii) Private security agencies- Government Route (viii) Air transport services (scheduled)-49% FDI(100% for NRI)- Automatic Route (ix) Broadcasting (cable networks , other MSO not undertaking up- gradation network towards digitalization and addressability and local cable operators (LCOs)- Automatic Route (x) Defence – Government Route up to 49% and above 49% to cabinet committee on security on case to case basis (xi) Petroleum & natural gas (petroleum refining by public sector undertakings ,without any disinvestment in existing PSUs)- Automatic Route
(E)	**FDI permitted up to 51%**
	(i) Multi brand retail trading- Government Route
(F)	**FDI permitted up to 74 %**
	(i) Credit information companies (FDI+FII/FPI)-Automatic Route (ii) Banking-private sector (beyond 49% up to 74%)-Government Route (iii) Satellites-establishment and operation- Government Route (iv) Civil aviation(ground handling services)- Automatic Route up to 49% and Government Route beyond 49% and up to 74% (v) Air transport service (Non-Schedule)- 74% FDI(100% for NRI)- Automatic Route up to 49% and Government Route beyond 49% up to 74 % (vi) Broadcasting (Teleports, DTH, mobile TV, HITS, cable networks (MSOs operatic under national or state or district level and undertaking up- gradation networks towards digitalization and addressability)- Automatic Route up to 49 % and Government Route beyond 49% and up to 74%
(G)	**FDI permitted up to 100%**

	(i) Pharmaceuticals Greenfield- Automatic Route (ii) Pharmaceuticals Brownfield- Government Route (iii) Non-banking financial companies (NBFC)- Automatic Route (iv) Asset reconstruction company(beyond 49%)- Government Route (v) Railway infrastructure- Automatic Route (vi) Single brand retail trading (beyond 49%)- Government Route and up to 49 %- Automatic Route (vii) E-commerce activities- Automatic Route (viii) Trading (cash & carry wholesale trading/ wholesale trading)- Automatic Route (ix) Telecom service- Automatic Route up to 49% & Government Route beyond 49% (x) Industrial parks(new & existing)- Automatic Route (xi) Construction development: townships, housing, buildup infrastructure- automatic route (xii) Courier services-Automatic Route (xiii) Civil aviation sector(maintenance and repair organizations; flying training institutes; and technical training institutions)- Automatic Route (xiv) Airports (Greenfield projects)-Automatic Route (xv) Airports (existing projects)- Automatic Route up to 74% and Government Route beyond 74% (xvi) Helicopter services- Automatic Route (xvii) Print media (publishing/printing of scientific and technical magazines, journal etc.- Government Route (xviii) Broadcasting (non-NEWS & Current Affairs, TV Channels- Government Route (xix) Mining and exploration of metal and non-metal ores, coal & lignite- Automatic Route (xx)Mining and mineral separation of titanium bearing minerals and ores- Government Route (xxi) Tea plantation- Government Route (xxii) Agriculture and animal husbandry- Automatic Route (xxiii) Petroleum & natural gas (exploration activities of oil and natural gas fields, infrastructure)- Automatic Route

Sources: Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India, Reserve Bank of India.

3.2.2.3 External Commercial Borrowings (ECBs):

The performance of capital account management depends on policies on External commercial Borrowings. The authority has customized the holdup limit for ECBs to avoid crisis. Because, 1991 BoP crisis occurred due to the dramatic increase in ECBs. In March 1997 various restrictions on ECBs was removed. The authority enlarges borrowing limit for individual. External Commercial Borrowings is an important source of additional funds. These loans have a minimum average maturity period of 3 years. External Commercial Borrowings is a source for Indian corporations and PSUs to access foreign money. Through ECBs the company gets supplementary source of funds with a low interest rate because interest rates are based on the international financial market rate. Recently, Indian companies are showing more interest in adopting ECBs as their additional source of funds, as the limitations in the Indian debt markets have short term maturity periods and high rates of interest. The rate of interest is fixed, the returns are also fixed. In case of ECBs, ownership cannot be diluted. ECBs also allow a rise in funds due to easy availability. However the authority has disallowed to increase short-term debt.

The Reserve Bank of India issued Notification No. FEMA 3/2000-RB dated May 03, 2000 regarding Foreign Exchange Management (borrowing or lending in foreign exchange) regulations that govern the External Commercial Borrowings and Trade Credits. ECBs are governed by clause (d) of sub-section 3 of section 6 of the Foreign Exchange Management Act, 1999 (FEMA), as per notification no. FEMA 3/2000-RB dated May 03, 2000, as amended from time to time and the Master Circular on ECB issued from time to time.

External Commercial Borrowings can be accessed via two routes: automatic route and approval route (requiring prior approval of RBI). Investments in industrial and infrastructure sectors are allowed under the automatic route while sectors such as export & import, follow the approval route. According to the first Tarapore committee report, borrowing from abroad should not exceed US$ 250,000 and interest on these loans must not exceed LIBOR.

ECBs under the automatic route have a specified amount and maturity that differs in different sectors. While all corporate service sectors such as hotel, hospital and software, can have ECB up to USD 200 million or its equivalent in one financial year, other corporate sectors are limited to USD 750 million or its equivalent. NGOs engaging in micro finance activities and Micro Finance Institutions are allowed to ECBs up to USD 10 million or its equivalent during the financial year. NBFC-IFC can avail of aid through ECB for up to 75 per cent of their own funds, subject to maximum of USD 200 million or its equivalent per financial year with a minimum five years of maturity, if they hedge the currency risk exposure in full. SIDBI can avail of ECB to the extent of 50 per cent of their own fund subject to USD 500 million per financial year. If the ECB limit is up to USD 20 million or its equivalent in a financial year, ECBs are allowed with minimum average maturity of three years. ECBs above USD 20 million or equivalent and up to USD 750 million or its equivalent are allowed with a minimum average maturity period of five years. ECBs up to USD 20 million or equivalent can have call/put option provided the minimum average maturity of three years is met before exercising call/put option. All eligible borrowers can avail of ECBs designated in INR from foreign equity holders as per the available ECB guidelines. NGO engaged in macro finance activities can avail of ECBs designated in INR, from overseas organizations and individuals in accordance with the existing guidelines.

The average maturity of all-in-cost ceilings over a 6 month LIBOR of 3 years up to 5 years has 350 basis points, while maturity period of 6 month LIBOR more than 5 years has 500 basis points. The repayment of ECB up to USD 500 million is allowed by AD Banks without approval of RBI, subject to the agreement of minimum average maturity.

The infrastructure sector has an overall ceiling of $ 20 billion and ECBs are allowed up to a maximum period of 5 years for importing capital goods, as decided by RBI in 2012. The ECB policy has undergone certain modifications/ liberalization in the past few years and is regularly reviewed by the government in consultation with the RBI. Factors of macroeconomic conditions, sectoral requirements, global developments, etc. are taken into consideration while drafting these reviews. The government has modified its policy on ECBs according to the funding requirements of the corporate sector, developers of integrated townships, special economic zones and non-banking financial companies engaged in infrastructure development. ECBs cannot be used for investment in capital market, real-estate sector and proceeds from ECBs are not to be used for obtaining land.

All-in-cost includes rate of interest, other fees, and all expenses in foreign currency except commitment fees, pre-payment fee and fees payable in Indian rupees. The payment of withholding tax in Indian rupees is excluded for calculating the all-in-cost. The all-in-cost ceilings with respect to both the automatic as well as approval routes are as under:

Average Maturity Period	All-in-Cost Ceiling Over 6 months LIBOR
Three Years and Up To Five Years	350 bps
More Than Five Years	500 bps

All-in-cost ceilings average maturity all-in-cost ceiling over period 6 month LIBOR 3 years and up to 5 years 350 basis points and year more than 5 years 500 basis points.

3.2.2.4. Resident Outflows:

There was strict restriction on investment in abroad by resident individuals and institutions both for investment as well as current transactions such as foreign travel. Because liberal foreign transaction by resident individual or institutions lead to black market of various kinds e.g. gold smuggling in the seventies and eighties, the "hawala"[14] system since the eighties and so on. In India restriction on resident became tighter when 1991 financial crisis occurred. Because when the outflows of foreign exchange will be high, it will disturb the rupee stability. Gradually the authorities started to liberalize the available volume of controls. The Liberalized remittance scheme had been declared by RBI under FEMA Act 1999 in February 2004, the main motto of this scheme is to provide foreign exchange facility to resident Individuals in a more liberalized and simplified way. Under the liberalized remittance scheme, all resident individuals, including minors, can remit without any restriction up to USD 125,000 per financial year (April-March) for any legitimate transaction like current as well as capital or both type of transaction combine. Any resident individual can obtain shares or debt instruments or other type of asset like detain property outside India without prior agreement of the Reserve Bank. There is facility for individual to open, maintain and obtain foreign currency bank account outside India in order to run transaction authorized under this scheme. The PAN number is compulsory for making payment under this scheme. In this scheme payment can be made through freely convertible foreign currency which will be equivalent to USD 125,000 in a financial year. But many kinds of restriction will be imposed on the outflow of capital when the rupee will fall. A resident individual can invest in units of mutual funds, venture funds, unrelated debt securities, promissory notes etc. under this scheme and resident can do invest all these securities by opening bank account in abroad under the scheme. According to the available FEMA services LRS can also be utilized to obtain both listed and non listed shares of an overseas company. In mid-2013 CAD was high and there might be a situation of rupee run. So the LRS limit was reduced to $ 75,000. CAD was 4.7 per cent of GDP in 2013 which was declined to 0.2 per cent of CAD at Q4 of FY14. It has been decided vide A.P. (DIR series) circular no- 138 dated June 3, 2014, to increase the limit to USD 125,000 per financial year (April-March) from USD 75,000. So under this scheme resident individual can obtain immovable property outside India.

[14] Hawala- The term "Hawala" means money transfer. It is an informal channel of fund transfer from one location to another through service providers who are known as hawaladars. Historically this system was working in China and also in South Asia and Middle East. Basically the main demerit of hawala system is that it boosts illegal financing and terrorist activities.

3.2.2.5. NRI Deposits:

India was having very severely controlled for non-resident deposits. In 1980s non-resident deposits were allowed firstly in India. At that time two types of non-resident deposit schemes were introduced in India such as: deposits denominated in Indian rupees, which had no exchange guarantee facility and other is foreign currency denominated deposits. Rupee-denominated deposits were of two kinds NR (E) RA & NR (NR) RD. Non-resident external rupee account (NRERA) scheme was introduced in 1970 and it was open only for non-residents of Indian origin and overseas corporate bodies. Whereas the other scheme NR (NR) RD (non-resident, non-repatriable rupee deposit) was introduced in June 1992 and it was open for all non-residents, but only interest payment were allowed for repatriation. Gradually various kinds of foreign currency denominated non-resident deposit schemes were introduced. In 1975 foreign currency non-resident account (FCNR (A)) scheme was introduced and only non-residents of Indian origin & OCBs can access this scheme. By this scheme foreign exchange risk was created by RBI and the government of India. So this scheme was removed from August 1994. In May 1993 FCNR (B) (foreign currency non-resident (banks)) was introduced due to foreign exchange risk occurred by banks. The 1990-91 crisis of India brought in to Foreign Currency (Banks & Others) Deposit (FC (B&O) D) scheme into the system. This scheme was allowed to NRIs/OCBs, Foreign citizens, banks and other institutions. Under this scheme the investor cannot withdraw before maturity. In July 1993 this scheme was removed from system. Another scheme i.e. foreign currency (ordinary non-repatriable) scheme was also withdrawn due to not getting positive response from investors. From April 1999 an account was started to simplify the procedure for financial transactions.

From 1991 onwards there has been great changes occurred in form of inflows from NRI deposits. Banks were permitted to have differential rate of interest on these deposits. There have been step taken for SLR and CRR of such deposits. Gradually non-resident deposits become an important source of inflows.

So from the above discussion, we have an idea that capital controls are more liberal now than in two generations. Basically restrictions are no more for current account transaction and for foreign investment. The external borrowing, outflows of resident also now easier than in nineties. But the question is should the authorities take the last step, i.e. full capital account convertibility and get free from the framework altogether?

3.2.3 The Impossible Trinity:

From the literature we have observed that there are many studies which are in favor of capital account convertibility or open capital account. The theoretical backgrounds of open capital accounts indicate that open capital account encourage foreign investment & transfer technology, productive use of capital, risk sharing of capital and so on. But it's not that easy as it seems. It is quite difficult to broadly generalize the theoretical/practical results into specific case. In case of India, its capital account is not fully close and not fully opens one; the external account is significantly liberalized. Now India is formulating the costs & benefits trade- off of removing the remaining controls. But the real fact is that India did not suffer much at the time of crisis like 1997, 2008 due to its capital control policy. The impossible Trinity will give a frame work to evaluate the risk from open capital accounts.

The impossible trinity implies that it is not possible to have free capital flows, an independent monetary policy and a fixed exchange rate altogether. The authorities will have to choose between independent monetary policy (interest rate) and control over the exchange rate after removing capital controls. This might lead to severe change in policy framework. India follows an exchange rate policy based on targeting the Real Effective Exchange Rate. The domestic interest rate and liquidity are managed to target inflation, the government's borrowing needs and general financial conditions.

After overview the external or internal economic shock in post-convertibility world, the authorities would find that monetary policy can be implemented according to the macroeconomic needs of the rest of the world. But until and unless the deficit of country will reduce, fiscal policy could not do anything for the loss of monetary policy independence as fiscal resources are connected to each other. The free capital movement can worsen the fiscal situation in various ways such as once interest rate will rise it creates burden on public debt service then expenditure will reduce which lead to economic slowdown. This slow growing economy will generate less tax revenues and government expenditure cannot be able to meet due to illiquidity of banking system by capital outflows. So in this situation capital control will help the economy by giving extra degree of freedom by restricting capital outflows. At the time of Asian crisis of 1997, Malaysia imposed capital control in order to gain extra degree of policy freedom.

3.2.4. Tarapore Committee on Capital Account Convertibility:

Indian authorities have well known idea about impossible trinity and this is the reason they have followed gradualist approach for removing capital controls. Coming to our issue the Reserve Bank of India appointed committee under chairmanship of S.S Tarapore to prepare a road map towards full capital account convertibility. This task has completed and delivered its report at the end of July 2006. The objectives of FCAC in this context are (i) to facilitate economic growth through higher investment by minimizing the cost of both equity and debt capital; (ii) to improve the efficiency of the financial sector through greater competition, thereby minimizing intermediation costs and (iii) to provide opportunities for diversification of investments by residents. The first Tarapore committee report was released on June 3, 1997, had recommended three-year timeframe (1997-2000) for complete convertibility, subject to fulfillment of pre-conditions.

The pre-conditions are in below:

- Gross fiscal deficit of the centre as a percentage of GDP should be 3.5 per cent for 1999-2000.
- Inflation rate should be on an average of between 3-5 per cent for 3 years (1997-2000)
- The NPAs of the public sector bank should be brought down to 5 per cent by 2000.
- Average effective CRR for the banking system should be brought down from 9.3 per cent to 3 per cent for 1999-2000.
- A consolidated sinking fund set up to make smooth repayment of borrowings. This is to be financed by raising RBI's profit transfer to the government and disinvestment proceeds.
- Monitoring Exchange Rate band of +/-5.0 per cent around the neutral Real Effective Exchange Rate (REER) with no intervene of RBI.
- Designing external sector policies to increase current receipts (CR) to GDP ratio such that DSR (debt service ratio) comes down to 20% from 25%.

The second committee has proposed a five year timeframe, from 2006-2011, to move towards convertibility in three phases (2007-08, 2008-09 & 2009-11). Unlike earlier report, this report appears to be too lengthy, which has 213 pages. In detail both the report are not same, but both reports (Tarapore I & II) have mentioned about fiscal consolidation and financial sector reforms is necessary for full convertibility of rupee. But it has seen that in spite of meeting some of the pre-conditions like inflation rate, reduction in non-performing assets, there are other crucial precondition like low fiscal and current account deficit should be met. According to committee suggestion gross fiscal deficit must be at 3.5 per cent of gross domestic product before moving for fully convertible. As against this, the gross fiscal deficit in 2012-13 stands at 4.9 per cent and it has come down to 4.6 percent in fiscal year 2013-14 and 4.1 per cent in 2014-15 which is above the recommended rate.

Table.3. 1 Combined (Centre and State) Finances, per cent of GDP:

Item	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Fiscal Deficit	8.3	7.2	6.5	5.1	4	8.3	9.3	6.9	7.6	7.5	6.9
Gross Primary Deficit	2	1.3	1	-0.3	-1.2	3.3	4.5	2.4	3.2	2.9	2.2
Revenue Deficit	5.6	3.5	2.7	1.3	0.2	4.3	5.7	3.2	4.1	3.7	2.9

Note: Data on Combined Government Finances For 2012-13 and 2013-14 Obtain To Revised & Budget Estimates

Source: RBI, Union Budget Document and Economic Advisory Council to the Prime Minister

There are some economist has mentioned that 5-5.5 per cent combine centre & state deficit to GDP is considered as sustainable rate (Sanjeev Sanyal, 2006) . But the current combined fiscal deficit of both centre and states is around 6.9 per cent in 2013-14 and 2014-15 it has came down to 6.03(BE) per cent, but which is still above the sustainable level of deficit (Table- 3.1). The committee has mentioned some recommendations for effective movement of capital account convertibility. Following are the recommendations of Tarapore committee report:

- The tax benefits to NRIs should be removed.
- RBI should get more autonomy power.
- Fiscal Deficit should be reduced to minimum.
- Investment in a particular country should not be allowed. (Like Mauritius).
- The government/ RBI (ownership 55 per cent in SBI) ownership in nationalized banks should be reduced from 51 percent to 33 percent.

- Allowing industrial houses ownership in existing banks or allowing them to open a new banks.
- Removal of 10 per cent voting limit for investment in bank.
- Non-resident corporate should be allowed to invest in Indian capital markets.
- All individual NRIs should be allowed to invest in Indian capital Market.
- Revenue deficit of both center and states should be removed by 2008-09 and 1 per cent revenue surplus should be earned by financial year 2011.
- Increase in External Commercial Borrowing (ECB) ceiling.
- Participatory Notes (PNs) should be banned and existing PNs should be stop within one year.
- The ceiling on government debt should be increased from $ 2 billion to 10 per cent of issuance and $ 1-5 billion to 25 percent of new issuances in a year of corporate debt.
- Maintain sufficient reserves and CAD should be less than 3 per cent of GDP.
- All banks should be classified on Companies Act.

In the Table-3.2 and Table-3.3 we have mentioned about the pre-conditions of Tarapore committee and the change of propose by Tarapore committee-II.

Table.3. 2 Pre- Conditions and Actual Status:

SL.NO.	Items (%)	1997(A)	2000(T)	2000(A)	2006
1.	Center's gross fiscal deficit to GDP	4.1	3.5	5.4	4.1
2.	WPI Inflation (Average)	4.6	3-5	4.5	5.01
3	Gross NPAs of Banking Sector	15.7	5.0	12.7	5.25
4.	Cash Reserve Ratio (CRR)	9.3	3	9-10.5	5.0
5.	Debt-Servicing Ratio(DSR)	25	20	17.1	10.2
6.	Current Account Deficit (CAD)	1.6	-	-	4.5

Table.3. 3 Proposed Changes by the Tarapore Committee:

Investment Relaxation	Phase-I 2006-07	Phase-II 2007-09	Phase-III 2009-11
External Commercial Borrowing	Status quo on ECB limit of $ 18 billion	Gradual increase, But automatic limit To be raised from $500 million to $750 million	Gradual increase, but Limit to be raised to $ 1 billion per financial Year
Resident individual's overseas investment	$25,000 limit should be hiked to $50,000 per calendar year	Raised to $1,00,000	Raised to $ 2,00,000
MFs overseas Investment	$2 billion investment limit to be raised to $3 billion	Further raised to $ 4 Billion	Further raised to $ 5 billion
FII investment	Fresh participatory notes Should be banned	Ban to continue	Ban to continue
FIIs' debt investment	G-Sec investment limit of $2 billion to be modified as6% of gross borrowing	8 per cent of total gross borrowing	10 per cent of gross Borrowing
JVs/ Wholly-owned Subsidiary abroad Investment	200 per cent of net worth limit should be raised to 250 percent	Further raised to 300 Per cent of net worth	Further raised to 400 Per cent

Sources: RBI

The committee has focused mainly on more freedom should be given to the three stakeholders such as: resident individual, domestic companies and foreign investors in this process of open capital account. Following are the concomitants to the movement of Capital Account Convertibility.

3.2.4.1. Concomitants for Capital Account Convertibility Movement:

3.2.4.1.1. Macroeconomic Conditions:

Economic disturbance can occur due to weak functioning of macroeconomic variables. The macroeconomic scenario of a country can be judge through three sources such as external account, public finances and the financial system of the country. The most important thing is that all these three are inter-related to each other. The problem in one will cause a problem in another area e.g. fiscal over spending will lead to external indebtedness.

Since the 1991 crisis the external vulnerability condition of India has reduced drastically. Because various kind of policies have been implemented to protect the country from crisis. The focal point of all kind of policies is to maintain economic soundness and reduce vulnerability. This section will evaluate all the macroeconomic items and its ongoing performance.

3.2.4.1.2. Fiscal Consolidation:

The central target of fiscal consolidation is to maintain financial discipline by reducing fiscal & revenue deficit. The government of India has adopted Fiscal Responsibility and Budgetary Management (FRBM) Acts in 2003 to achieve macro discipline. The rule of FRBM Act was disclosed in 2004. The central idea of this policy is to curtail fiscal and revenue deficits. The objective of FRBMA was to clear away revenue deficit by 31 March 2008. Then country will capable to have sufficient amount of surplus. Meanwhile the time limit of removal of revenue deficit had extended to 31 March 2009 by central government. The twelfth finance commission had advocated that revenue deficits of the states should be removed and fiscal deficit should be decreased to 3 percent of GDP. As a result of 2007 international financial crisis the targeted limit of FRBM Act had been postponed. In 2009 the target was terminated. The economy gradually started off recovery in 2011. The Economic Advisory Council recommended to the government of India for beholding the provisions of FRBM Act (i.e. 3 per cent fiscal deficit, total debt should be 9 per cent of GDP).The post FRBM Act former to global financial crisis, had improved significantly. The fiscal consolidation was accomplished, fiscal deficit of the centre declined rapidly to 2.5 per cent of GDP in 2007-08 which was below the target of 3 per cent set in FRBM Acts (Table-3.4).

Table.3. 4 Fiscal Position of the Centre (per cent to GDP):

Item	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Fiscal Deficit (GFD)	4.3	3.9	4	3.3	2.5	6	6.5	4.8	5.7	4.9	4.6
Gross Primary Deficit	0	0	0.4	-0.2	-0.9	2.6	3.2	1.8	2.7	1.8	1.3
Revenue Deficit	3.5	2.4	2.5	1.9	1.1	4.5	5.2	3.2	4.4	3.6	3.3
Revenue Receipts	9.3	9.4	9.4	10.1	10.9	9.6	8.8	10.1	8.3	8.7	9.1
Capital Receipts	7.4	6.2	4.9	3.5	3.4	6.1	7	5.3	6.3	5.8	4.8
Total Receipts	16.7	15.6	14.3	13.5	14.3	15.7	15.8	15.4	14.7	14.4	13.9
Revenue Expenditure	12.7	11.9	11.9	12	11.9	14.1	14.1	13.4	12.7	12.3	12.4
Capital Expenditure	3.8	3.5	1.8	1.6	2.4	1.6	1.7	2	1.8	1.6	1.7
Total Expenditure	16.6	15.4	13.7	13.6	14.3	15.7	15.8	15.4	14.5	13.9	14

Note: Data on Central Government Finances for 2013-14 Obtain To Revised Estimates

Source: RBI, Union Budget Document and Economic Advisory Council to the Prime Minister

The government fiscal policy is not only determined the fiscal marksmanship in terms of fiscal and revenue deficit but also marksmanship in term of revenue and expenditure target. The fiscal marksmanship of central government was performed very well after the post FRBM Act. But in 2008-09 and 2011-12 economy performance was poor. Poor performance was 2008-09 due to global financial crisis. In 2011-12 fiscal outcome of the economy was affected due to slow growth in macroeconomic development, high global crude oil prices. Therefore disinvestment programme of government affected for meager financial conditions. In 2012-13 budget government has amended the FRBM Acts as a part of financial bill. After this reform fiscal outcome of central government has improved much compare to 2011-12. In 2013-14 the fiscal deficit also came down to 4.6 per cent over 4.9 per cent in 2012-13. The 2014-15 budgets indicate that the fiscal deficit is at 4.1 per cent of GDP. The 2014-15 indicates sound macroeconomic scenario of the country show high growth of services and manufacturing sectors. In 2015-16 it has forecasted to 8.5 per cent growth. The government has planned to raise revenue by increasing excise duty on petrol and diesel while global oil prices fall. The fall in global oil prices along with diesel price deregulation and the direct transfer of domestic LPG subsidies to bank accounts are expected to help lower fuel subsidies bill. The government is targeted to do expenditure cut for reducing fiscal deficit in 2014-15.

According to committee suggestion the central and state government should move from present system of fiscal deficit measure to measure of the Public Sector Borrowing Requirement (PSBR). The PSBR is considered as better estimation of the dependency of fiscal resources in the economy. The rough indicator of PSBR has probability of 3 per cent of GDP above the fiscal deficit. Although the public figure of PSBR is not attainable. The supervision of PSBR depends on the decision of implementation of PSBR. RBI should take prior step to estimate PSBR and make it formulate in public domain. Hence it simplifies to accept PSBR as an indicator of the public sector deficit. The committee prescribes that office of public debt should be established to function independently outside the RBI.

3.2.4.1.3. External Sector Indicators:

3.2.4.1.3.1 Overview of Balance of Payments:

Balance of Payment indicators are performing well in the first half of 2014-15. Where the trade deficit and Current Account Deficit are showing decline trend. Huge amount of capital inflows are entering into the country in the capital account side in the form of portfolio investment, foreign direct investment and external commercial borrowing. The high volume capital inflows will avail to cover CAD. The excess inflows will support acquire foreign exchange reserves. Hence sound of balance of payment case is an indicator of healthy economy. Now we will explain the movement of current and capital account of BoP. (Table-3.5) will show the direction of balance of payment.

3.2.4.1.3.1.1. Current Account:

The balance of payment data reveals that in trade account Merchandise export exceeded the import. Merchandise export has increased to 7.6 per cent in 2014-15 (April-September) i.e. USD 167.0 billion. In second quarter the growth rate of export has declined due to decline in oil price to USD 98.9 per barrel in 2014-15 (second quarter) from an average of USD 105.1 per barrel in 2013-14 (second quarter). The outcome on import is mixed in the first half of the current fiscal year (April-Sept) in compare to last year due to base effect of gold i.e. in the first quarter of 2013-14 there was high gold import and in the second quarter of 2013-14 import of gold was tight in the meantime import of gold was high in the first quarter of 2014-15 due to seasonal effect which shows relaxation on gold import restriction. The mixed outcome increases the repayment volume of non-gold non-POL imports in 2014-15 which was quite low in 2013-14. In current account Invisible items include (a) services, (b) transfer, and (c) income. The Services (net) has been dominated by software exports. The growth rate of services is 2.4 per cent i.e. US$ 36.1 billion in 2014-15 (April-September) which was USD 35.2 billion in the same period of the previous year 2013-14. The other invisible item i.e. transfers (net) in which remittances were around USD 32.7 billion in the first half of both 2013-14 and 2014-15. So software services and remittances are in surplus. The other item is net income which reflects the level of net international investment position. Income (net) has been dominated by investment income which was USD 13.8 billion in 2014-15 (April-September) as against USD 13.4 billion in 2013-14 (April-September). As per improvement in the above areas, CAD was at USD 17.9 billion in 2014-15 (April-September) which was USD 26.9 billion in the same period of 2013-14. Hence in the proportion of GDP, CAD has declined to 1.9 percent in the first half of 2014-15 from 3.1 per cent in the first half of 2013-14.

3.2.4.1.3.1.2. Capital/ Financial Account Development:

On the capital account side of BoP, the first half of 2014-15 marks improvement in capital flows into the country both in quantity and quality. The net capital flows was USD 36.0 billion in the first half of 2014-15 in compare to USD 16.3 billion in the first half of 2013-14. Net foreign investment is the important source of financial flows which has increased to USD 38.4 billion in 2014-15 (April-September) from USD 7.8 billion in 2013-14 (April-September). The another important item coming under capital account is net ECB which was raised to USD 3.4 billion in 2014-15 (APR-SEP) from USD 2.5 billion in 2013-14 (April-Sep). The net banking capital has felt to USD - (0.5) billion from USD 11.5 billion in the same period.

Indian capital account is dominated by FDI and FII investment. India obtained sufficient amount of flows from FDI and FII which helped to finance CAD. The higher net FDI flows reveal growth potentiality of domestic economy. The increase in portfolio inflows indicates minor vulnerability of external sector of the domestic economy. By combining both net capital flows and CAD level, India's total foreign exchange reserve is USD 18.1 billion (BoP basis) in the first half of 2014-15 over USD 10.7 billion in 2013-14 (April-September). The recent data indicate that net FDI inflows is USD 24.2 billion in April-December 2014 which was USD 20.7 billion in 2013-14, NRI deposit reduced to USD 10.0 billion in 2014 (April-December) over USD 35.1 billion in 2013 (April-December).

By observing both current account and capital account side of Balance of Payment, we generalize that BoPs is moving in balance direction. This indicates country economic condition is improving.

Table.3. 5 Balance of Payments Summary (US$ Million):

	2009-10	2010-11	2011-12	2012-13 (PR)	2013-14 (P)	2013-14 H1(April-Sept. 2013)	2014-15 H1(April-Sept 2014)
1.Current Account							
a. Exports	182442	256159	309774	306581	318607	155152	166974
b. Imports	300644	383481	499533	502237	466216	238941	240188
c. Trade Balance	-118202	-127322	-189759	-195656	-147609	-83789	-73214
d. Invisibles (Net)	80022	79269	111604	107493	115212	56830	55272
i. Services	36016	44081	64098	64915	72965	35239	36069
ii. Transfer	52045	53140	63494	64034	65276	32744	32757
iii. Income	-8038	-17952	-15988	-21455	-23028	-11153	-13554
Current Account Balance	-38181	-48053	-78155	-88163	-32397	-26959	-17942
2. Capital Account							

a. External Assistance	2890	4941	2296	982	1032	130	606
b. ECBs	2000	12160	10344	8485	11777	2455	3429
c. Short-Term Debt	7558	12034	6668	21657	-5044	589	69
d. Banking Capital	2083	4962	16226	16570	25449	11487	-542
Non-resident Deposits	2922	3238	11918	14842	38892	13700	6473
e. Foreign Investment	50362	42127	39231	46710	26386	7762	38385
i. FDI	17966	11834	22061	19819	21564	14589	16183
ii. Portfolio Investment	32396	30293	17170	26891	4822	-6827	22202
f. Other Flows	-13259	-12484	-7008	-5105	-10813	-6619	-3407
Capital Account Balance	51634	63740	67755	89300	48787	15806	38539
3. Errors And Omissions	-12	-2636	-2432	2689	-882	453	-2522
capital account balance (Including errors and Omissions)	51622	61104	65323	91989	47905	16259	36017
4. Overall Balance	13441	13050	-12831	3826	15508	-10701	18076
5. Reserve change - ve (increase) + ve (decrease)	-13441	-13050	12831	-3826	-15508	10701	-18076

Source: RBI

Note: PR: Partially Revised; P: Provisional

3.2.4.1.3.2 Foreign Exchange Reserves:

The 2013-14 indicates severe depreciation of rupee in the initial pert of this year with reduction in reserve, the authority and Reserve Bank of India has have taken various steps for improving stock of reserve. The data shows that the stock of foreign exchange reserves increased to USD 304.2 billion at end-March 2014 from USD 292.0 billion at end-March 2013. In the first half of 2014-15, India's foreign exchange reserves have rises to USD 18.1 billion on BoP basis (i.e. excluding valuation effect). In nominal terms (i.e. including valuation effect) Foreign Exchange Reserve has increased to USD 9.6 billion with end-March 2014, at USD 313.8 billion. Detail information has been given in (Table-3.6).

Table.3. 6 Summary of Foreign Exchange Reserves (USD Billion):

Year	Foreign Exchange Reserves At The End Of Financial Year (End March 2014)	Total Increase (+)/ Decrease (-) In Reserve	Increase/Decrease In Reserves On Bop Basis	Increase/Decrease In Reserves Due To Valuation Effect
2007-08	309.7	110.5	92.2	18.3
2008-09	252	-57.7	-20.1	-37.6
2009-10	279.1	27.1	13.4	13.7
2010-11	304.8	25.7	13.1	12.6
2011-12	294.4	-10.4	-12.8	2.4
2012-13	292	-2.4	3.8	-6.2
2013-14	304.2	12.2	15.5	-3.3
End-Sep2014	313.8	9.6	18.1	-8.5

Source: RBI

On the basis of current account deficit if we will consider major economies of the World then India's rank is second after Brazil in foreign exchange reserve (Table- 3.7). At end January 2015 foreign exchange reserve of India stands at USD 328.7 billion. The reserve has increased in first half of 2014-15. The increase in reserve indicates less vulnerability of external sector. The ratio of short-term external debt to reserves has declined to 27.5 per cent as at-end September 2014 from 29.3 per cent at end- March 2014 and the reserves cover for imports has increased from 7.8 months at end-March 2014 to 8.1 month as at-end September 2014.

Table.3. 7 Foreign Exchange Reserves of Some Major Countries:

Country	Foreign Exchange Reserve At End -Dec. 2014 (US$ billions)
China	3840#
Japan	1312.1
Switzerland*	526.6
Russian Federation	388.5
Brazil	363.6
Korea*	363.2
china, P.R. Hong Kong*	344.6
India	320.6
Germany	192.7
Thailand *	163.7
France *	161.6
Italy	143.3

Source: Indian Economic Survey 2014-15

***Latest data available from the month of November 2014 only**

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3.2.4.1.3.3. Exchange Rate:

The global uncertainty took place in 2013-14, after the declaration of US Fed in May 2013 to withdraw quantitative easing, which led to depreciation of emerging market currency on the basis of the requirement of external finance. The external financing requirement was noted through CAD of the country. In 2011-13 India's CAD level had increased which was continued to first quarter of 2013-14. This lead to depreciation of rupee from Rs: 54.38 per US dollar in April 2013 to Rs: 63.75 per US dollar in September 2013. So the monthly exchange rate of the rupee against the USD has depreciated by 14.7 per cent. The depreciation came at Rs: 60.10 at end-March 2014 and Rs: 60.36 per US dollar in April 2014 after stabilization.

Table.3. 8 Average Exchange Rates (Rupee Per Foreign Exchange):

Month	US Dollar	Pound Sterling	Euro	Japanese Yen b	RBI net sale -/purchase+(US Million)
2013-14 (Annual Average)	60.5 (-10.1)	96.31 (-10.7)	81.17 (-13.7)	60.40 (9.0)	8992
2014-15 (Monthly Average)					
Apr-14	60.36 (1.1)	101.08 (0.3)	83.35 (1.2)	58.86 (1.3)	5870
May-14	59.31 (1.8)	99.94 (1.1)	81.49 (2.3)	58.28 (1.0)	1786
Jun-14	59.73(-0.7)	100.98 (-1.0)	81.24 (0.3)	58.53 (-0.4)	2642
Jul-14	60.06 (-0.5)	102.62 (-1.6)	81.39 (-0.2)	59.07 (-0.9)	5453
Aug-14	60.90 (-1.4)	101.81 (0.8)	81.14 (0.3)	59.17 (-0.2)	-511
Sep-14	60.86 (0.05)	99.31 (2.5)	78.60 (3.2)	56.77 (4.2)	1437
Oct-14	61.34 (-0.8)	98.72 (0.6)	77.91 (0.9)	56.87 (-0.2)	2703
Nov-14	61.70 (-0.6)	97.28 (1.5)	76.99 (1.2)	53.05 (7.2)	3081
Dec-14	62.75 (-1.7)	98.11 (-0.8)	77.36 (-0.5)	52.60 (0.9)	6739
Jan-15	62.23 (0.8)	94.54 (3.8)	72.77 (6.3)	52.54 (0.1)	-

Source: RBI,

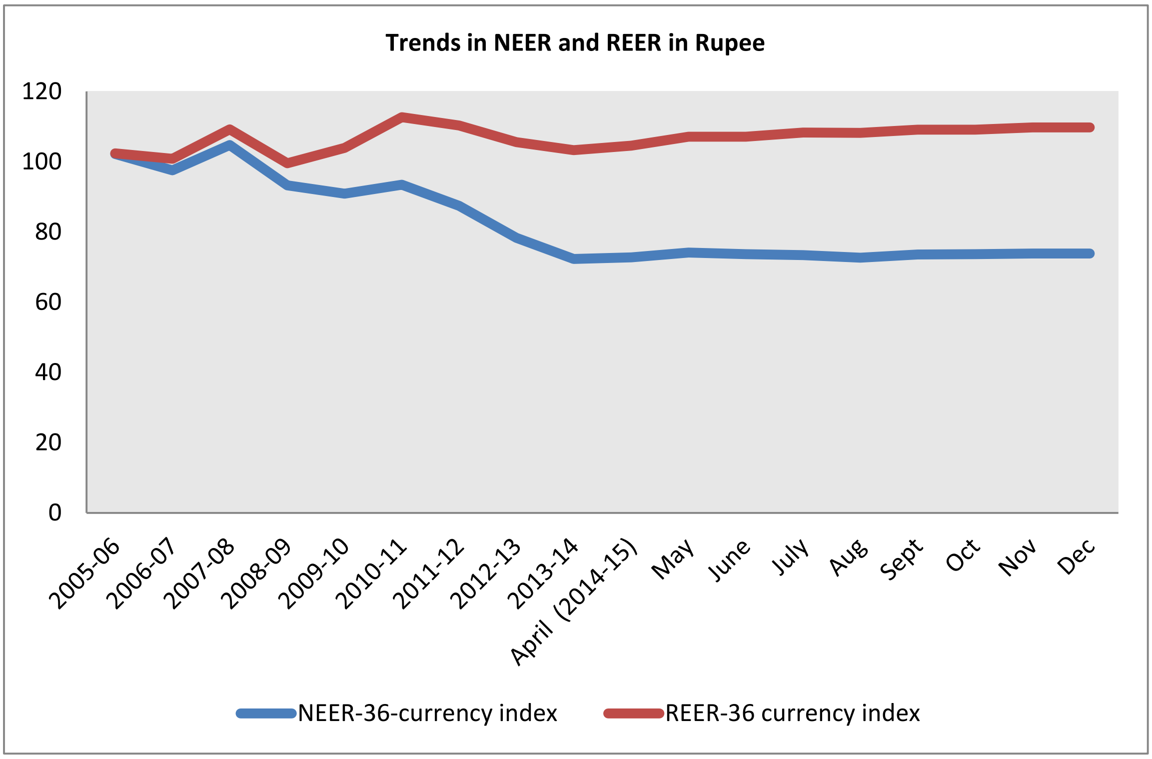
Note: (- not available), a: RBI reference rate, b: per 100 yen

Enormous inflows of FDI and FII in equity and bond markets induced stability in Rupee US dollar exchange rate in this year. As the outlook of Europe and Japan economy is weak, rupee has appreciated against euro and yen since September 2014, due to the cycle of cross-currency movements of euro and yen in relation to the US dollar. On point to point basis rupee depreciated from Rs: 60.10 per US dollar on 28 March 2014 to 62.14 rupees per US dollar on 13 February 2015. The depreciation of rupee is 3.3 per cent. On December 2014 rupee reached at low of Rs: 63.75 per dollar and at peak of Rs: 58.4 per US dollar on 19 May 2014. On month-to-month basis, the rupee depreciated from Rs: 61.01 per US dollar in March 2014 to Rs: 62.23 per US dollar in January 2015. The rupee depreciation percentage is 2.0. On the other hand the rupee has appreciated by 7.3 per cent, 16.1 per cent, and 13.6 per cent against the pound sterling, Euro and Japanese yen respectively between March 2014 and January 2015. The month-wise exchange rate of the rupee against major international currencies and the RBI's sale/purchase of foreign currency in the foreign exchange market since April 2014 are in (Table-3.8).

Due to the quantitative easing policy of US Fed many emerging countries currency has depreciated. According to the information available on 8 January 2015, the Indian rupee against the US dollar has depreciated by 4.6 per cent over end-March 2014 as compared with the Russian rouble (40.4 per cent), Brazilian real (14.2 per cent), Mexican peso (10.7 per cent), Indonesian rupiah (10.4 per cent) and South African rand (8.5 per cent).

Effective exchange rates indicate the movement in exchange rate of home currency against a basket of currencies of trade partner countries which consider as the symbol of international competitiveness. The real effective exchange rate (REER) indices are basically the indicator of external competitiveness of the country over a period of time. The nominal effective exchange rate (NEER) is the weighted geometric average of the bilateral nominal exchange rates of the home currency in terms of foreign currencies. REER is defined as a weighted geometric average of nominal exchange rates of the home currency in terms of the foreign currencies adjusted for relative price deferential. The rupee has depreciated against the US dollar, in terms of NEER (36 currencies). Still rupee appreciated against dollar by 2.8 per cent in December 2014 over March 2014. Similarly, REER also appreciated by 5.8 per cent during the same period. We will show the REER and NEER in (Figure-3.1).

Figure 3. 1 Trends in NEER and REER in Rupee:

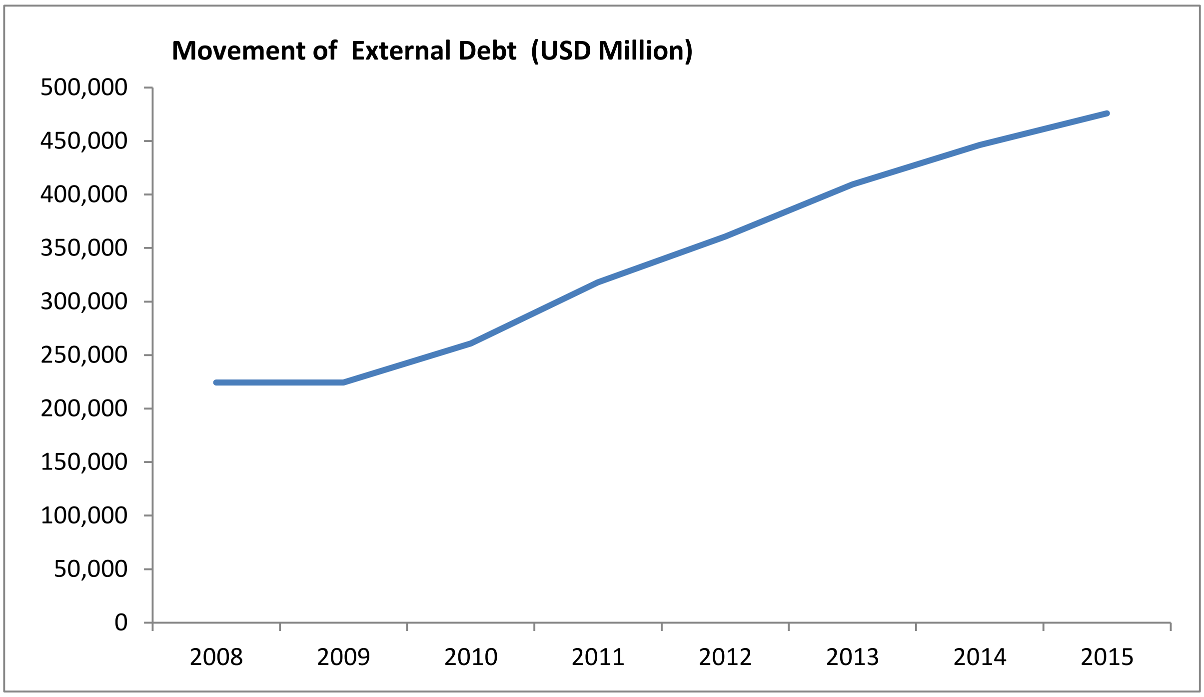


Source: Reserve Bank of India

3.2.4.1.3.4. External Debt:

After 1991 BoP crisis, India's prudent external debt policies and management target was to enlarge size of external debt through sustainability, solvency and liquidity with long term maturity line. At the end March total stock of external debt is at USD 442.3 billion, which was USD 32.8 billion more (i.e. 8 per cent) over the end-March 2013 level. The external debt is rising this time due to long-term debt and NRI deposits. Long-term external debt was at USD 353.0 billion at end –March 2014 which was the 12.9 per cent increase over the end-March 2013 level, meanwhile short-term debt has declined to 7.7 per cent in the same year**.** (Figure- 3.2)

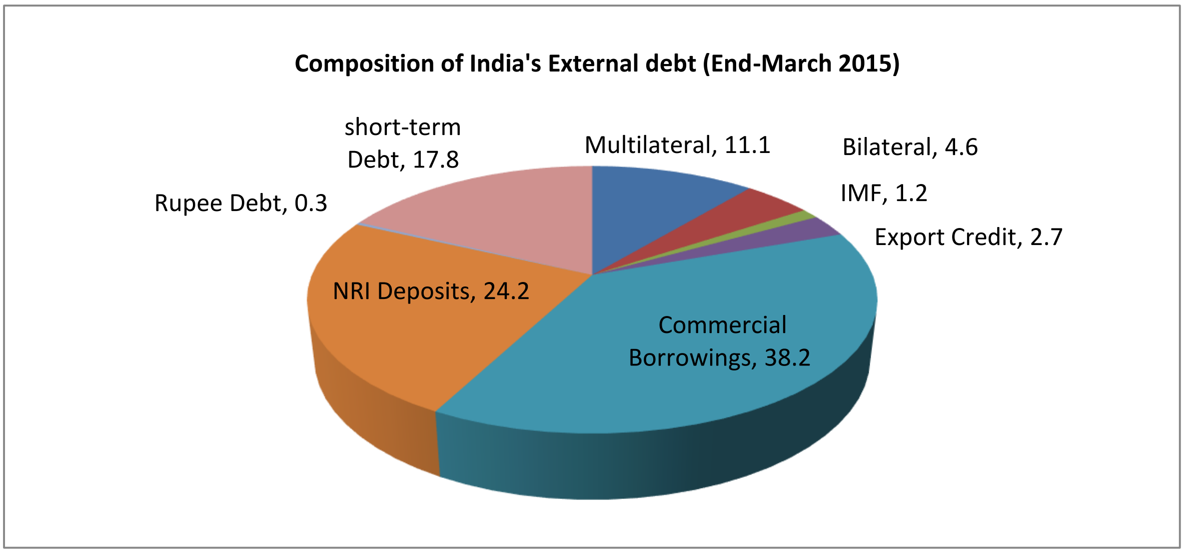
Figure 3. 2 Movement of External Debt (USD Million):



Source: GOI, Ministry of Finance

India's external debt stock was US$ 455.9 billion at end-September 2014 which was 13.7 billion (3.1 per cent) more over the end-march 2014 level. The external debt was increased due to higher long-term debt, particularly commercial borrowing and NRI deposits. The maturity profile of India's external debt indicates that India's debt is dominance of long-term borrowings. At end-September 2014, long-term debt was 81.1 per cent of the total external debt in relation to 79.8 per cent at end-March 2014 and it again increased to 82.2 per cent in end-march 2015. On the other hand the share of short-term debt in total external debt declined from 20.2 per cent at end-March 2014 to 18.9 per cent at end-September 2014 and it again declined to 17.8 in end-March 2015. (Figure 3.3)

Figure 3. 3 Composition of India's External Debt (End-March 2015):



Source: GOI, Ministry of Finance

The US dollar plays leading role in the currency compositions of India's external debt stock. The share of US dollar is highest i.e. 60.1 per cent at end-September 2014, followed by Indian rupee (24.2 per cent), Special Drawing Rights (SDR) (6.5 per cent), Japanese yen (4.5 per cent), and Euro (3.0 per cent) denominated (Table-3.7). The currency composition of government (sovereign) debt is dominated by SDR share. The share of SDR-denominated debt is (33.5 per cent) of total government debt. The SDR-denominated debt is allowed to borrow from the International Development Association (IDA), i.e. the soft loan window of the World Bank under the Multilateral Agencies and SDR allocations by the International Monetary Fund. At end-September 2014, government (sovereign) external debt was at US$ 88.4 billion which was 19.4 per cent of India's total external debt. Non-government external debt amounted to US$ 367.5 billion which was 80.6 per cent of total external debt at end-September 2014.

India's external debt composition changes structurally over the years. The concessional proportion of total debt of India has declined from 42.9 per cent (average) during the period 1991-2000 to 28.1 per cent at end-September 2014. The non-government debt play dominant role in the composition of India's external debt. The share of non-government debt to total external debt was 65.6 per cent of total debt in 2000s over 45.3 per cent in the 1990s. In the last five years the non-governmental debt stood at 70 per cent of total debt which is 80.6 per cent at end- September 2014. The key external debts indicators are in (table 3.9). India's foreign exchange reserves provided a cover of 68.2 per cent of the total external debt in 2013-14. It contains 71.8 per cent in 2014-15. The ratio of short-term external debt to foreign exchange reserves was 30.1 per cent in 2013-14 and decreased to 24.8 per cent in 2014-15. The ratio of concessional debt to total external debt has had reduced to 8.8 per cent in 2014-15 over 10.4 per cent in 2013-14. (Table 3.10)

Still India's external debt is in manageable condition. The external debt to GDP ratio is 23.5 per cent and debt-service ratio is 5.9 per cent in 2013-14. The policy has targeted to monitor long and short-term debt, raising sovereign loans on concessional terms with longer maturities. Regulation of ECB can be set through end-use, all-in-cost and maturity restrictions. The other is rationalization of interest rates on NRI deposits.

International Comparison on External Debt

The cross country comparison of external debt based on the World Bank's international debt statistics 2015. It contains the external debt data for the year 2013 which shows that India is coming under the less vulnerable countries. India's key debt indicators compare well with other indebted developing countries. The ratio of India's external debt stock of Gross National Income at 23.0 per cent was the sixth lowest and in terms of the cover provided by foreign exchange reserves to external debt, India's position was sixth highest at 64.7 per cent.

Table.3. 9 Currency Composition of India's External Debt (Per Cent) End –March:

Currency	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 PR	2014 QE
1.Us Dollar	40	47.7	48.8	51.1	55.3	54.1	53.2	55.3	56.9	59.1	61.8
2. Indian Rupee	22.5	19.4	18.8	18.5	16.2	15.4	18.7	18.8	20.5	22.9	21.1
3. Japanese Yen	11.6	10.4	10.9	11.4	12	14.3	11.5	10.9	8.7	6.1	5.1
4. SDR	16.3	14.9	14.3	12.4	10.6	9.8	10.7	9.4	8.3	7.2	6.9
5. Euro	5.7	4.6	4.4	3.9	3.5	4.1	3.6	3.6	3.7	3.4	3.4
6. Pound Sterling	3.4	2.6	2.6	2.4	2.2	1.9	1.8	1.6	0.9	0.7	1.1
7. Others	0.5	0.4	0.2	0.3	0.2	0.4	0.5	0.4	1	0.6	0.6
Total	100	100	100	100	100	100	100	100	100	100	100

Source: GOI, Ministry of Finance

Table.3. 10 Key External Debt Indicators (Per Cent):

Year	External Debt (US$ billions)	Total External Debt To GDP	Debt Service Ratio	Foreign Exchange Reserves To Total External Debt	Concessional Debt To Total External Debt	Short-Term External Debt To Foreign Exchange Reserves	Short-Term External Term Debt To Total Debt
2006-07	172	17.5	4.7	115.6	23	14.1	16.3
2007-08	224.4	18	4.8	138	19.7	14.8	20.4
2008-09	224.5	20.3	4.4	112.2	18.7	17.2	19.3
2009-10	260.9	18.2	5.8	106.9	16.8	18.8	20.1
2010-11	317.9	18.2	4.4	95.9	14.9	21.3	20.4
2011-12	360.8	20.9	6	81.6	13.3	26.6	21.7
2012-13	409.5	22.3	5.9	71.3	11.1	33.1	23.6
2013-14PR	446.3	23.6	5.9	68.2	10.4	30.1	20.5
2014-15 QE	475.8	23.8	7.5	71.8	8.8	24.8	17.8

Note: pr-partially revised, QE: quick estimate

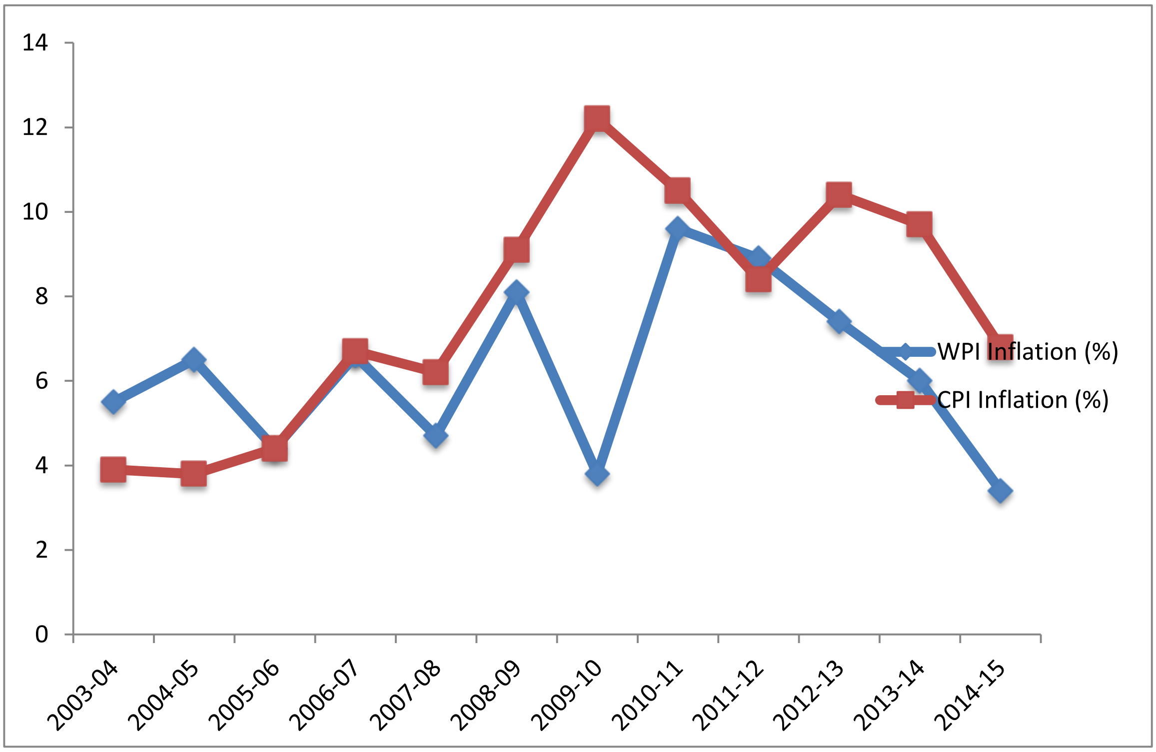
Source: GOI, Ministry of Finance

3.2.4.1.3.5. Monetary Policy and Inflation:

The RBI has formulated the Technical Advisory Committee on Monetary policy. The main objective of the monetary policy is to bring price stability with inflation to boost economic growth and to stabilize the exchange rate of the rupee in terms of US dollar, pound sterling and other foreign currencies. In the last year due to tight monetary policy RBI was able to control demand pressure, to do buffer against external shocks and maintain volatility of rupee under check. Rupee has relatively stable during last year. RBI has started relaxing monetary policy by cutting policy repo rate and reducing statutory liquidity ratio due to control on inflation. RBI has cut down the policy repo rates by 25 basis points to 7.75 per cent in January 2015 and also the statutory liquidity ratio (SLR) by 50 bps from 22.0 per cent of net demand and time liabilities (NDTL) to 21.5 per cent according to the Economic Survey 2014-15. (Table 3.11)

2014-15 data point out that average wholesale price index inflation has fall to 3.4 per cent (April-December) in compare to 6 per cent in 2013-14 due to sharp fall in fuel prices. Food inflation rate has also moderate to 4.8 per cent in (April-December) 2014 over 9.4 per cent in 2013-14, this happened due to correction of vegetable prices since December 2013, moderating the price of egg, meat and fish (except March 2014). But core inflation has increased to 3.2 per cent in 2014-15 (April-Dec) over 2.9 per cent in 2013-14. Average retail inflation measure by consumer price index has moderate level i.e. 6.8 per cent in (April-December) 2014-15 which was 9.7 per cent in 2013-14. CSO has revised base year from 2010 to 2012 and the revised CPI headline inflation in term of revised series is 5.1 per cent in January 2015. (Figure-3.4)

Figure 3. 4 Trends of Inflation



Source: Economic survey 2014-15

Table.3. 11 Monetary Indicators (%):

Year	Cash Reserve Ratio	Bank Rate	Repo Rate	Reverse Repo Rate	Base Rate*	Call Money Rate**	Current Account Deficit#	SLR
2009-10	5.00-5.75	6	5	3.5	11.00-12.50	3.29	-	24
2010-11	5.75-6.00	6	5.00-6.75	3.50-5.75	7.50-12.00	5.89	-	25
2011-12	6.00-4.75	6-9.5	6.75-8.50	5.75-7.50	8.25-10.75	8.22	4.2	24
2012-13	4.75-4.00	9.50-8.5	8.50-7.50	7.50-6.50	9.70-10.50	8.09	4.8	23
2013-14	4	8.50-10.25	7.50-8.0	6.50-7.00	10.25	8.28	1.7	23
2014-15	4	8.50-9.00	7.50-8.00	6.50-7.00	10.25	7.97	1.3	23
Q1	4	9	8	7	10.25	-	1.9	23
Q2	4	9	8	7	10.25	-	2	
Q3	4	9	8	7	10.25	-	1.6	22.5
Q4	4	8.59 @	7.50 @	6.50 @	10.25	-	0.2	22.0
2015-16								
Q1	4	8.25#	7.25#	6.25#	10	-	1.2	21.5
Q2	4	8.25	7.25	6.25	10	-	-	21.5
Q3	4##	7.75##	6.75##	5.75##	9.70##	-	-	21.5

Source: RBI

* Base Rate Is Median Base Rate of SCBs. @Effective from 04-03-2015 ** Weighted Average. # Effective from 02-06-2015

Effective from 29-09-2015 - Not Available

3.2.4.1.3.6. Development of Financial Market:

3.2.4.1.3.6.1. Money Market:

Generally money market refers to short term funds which have maturities of overnight to one year. Hence the financial instrument of the money market is generally taken as closed substitute for money. Money market of India includes call money, market repo and Collateralized Borrowing and Lending Obligation (CBLO) with average daily turnover. The call money market is an uncollateralized ceiling interest rate determined by the India Banks' Association (IBA). The interest rate was administered in order to prevent unwanted rise in the call rates which was 25-30% during the early 1970s. But after CBLO has initiated the involvement of the call money market has reduced this lead to moderate high degree of stable market. In the late 1980s, the main development of money market was to formulate the Discount and Finance house of India (DFHI), the introduction of Certificates of Deposit (CDs), Commercial Papers (CPs) and inter-bank Participation Certificates and freeing of the call money rate which was failed to cover the objectives of market development due to structural rigidity in the system. Afterward the internal working group (1997) and the Narasimham Committee (1998) have given some guidelines for money market such as: (i) Introduction of auction system for T-bills, (ii) Gradual move towards a loan-based system from a cash credit system, (iii) Abolishment of ad-hoc T-bills, leading to the end of the automatic monetization of fiscal deficit (1997).

The Clearing Corporation of India Limited (CCIL) has introduced the CBLO in January 2003; the CBLO was basically helping to bank and non-banks in order to manage their daily liquidity requirements. As it is a collateral instrument (government securities acted as collateral) its rate were low in compare to call money rate and its share of money market transaction was increased to 22.4% in 2004-05 to 53.2% in 2012-13. In April 2004, the area of liquidity adjustment facility (LAF) was expanded by the issuances of the Market Stabilization Scheme (MSS).

The money market in India has pure inter-bank market, the CBLO market has helpful in both bank as well as non-bank participants. The LAF has had a smoothening effect on liquidity and created a corridor of weighted average call between repo and reverse-repo. The RBI has recognized and made the repo rate the short-term signaling rate or policy rate. Thus integration of various money market segments and effective policy signal transmission has been possible due to the stability of the call money rates. We have mentioned detail about key monetary indicators in (Table-3.9). RBI started reducing repo rate under liquidity adjustment facility from 8.0 per cent to 7.75 per cent, because inflation rate becoming decline and also the statutory liquidity ratio (SLR) by 50 bps from 22.0 per cent of net demand and time liabilities (NDTL) to 21.5 per cent.

Trends in Monetary Aggregate

The 2014-15 reflects that both reserve money (Mo) and broad money (M1) slow down compare to previous year. The balance in Mo deals with bankers' deposit with the RBI consecutive to larger increase in deposits in year-end. The Net Foreign assets (NFA) in RBI rise due to decrease in Net domestic assets (NDA) which indicate that RBI is injecting low net liquidity when there is absent of strong demand for liquidity(Table-3.12). The trends in currency in circulation show weaker economic activities (Table- 3.13). The downturn in credit (Table- 3.14) has set down to economic slowdown, scope for alternative sources of funds, degradation of assets quality in banks and some banks started selling stressed loans to assets reconstruction companies. Net bank credit decline due to the individuals who were obtain payment by government and public enterprises started repayment of loans. The bowering of oil marketing companies was also declined.

Liquidity Conditions

Liquidity condition has been balanced in 2014-15. The tight liquidity conditions were up to March 2014, it started improve from Q1 2014-15 because of reduction in government cash balance. The reduction in government cash surplus helped to alleviate liquidity pressure from August. The decline in gap between credit and deposits growth (which was negative in August 2014) assist to reduce pressure on liquidity. The volatility of the weighted average call rate declined. There was improvement in weighted average call rates and long-term yields for government and high quality corporate issuance since August 2014 which reflects moderation of monetary condition.

Table.3. 12 End Quarter Growth of NDA and NFA:

	NDAs	NFAs
3/31/2013	9.1	5.8
6/28/2013	19.5	4
9/27/2013	24.9	10.6
12/27/2013	13.8	13.1
3/31/2014	18.3	15.7
6/27/2014	-2.1	12.7
9/26/2014	-21.5	13.7
12/26/2014	-19	11.5

Sources: Economic Survey 2014-15

Table: 3.13 Sources of Change in Reserve Money (M_0) (In Per Cent):

	Financial Year		
	2013-14	3 January 2014 Over 31 March 2013	2 January 2015 Over 31 March 2014
Reserve Money	14.4	5.1	0.9
Select Components			
Currency In Circulation	9.2	5.7	5.9
Bankers' Deposits With RBI	34	3.3	-15.7
Select Sources Of Reserve Money			
Net Foreign Exchange Assets Of RBI	15.7	15.1	10.9
Government's Currency Liabilities To the Public	13	15.1	8.1
Net Non-Monetary Liabilities Of RBI	21.8	26.6	0.6

Sources: Economic Survey 2014-15

Table.3. 14 Sources of Change in Money Stock (M_3) (Per Cent):

	2013-14	31 March 2013 To 27 December 2013	31 March 2014 To 26 December 2014
Broad Money (M3)	13.2	9.9	7.9
Currency With The Public	9.4	6.4	6.2
Demand Deposits With Banks	6.8	2.7	7.7
Time Deposits With Banks	14.6	11.4	8.2
"Other" Deposits With RBI	-39.3	-23.2	314.2
Sources Of Change In Money Stock (M3)			
Net Bank Credit To Government, Of Which,	12.2	9.3	1.5
Other Banks' Credit To Government	10.5	10.2	10.1
Bank Credit To Commercial Sector, Of Which	13.7	9.1	5.7
Other Banks' Credit To Commercial Sector	13.6	9.1	5.8
Net Foreign Exchange Assets Of Banking Sector	17.6	16	9.5
Government's Currency Liabilities To The Public	13	9.9	7.3
Banking Sector's Net-Monetary Liabilities	17.4	12.3	-8.2
Memo Items			
Money Multiplier	5.5		
Velocity Of Money	1.2		
Net Domestic Assets	12.1	8.5	7.5
Net Domestic Credit	13.2	9.2	4.3

Sources: Economic Survey 2014-15

3.2.4.1.3.7. Government Securities Market:

In India the Government Securities Market was in underdeveloped condition. In 1992 auction-based system was implemented for the allocation of Government securities which are able to create the market determined yield curve. In 1997 the automatic monetization was eliminated through ad hoc treasury bills and the ways and means advances (WMA) was introduced by giving operational autonomy. RBI was not allowed to participate in the government securities primary market (FRBM Act 2003) in 2006.

The SLR requirement of Net Demand and Time Liabilities (NDTL) was reduced to 25% in 1997 from 38.5% in 1992. For bank the SLR is 23% of NDTL. The Government Securities auction reform and the RBI's open market operation was able to operate properly by the introduction of Primary Dealers which have helped the market borrowing program of central and state governments. The secondary GSM was introduced with the maturity period of 30 years which are basically the long term securities. The investor base in the GSM has expanded the market from the mandated investment to voluntary G-sec holdings and which reduced the share of commercial banks' share in GSM. Effective December 2007, the Government Securities Act, 2006 facilitated lien marking, pledging of securities to raise loans against government securities, stripping, etc. currently the government securities is quite illiquid at the long end. There has been greater recourse mandate by the twelfth finance commission to conduct market borrowing for the state government.

3.2.4.1.3.8. Forex Market:

Forex market was introduced in India in 1978, at that time India was having fixed exchange rate. After the 1991 reforms Indian forex market was developed in the series of developmental reforms. The reform in forex market was the introduction of the market based exchange rate regime in 1993 and the adoption of current account convertibility in 1994. The capital account also liberalized significantly over the years. The objective of this reform is to develop institutional framework and increase the effectiveness and transparency to do foreign exchange business.

Over the time the forex market is the indicator of increased liquidity and greater market efficiency and the gradual opening of the capital account; forward premiums are typically aligned with the interest rate differential, leading to manifold increases in market efficiency. Under these recommendations, the RBI hinted at the usage of an instructive guide for the further opening of the capital account, a mixture of strategic controls and tactic controls.

One of the key challenges currently impacting the efficiency of the Indian forex market is the speculation being done on the non-deliverable forward (NDF) markets. Both the on-shore and off-shore NDF markets are influenced by the same set of economic and geo-political developments at home and abroad. The NDF rate was more pessimistic, which consequently increased pressure on the on-shore USD/INR rate as well. The Indian authorities is looking forward to the progress of capital account liberalization, this challenge needs to be address carefully, without impacting the liquidity of the forex market. The impact of this volatility needs to be analyzed in terms of two sets of market participants- the real sector (exporters, importers and foreign currency borrowers) and banks or authorized dealers. For the first set of participants, non-hedging techniques (advance payment and invoicing in home currency) were available only theoretically. Hence derivative products were introduced to enable small and medium enterprises (SMEs) to cover foreign currency exposure at competitive costs. Thus forex inclusion of SMEs and the synchronization of the regulation for the OTC and exchange traded markets are the two key challenges that the Indian forex market a critical segment of the country's finance-currently faces, owing to capital account restrictions.

3.2.4.1.3.9. Development of Capital Markets:

3.2.4.1.3.9.1. Equity Market:

The Securities and Exchange Board of India was established in 1992. In order to make more regulatory effectiveness and competitiveness as well as to improve the modern technological infrastructure to reduce informational asymmetries and transaction costs reform were initiated. Foreign equity investments in the form of FIIs were allowed from 1992 onwards. The Indian companies were permitted to increase foreign capital in the form of American Depository Receipts (ADR), Global Depository Receipts (GDRs), Foreign Currency Convertible Bonds (FCCBs), External Commercial Borrowings (ECBs), and investment through NRIs and Overseas Corporate Bodies (OCBs). The National Stock Exchange (NSE) was established in 1994 to further increase the competitiveness. This led to the development of volumes in the equity market in India. During 2000-2001, index futures, index options and options & futures on individual securities were introduced to frame the Indian capital market. Currently the Indian capital market is one of the most active and growing capital markets in the world. Futures and options of about 223 individual stocks and 4 stock indices were traded on the NSE as of March 2011. Large cap stocks/ futures and index futures of Indian equity are fairly liquid and efficient.

Deep and Diverse Indian Equity Market

India's equity market has listed more than 5000 companies. The Indian equity market has achieved second position globally while the U.S. equity market is coming on top. Basically the diverse nature of stocks makes investors to enter into a wide range of sectors such as automotive, banking and pharmaceuticals, etc. and many more to achieve profit. The S & P CNX Nifty, one of the most widely quoted indices, which have the stocks covering the entire spectrum financial, industrial and energy companies. So that investors can diversify to get economic growth, i.e. domestic consumption and infrastructure capital expenditure (capex). One of the main limitations of the Indian equity market is that more than 55% of the equity market is held by the promoters. So it reduces the overall free float of the stock. In order to control this limitation, the SEBI mandated all listed companies to raise public shareholdings to 25 % by mid-2013.

3.2.4.1.3.9.2. Current Trends in Capital Market:

Primary Market:

In April-2014, it shows mixed growth where equity and debt issues went down and private placement of corporate bond increased on year-on-year basis. The private corporate bonds have grasped the lion's share. Total mobilization has increased during this time. Both National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) increased this time. (Table 3.15)

Table3.15 Resources Mobilization in the Primary Market (INR Crore):

	2012-13	2013-14	2013-14#	2014-15#
Debt	16982	42383	17436	7348
Equity	15473	13269	8124	4292
Of Which IPOs	6528	1236	1166	1480
Pvt. Placement Of Corporate Bonds	361462	276054	201838	269245
Total	393917	331706	227398	280885

Sources: Economic Survey 2014-15

# indicates 31 December of the respective

Secondary Markets

The benchmark indices of BSE Sensex and Nifty are having increasing trend in the current year. In dec-2014 the closing trend of this two are at 27,499 and 8283 respectively, which was 29.9 per cent and 31.4 per cent on year-on-year basis. The Indian indices are coming under among the better performing in the World. (Table 3.16).

Table.3. 16 Performance of Major Stock Market in the World:

Index	Country	Index Value 2014 #	Percentage Change In 2014 Over 2013 (Based On Local Currency)	Percentage Change In 2014 Over 2013 (Based USD)
SENSEX	India	27499	29.9	27.1
NIFTY	India	8283	31.4	28.5
SPX	USA	2059	11.4	11.4
DAX	Germany	9806	2.7	-9.6
UKX	England	6566	-2.7	-8.5
NKY	Japan	17451	7.1	-5.8
HIS	Hong Kong	23605	1.3	1.3
IBOV	Brazil	50007	-2.9	-13.4
KOSPI	Korea	1916	-4.8	-8.4
FSSTI	Singapore	3365	6.2	1.2
SHCOMP	China	3235	52.9	49.1
CAC	France	4273	-0.5	-12.7

Sources: Economic Survey 2014-15

# indicates 31 December of the respective year

3.2.4.1.3.10 Gold Market:

Gold is accepted as an investment asset globally. We can analyze liberalization of gold when we are doing liberalization measure on capital account. India consume largest amount of gold in the World. Before and up to 1990 there was strict restriction on the import of gold. But after economic reform a lot has changed on gold import policy. Initially only non-resident Indians were allowed to bring gold into country in a certain amount for the payment of import duty. In1997 some selected commercial banks were permitted to import gold and sell it in the domestic market. But gradually there is a huge market for gold and the investor considers gold not only as an asset for store of value but also as an investment asset. In (Table 3.17) we will show amount of foreign exchange India is having in terms of gold. India has capacity to develop into a centre for bullion trade. But still now large amount of gold are in hoard i.e. private gold. So measure should be taken to bring private gold into the banking system. Hence, proper step should be taken for well development and management of the gold market as the country is planning for FCAC.

Table. 3.17 Foreign Exchange Reserves in Terms of Gold:

Year	(USD Million)	Tones
2000-01	2725	358
2001-02	3047	358
2002-03	3534	358
2003-04	4198	358
2004-05	4500	358
2005-06	5755	358
2006-07	6784	358
2007-08	10039	358
2008-09	9577	358
2009-10	17986	558
2010-11	22972	558
2011-12	27023	558
2012-13	25692	558
2013-14	21567	558
2014-15 April(a)	20966	558
May	20790	558
June	20635	558
July	21174	558
August	20933	558
Sept	20013	558
Oct	19738	558
Nov	18985	558
Dec	19378	558
source: RBI a: pertain to end of month		

3.2.4.1.3.11 Banking Sector Reforms:

An efficient well developed strong banking system is necessary precondition in the process of liberalization. One of the important reasons behind India less affected at the time South Asian crisis and able to manage its external sector is that India's external sector reforms was reforms with financial sector and most importantly due to banking sector reforms. The external sector reform was first introduced in 1991, at that time Narasimham committee was formulating the guideline for banking sector reforms. The period 1969 to early 1990s was known as financial repression. The main motto for nationalization of bank is to spread and reach the banking system in rural and backward areas. There was control on deposit and lending rates. Government and priority sector can take credit from bank at below market rates. Public sector plays the dominant role. But this policy developed the inefficiency and non-performing assets in bank due to lack of transparency in operations which reduce the confidence in the banking sector. So Narasimham committee was recommended to give the guideline to banking sector. Gradually many committee was set up to make banking system strengthen and transparent. The main aim behind these reforms has been to improve the competitiveness and efficiency of banking system.

In the recent financial year 2014 the growth rate of economic is moderate with 4.9 per cent over 4.5 per cent in 2013. Interest rate was in high level 2014. In order to control on the volatility of exchange rate the RBI has recalibrated Marginal Standing Facility rate at 300 bps above repo rate at 10.25 per cent and this led to rise in market interest rate and the participants have face Mark to Market (MTM) loss on their position. RBI had increased the repo rate from 7.25 per cent to 8.00 per cent (thrice) in Sept. 2013 to manage inflation. This economic slowdown brought asset quality down and because of this income decline which led to increase in provision and finally profitability of bank was affected. The economic slowdown also affects restructured assets.

Table-3.18 NPA percentage of Banks:

	Overall (End-March)			Public sector bank (End-March)			Private sector bank (End-March)		
	2012	2013	2014	2012	2013	2014	2012	2013	2014
Gross NPA Ratio (%)	2.79	3.26	3.85	2.98	3.59	4.33	1.96	1.86	1.82
Net NPA Ratio (%)	1.04	1.71	2.16	1.18	2	2.53	0.36	0.36	0.62
Net NPA/net worth (%)	13.04	16.39	21.19	17.54	22.39	29.21	2.7	2.97	3.78
Restructured Advances/ advances (%)	5.38	6.03	6.16	6.24	7.05	7.06	2.02	1.71	2.48

Source: CARE, BANKS

Overall Gross NPAs ratio has increased from 3.26 per cent on End-March 2013 to 3.85 per cent on end- March 2014. The asset quality of public sector bank has decline more than private sector banks. The gross NPA ratio PSB is 4.33 per cent in end-March 2014 (end-March 2013: 3.59%) as compared to 1.82 per cent (end-March 2013: 1.86 per cent) for private sector banks on end-March 2014. In addition to higher NPAs, PSBs also had large amount of restructured advances which stood at 7.06 per cent advances (end-March 2013) as on end-March 2014. The restructured advances are accounted which have stress and there is a higher chance to turn into NPAs. The graph will show the trends of gross NPAs and restructure advances percentage from end-March 2012 to end-March 2014. (Table-3.18)

Table.3. 19 Capital Adequacy level of Banks:

Category	Median CAR (%) (End-march)			Median tier I CAR (%) (End-March)		
	Basel II		Basel III	Basel II		Basel III
	2012	2013	2014	2012	2013	2014
Overall	13.26	12.59	11.54	9.45	9.12	8.86
public sector banks	12.92	12.1	11.03	8.99	8.49	8.11
private sector banks	14	14.73	14.77	11.37	12.05	12.62
Source: CARE, BANKS						

Now the Capital Adequacy level is in manageable position, but CAR have to rise to cover Basel-III norms, capital adequacy of the select banks are in comfortable with strong level of core (Tier I) capital. Overall CAR level is at 11.54 per cent on end-March 2014 over 12.59 per cent on end-March 2013. According to RBI instruction, Indian banks have started computing and reporting CAR under Basel III from quarter end -June 30, 2013. The median Tier -I CAR under Basel III was at 8.86 per cent with the median tier I CAR for private sector banks being higher at 12.62 per cent on end-March 31, 2014 which was higher than minimum requirement of 6.5 per cent as on end-March 2014, which is the transition phase of fully transfer to Basel III by end-March 2019. (Table 3.19)

So improve in economic condition is the only way to reduce pressure of asset quality of banks and NPA level in bank. Hence bank can able to increase its profit capacity. It is estimated that the Gross NPA will marginally be higher in financial year 2015 than in financial year 2014. The capital adequacy level is in comfortable level for select bank in financial year 14. Still the bank basically public sector banks need to raise more capital adequacy ratio in order to meet Basel III norms.

Conclusion:

The preconditions for the movement of capital account openness should be viewed as process not like one time result required before liberalization. India's capital account is partially convertible. In the current scenario of India on the path of open capital account is CAD has declined to 1.9 percent in the first half of 2014-15 from 3.1 per cent in the first half of 2013-14. It was 4.2 percent of GDP in 2011-12 and rose to 4.7 percent in 2012-13. The 2013-14 current account deficits declined due to severe controls on the import of precious metals. In 2014-15 it continue to stay low, with fourth quarter showing a deficit of 0.2 percent. But the fiscal situation remains fragile. The turning point was in 2007, the year of the global financial crisis. The fiscal deficit of the central government has been 4.6-6.5 per cent in the past six years; the fiscal deficit was 4.9 per percent in 2012-13 and 4.6 percent in 2013-14 which is above the recommended precondition rate. The government is committed to keep the fiscal deficit low and target of 3.9 percent for this year. The government is planning to progressively reduce the deficit target to 3.5 percent and 3 percent in 2016-17 and 2017-18, respectively. The NPAs per cent of public sector bank is 3.85 per cent which is above the precondition percentage. The CRR of banking system is 4 per cent in the current year. The latest macroeconomic indicator which was revised by central statistical office, the revised estimate show that growth has started in 2013-14. It obtain due to fall in oil prices, large amount of flows from rest of the world, various reform has taken place of the new government such as improve fiscal management and consolidation for the growth prospects of overall economic situation. It focuses more on macroeconomic stability by enhancing the business sentiment, reformist action taken by the government. So IMF and World Bank are expecting optimistic growth outlook for India for the year 2015.

3.3. Experience of Other Emerging Countries due to Capital Account Openness:

3.3. 1. Introduction:

The concept of capital account convertibility becomes easy to understand with the knowledge of historical background of how the economy became convertible, what made global economy destabilized and how the economy experienced in different time period. The basic question of historical pattern of financial market integration is that whether globalization of financial market is common in today or it was before 1914. In history there is record of several financial crises due to open capital market. In our discussion financial crises basically refers to banking crises, currency crises and twin crises. At first in the history financial crises occur due to banking crises (Schwartz 1989[15]). Several financial crises occur in the World since the beginning of nineteenth century and even before (Kindleberger 1978). Before World War I the world was running in the system of globalization that means the integration of goods, labor and capital markets. This open capital mobility led to asset market booms and busts which open the door of crises and crises occurred. Before World War II there were many crises occurred globally in different time period such as, 1825,1837-38,1847,1857,1866,1873,1890-93,1907-1908,1914,1920-21 and 1929-33. After World War II under Bretton Woods had pegged exchange rates system, capital controls and high restrictions in financial market, so in this time period financial crises were not occurring frequently but currency crises were happening frequently. Again in global economy in the year 1970s many advanced countries started implementing floating exchange rate regime, they started removing capital controls and had liberalized the domestic financial markets which led to international financial crises occurrence. The country must have concrete knowledge to make its own rule to overcome the uncertainty in global financial function, then only country will be benefited in liberalization. The country should have theoretical and practical idea to manage the global financial game properly. Hence, it is necessary to have proper understanding on the formation of global finance and how the global finance became a complex one and also how the nation able to manage this complex system efficiently.

From the above discussion we have given brief historical idea about crises occur in different part of World due to openness of global financial system. Here we are going to represent emerging economic crises (East Asia, Mexico, Russia, and Argentina) and the reason behind crises.

[15] Schwert, G. W. (1989). Business cycles, financial crises, and stock volatility. *In Carnegie-Rochester Conference Series on Public Policy* , *31*, pp. 83-125. North-Holland.

3.3. 2. Lessons to Emerging Market Economics:

The lesson from emerging economy states that, country must be well prepared before taking the step to move for open capital account then only it will able to reduce the risk of crisis. The experience of East Asian and some other emerging market we will discuss below due to open capital account.

3.3.2.1. East Asian currency crisis:

i. Thailand

Thailand was considered as a model for other developing countries. The economy was running with excellent performance of export sector, growth rate was high and high amount of capital inflows was coming into Bangkok when it financial markets was out of restrictions in early 1990s. The high capital inflows lead to increase the rate of interest and made peg of Thai baht to the dollar to consider baht as stable. Nevertheless, high volume of capital inflows entered to country for investment and most of the inflows were short-term funds. Hence, financial market had borrowed more on short-term basis and faced liquidity problem. Most of the borrowing was spent on private consumption and low capital investment brought down productivity. Thailand BoP indicated high current account deficit due to large volume of import and interest payment on foreign debt. This brought economy in to recession and low growth rate. Many industrial countries demand for export goods from Thailand had declined. The wage rate had increased and it led to competition with low wage rate countries like People's Republic of China and Vietnam. The financial crisis in Thailand started in property sector and touch high in spring 1997. This crisis spread to rest of the economy with very high speed. Many investors started speculation against Thai baht and the Bank of Thailand injected $4 billion into the market to support high drive. The Thai baht depreciated by 17 per cent against US dollar. The volume of foreign debt had increased to $ 90 billion by July 1997. IMF and other lenders had granted $ 17.2 billion to Thailand in August 1997. In 1998 Thailand government implemented certain policy such as, government expenditure should be reduce to obtain budget surplus even with low tax revenue, the currency reserve in Thailand should not fall to certain level, strict regulations on lending norms and strict monetary policy.

ii. Thailand's Crisis spread to South-East Asia

The Thailand crisis had spread to other South-East-Asian countries such as Malaysia, Indonesia and the Philippines. The currency value of these country decline sharply. These countries had high current account deficits, large amount of foreign debt and speculation problem in construction projects and real estate. The south East Asian countries currency had devalued against the US dollar, the Thai baht (-34 %), Indonesian rupiah (-45 %), Malaysian ringgit (26 %) and Philippine peso (-25 %). The South East Asian currency has entered into depreciation due to speculators and the domestic economic players were interested to hedge their dollar-denominated debt. The increase in credit risk means high risk of inflation, which create fear that strict monetary policy might not be able to stabilize the currency immediately. The South East Asian currencies were suffering from speculative attack due to irrational market behaviour (the domino effect, or the herd behaviour).

iii. South Korea

Initially South Korea was visible as less affected by crisis than Thailand and Indonesia. The high short term borrowing and availability of low international reserves put South Korean economy in danger during the month following the crisis. In South Korea the chaebol[16] were operating in the in the economic activities like shipbuilding, automobiles, chemicals and semiconductors. The South Korea is well known for its major industrial conglomerates (the Chaebol). In some years, South Korea faced high current account deficit due to high volume of import. The high amount of inflows came from abroad and the commercial bank of Korean started increase lending activities without concern the credit worthy capacity of their debtors. The high lending led to spent in unproductive activities, transparency lost due to its complexity among chaebol and informal relationships. The Korean economic activities started decline from November 1997 onwards. The Bank of Korea's convertible currency reserves declined to $ 23.9 billion from $ 30.5 billion (Aschinger, G. 1998). The depreciation of currency was 35% against the dollar. In December 4, 1997, the government of South Korea approved a 3-year- stand-by arrangement with IMF amounting to US$ 21 billion. Other commitments included a total of US$ 14 billion by the World Bank and the Asian Development Bank with technical assistance. Another one is other interested countries had pledged US$ 22 billion.

The authorities targeted programmes like improved current account position, adequate foreign exchange reserves, control on inflation with strict monetary policy and some fiscal measures to bring market confidence. In February 1998, South Korea currency appreciated 20 per cent from its low December level. In august 1998 South Korea was able to overcome the external crisis.

[16] Chaebol: It is the name of South Korea business conglomeration which means "business family" .It is originated in 1960s. Each chaebol is owned, controlled or manage by the same family dynasty.

iv. Indonesia

Indonesia economic condition was better than Thailand. The current account deficit was in comfortable level, growth rate of export was good, fiscal balance was run in surplus, but Indonesian short term private sector external debt had been increasing spectacularly and financial sector became in vulnerable condition. The floating of Thai baht also impact on the enhancement of rupiah and its floated on August 14, 1997. The rupiah value was highly depreciated (Table 3.20). On November 5, 1997, the government of Indonesia approved a 3-year-stand-by arrangement with the IMF amounting to US$ 10 billion, US$ 8 billion was pledged by the World Bank and the Asian Development Bank which include extensive technical assistance, other interested countries supported total of US$ 18 billion. The market confidence has been restored by reducing current account deficit, enhance output growth, and control inflationary impact of exchange rate depreciation. It maintained tight monetary policy, intervention in exchange market, improvement in fiscal position and increase the efficiency and transparency in corporate sector. In 1998 the market sentiment had improved, rupiah value appreciated, low interest rate, current account surplus of 4.2 per cent of GDP.

Table:3.20 Appreciation/Depreciation of National Currency against US Dollar (percentage) :

	1994	1995	1996	1997	1998
Thailand	0.68	0.92	-1.66	-19.20	-24.18
Indonesia	-3.41	-3.90	-4.00	-19.49	-70.95
Korea	-0.10	4.17	-4.12	-15.44	-32.12
Malaysia	-1.91	4.79	-0.46	-10.57	-28.32
Phillippines	2.66	2.73	-1.91	-11.04	-27.93

Source: Enver Hakan Konac, 2000

v. Malaysia

In early 1997 the East Asian crisis effect spread to Malaysia economy. The Malaysia crisis started due to sharp reduction in Malaysia share prices and depreciation of external value of ringgit (Table: 3.18). The Malaysia government tightens the monetary and fiscal money to restored stability and confidence in financial market, containing the impact of inflation of the depreciation of the ringgit. In 1998 ringgit had depreciated to28.3 per cent from its previous year level. The Malaysia economic collapsed by decline in consumer and investment spending by early 1998. The financial institution was having high amount of non-performing loans and capital losses.

Demand declined to 26 per cent in 1998 (Enver Hakan Konac, 2000). The Malaysia authorities had taken various steps to restore market confidence by strengthening the financial system. The government measures were to curtail government expenditure, reduce interest rate, expansionary government budget. In 1999 Malaysia economic conditions had shown positive sign on economic activity. Positive sign like stabilizing property prices and high recovery in equity market prices. Inflation rate had reduced to 3 per cent. The restructuring of financial sector perform very well. Malaysia external current account position was in surplus and foreign exchange reserve of over $ 30 billion which was equivalent to seven months of imports of goods and services (Enver Hakan Konac, 2000).

VI. Philippines

The Asian flu was transmitted to the Philippines through the sharp depreciation of the peso. The Thai baht was highly depreciated on July 2; the response of Philippines to this was very defensive. Philippines started selling it foreign exchange reserves. This immediate action of Philippines became ineffective and costly which led to lose of $ 1.5 billion peso. Finally Philippines devalued peso by 9.7 percent between the end of June and end of July. The Philippines growth rate was 5.8 percent in 1996 which became 5.2 percent in 1997 and it declined to -0.5 percent by 1998. The economic and financial impacts of the crisis clearly indicate that the transmission process is readily traceable. The peso depreciation increased the inflation rate, lowered the current account/GDP ratio, and the overall growth rate came down. The money supply fell down from 20.5 per cent in 1997 to 7.1 per cent in 1998. On the other hand, the fiscal condition of the country was in deficit in 1998 from surplus in 1997. In June 1997, the Bangko Sentral ng Pilipinas (the central Bank of the Philippines) had taken some measures to solve the problem of financial sectors by considering the regulatory and prudential weaknesses. In compare to other south east country Philippines was affected less from crisis. The country's recovery from the crisis was in a short period of time. (Alburo, F.A. 1999)[17]

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Alburo, F. A. (1999). The Asian Financial Crisis and Philippines Responses: Long-Run Considerations. *The Developing Economies ,* *XXXVII-4*, 439-59.

3.3.2.2. Mexican Crisis:

Mexico economic reform and deregulation started in second half of the 1980s.The Mexican crisis initiated in 1994-95. It is otherwise known as tequila crisis. The main reason for this crisis is peso devaluation in December 1994 which caused severe banking crisis in Mexican history (1995-97). In 1994 investors expectation from Mexico had changed which encourage capital flight. The central bank increased interest rate due to high volume of capital flight. Hence the borrowers could not pay their loan due to high interest rate, peso devaluation and destabilized the economy and banking system collapsed. The Mexican peso depreciates from 5.3 peso per dollar to 10 peso per dollar in between December 1994 and November 1995 (Musacchio, A. 2012). The GDP rate had declined to 6 per cent in1995.

3.3.2.3. Implications for Developing Countries:

In October 1998, developing countries in Latin America and Eastern Europe as well as Russia had run into crisis due to fall in stock market and rising interest rates. After one year of East Asian crisis i.e. 1998, Russian economy had fell into crisis due devaluation of ruble and meltdown in its foreign exchange and financial markets. Brazil was suffering weak fiscal and balance of payment condition and was affected immediately after the East Asian Crisis in early 1998 due to sudden stop in private foreign capital inflows. Capital flows stop coming to Brazil after Russian crisis in 1998. Russian 1998 foreign exchange crisis occurred due to meager fiscal condition. So Russia started implementing capital control and declared debt moratorium. Argentina suffered recession-turned-depression in 1998-2001 was not able to reduce high public and external debts. Turkey experienced currency crisis because Turkey economy could not meet public sector borrowing requirements in 1993. This led to currency crisis in Turkey in 1994. Thus transparent fiscal consolidation is required to avoid the risk of currency crisis. According to World Bank, the East Asian crisis cut Latin America's growth in 1998 by 1.0 percentage point.

International capital market declined drastically. Private capital flows to developing countries experienced a sharp decline immediately after the East Asian crisis. The world economy commodity prices declined. Both oil prices and non-fuel commodities prices fell in 1998. The price of non-fuel commodities reduce to more than 15 per cent level compare to previous year in March 1999. The industrial countries import demand for goods and services from developing countries had reduced.

3.3.2.4. Lesson from East Asian crisis:

The lesson learnt from East Asian crisis is that no doubt capital account liberalization become a means to achieve economic growth and reduce risks, but the benefits of this policy are limited, especially the countries with high saving rates. Strengthening the regulatory institutions plays a vital role in the implementation of financial and capital account liberalization.

Reforms should be obtained to stabilize short term capital flows and effectively address systematic bankruptcy should be given more weight. The past experience countries like England recommend that implementation of prudential limit on bank lending, capital adequacy requirements and currency matching conditions for assets and liabilities can avoid excessive risk-taking by banks. So the adverse effect of widespread default can be in control.

Government policy plays an important role to avoid crisis. It will play the vital role in the future. At the economic crisis time government intervention is necessary to restore the economy or else it might be a possibility of deep and prolong economic crisis. The developing countries have low capacity in regulatory environment and institutional structuring. Nevertheless a country with strong regulatory framework was also not enough to save them from the impact of major shocks.

Automatic stabilizers should be available very easily to deal with crisis. These stabilizers can be achieved with proper macroeconomic policies. In the advanced countries tax and welfare programmes are used as automatic stabilizers, but in low developed countries these type of instruments are either weak or absent.

Another main important factor that prevails to the occurrence of crisis is withdrawal of government support and retain of credit on working capital at the time of overcapacity. This should be avoided in future.

The Measure should be taken to enhance risk management capacity and low vulnerability in the longer-term strategy. In the capital market high innovation can be achieved by prudential and supervisory systems. The last but not the least the macroeconomic imbalances like unhealthy fiscal conditions and current account conditions, high volume of external debt especially short-term debt and unsustainable exchange rate policies country should deal with all these negative factors carefully.

3.4. Conclusion:

Although capital account liberalization can be highly beneficial in the long-run, our analysis of financial crises in emerging market economic shows that if the process is not managed properly, it can be harmful for the nation. If the banking regulatory/ supervisory structure and disclosure are not at an appropriate level when the liberalization is implemented, it creates problems of risk-taking behaviour. If such is the case, capital account liberalization will not behave as predicted.

The Tarapore committee has mentioned certain preconditions before moving towards full convertibility. These were fiscal consolidation, mandated inflation target and consolidation in the financial sector. However India has not fulfilled all the conditions. Even if India is able to fulfill all the prerequisites, the risk will only be reduced, not eliminated. India is still under the list of emerging nations. In order to avoid a crisis, policy makers should formulate proper infrastructure, which involves strong prudential regulation and supervision and reducing currency mismatch, before attempting to liberalize their financial system. The implementation of this policy takes time and proper preparation. The European nations, for instance, took thirty years to prepare their economy for open economy. India too, should not rush to implement this policy. It is more advisable to liberalize the economy gradually.

CHAPTER - IV

Relationship between Capital Account Openness and Economic growth: An Empirical Analysis

4.0. Introduction:

The capital account liberalization policy is considered as most important policy for economic growth. This policy has been recommended to developing countries for economic growth by the IMF. According to mainstream economists and international organization open capital account will able to create circumstances for economic growth by enhancing the economic efficiency and investment. The issue of economic liberalization has been divided into two parts, one is current account and the other one is capital account. Generally the current account liberalization has a positive impact on growth and welfare. As many countries have experienced the benefit of current account liberalization. But many countries have not implemented capital account liberalization, as it consists risk. However, in order to achieve complete globalization, capital account openness need to be achieved. In 1980s and 1990s, high amount of capital movement took place globally, which enhance the growth in developing countries. Concerning the capital account liberalization, many studies have approached the impacts on financial liberalization under a number of variables, such as economic growth, total factor productivity, income distribution, domestic investment, and inflation. The allocation efficiency has been predicted by the standard neo-classical growth model of Robert M. Solow (1956). Openness of capital account boosts country economic growth (Quinn, 1997). In developed as well as in developing nations capital account openness has a positive impact on economic growth (Quinn & Toyoda, 2008). India's government is planning to move for capital account liberalization. This country is considered as one of the most emerging nations in the recent period. Our main aim in this section is to find out the correlation between economic growth and capital account liberalization in case of India The empirical analysis of a study reveals the clear understanding of the issue and it gives better information through which reasonable inference can be taken. This study involves the time series data where the data are taken from different secondary sources. We have considered the time series data from the year 1972 to 2012 for estimation purpose.

4.1. Data and Methodology:

The data for financial development (FINDEV) and capital account openness (CAO) has been sourced from RBI, while the investment (INV), secondary school enrollment (SSE) and GDP per capita (GDPPC) data has been sourced from the World Bank. The time-series regression model has been constructed to measure the degree and direction of the relationship between the capital account openness and economic growth (GDPPC) . The Time series methodology involves the series of the test while estimating the regression and the time series models. The basic reason behind this is that the time series data generally observed at a regular time interval. The data over a period of time needs to check the fluctuations in its trend and the seasonal difference. Stationary test of the data is important to correct the trend and fluctuations in the data which make the series non-stationary. After the stationary test the co-integration analysis and a Vector Error Correction Model (VECM) has been employed as examined below.

4.2. Test of Stationarity:

Before employing any time series model, one has to test the stationarity properties of the time series variables. This study applies unit root tests to examine the stationarity properties of the variables. A stochastic process $\{y_t\}$ is said to be stationary if for all t and k,

(i) $E[y_t] = E[y_{t+k}] = \mu$ for all t

(ii) $Var(y_t) = Var(y_{t+k}) = \delta^2$

or, $E[(y_t - \mu)^2] = E[(y_{t+k} - \mu)^2] = \delta_y{}^2 = \gamma_0$

(iii) $Cov(y_t, y_{t+k}) = Cov(y_{t+j}, y_{t+j+k})$

or, $E[(y_t - \mu)(y_{t+k} - \mu)] = E[(y_{t+j} - \mu)(y_{t+j+k} - \mu)] = \gamma_k$

Where, $\mu, \delta_y{}^2$ and all γ_k are constants. The covariance may depend on *k*, the lag length. The above conditions are also referred as conditions of weak stationarity, second order stationarity or wide sense stationarity. A strongly stationary process need not have finite mean and variance (i.e. μ and/or γ_0 need not be finite).

A simple first order autoregressive process can be expressed by the following general equation:

$$y_t = \mu_0 + \mu_1 t + \alpha y_{t-1} + \varepsilon_t \qquad \ldots(4.1)$$

Where, *{yt}* is the stochastic process, μ_0, μ_1 and α are parameters and ε_t is a random disturbance term with white noise properties. μ_0 is called drift or constant or intercept. The nature of the time series described by the equation (4.1) depends on the parameter values. If $\mu_1 \neq 0$ and $|\alpha| < 1$, then y_t follows a deterministic trend. The presence of autoregressive component, αy_{t-1}, will mean that there may be short-run deviations, but the series will return to trend eventually. A series of this sort is known as a trend stationary (TS) process, as the residuals from the regression of y_t on a constant and a trend will be stationary. If $\mu_0 = 0$, $\mu_1 = 0$ and $\alpha = 1$, the series is said to follow a simple random walk, a unit root process. If $\mu_0 \neq 0$, $\mu_1 = 0$ and $\alpha = 1$, the series is said to follow a random walk with drift. Any stochastic process, which becomes stationary after differencing once, is called a difference stationary (DS) process, for e.g. a simple random walk process is a DS process. Likewise, any time series, which becomes stationary after de-trending is called a TS process.

In time series literature, there are both formal and informal tests of stationarity. The informal tests include time series plots and use of correlogram. Statistical packages use Box-Pierce Q-statistics and Ljung-Box (LB) Q-statistics for testing stationarity of a series. These two statistics are based on autocorrelation coefficients of several lag lengths. The formal tests of nonstationarity are also known as unit root tests or test of random walk series. These include the Dickey-Fuller (DF), Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests to check the presence of unit root in the data. These tests are necessitated because the usual Student's t-test is inappropriate to test the null hypothesis.

4.2.1. Dickey-Fuller and Augmented Dickey-Fuller Tests:

The basic Dickey-Fuller (DF) test examines whether the value of the parameter $\alpha = 1$ in equation (4.1), in other words, whether the underlying first order difference equation has a unit root. Specifically, assuming the absence of trend term in equation (4.1) and rewriting it in a modified form as below:

$$\Delta y_t = \mu_0 + \delta y_{t-1} + \varepsilon_t \qquad \dots (4.2)$$

Where, $\Delta y_t = y_t - y_{t-1}$. The null hypothesis is that the $\{y_t\}$ process has a unit root, i.e. H_0: $\delta = \alpha - 1 = 0$. Since $-1 \leq \alpha \leq 1$, it follows that $-2 \leq \delta \leq 0$.

More generally, if the given time series follows a pth order autoregressive process [AR(p)] or even autoregressive moving average process [ARMA(p,q)], an extended Dickey-Fuller test called augmented Dickey-Fuller (ADF) test. Specifically, if the original time series follows AR(p), it can be represented as,

$$y_t = \mu_0 + \sum_{i=1}^{p} \alpha_i y_{t-i} + \varepsilon_t \qquad \dots (4.3)$$

After suitable mathematical manipulation, Equation (4.3) can be rewritten as,

$$\Delta y_t = \mu_0 + \delta y_{t-1} + \sum_{i=2}^{p} \beta_i \Delta y_{t-i+1} + \varepsilon_t \qquad \text{... (4.4)}$$

where $\delta = -(1 - \sum_{i=1}^{p} \alpha_i)$ and $\beta_i = \sum_{j=i}^{p} \alpha_j$.

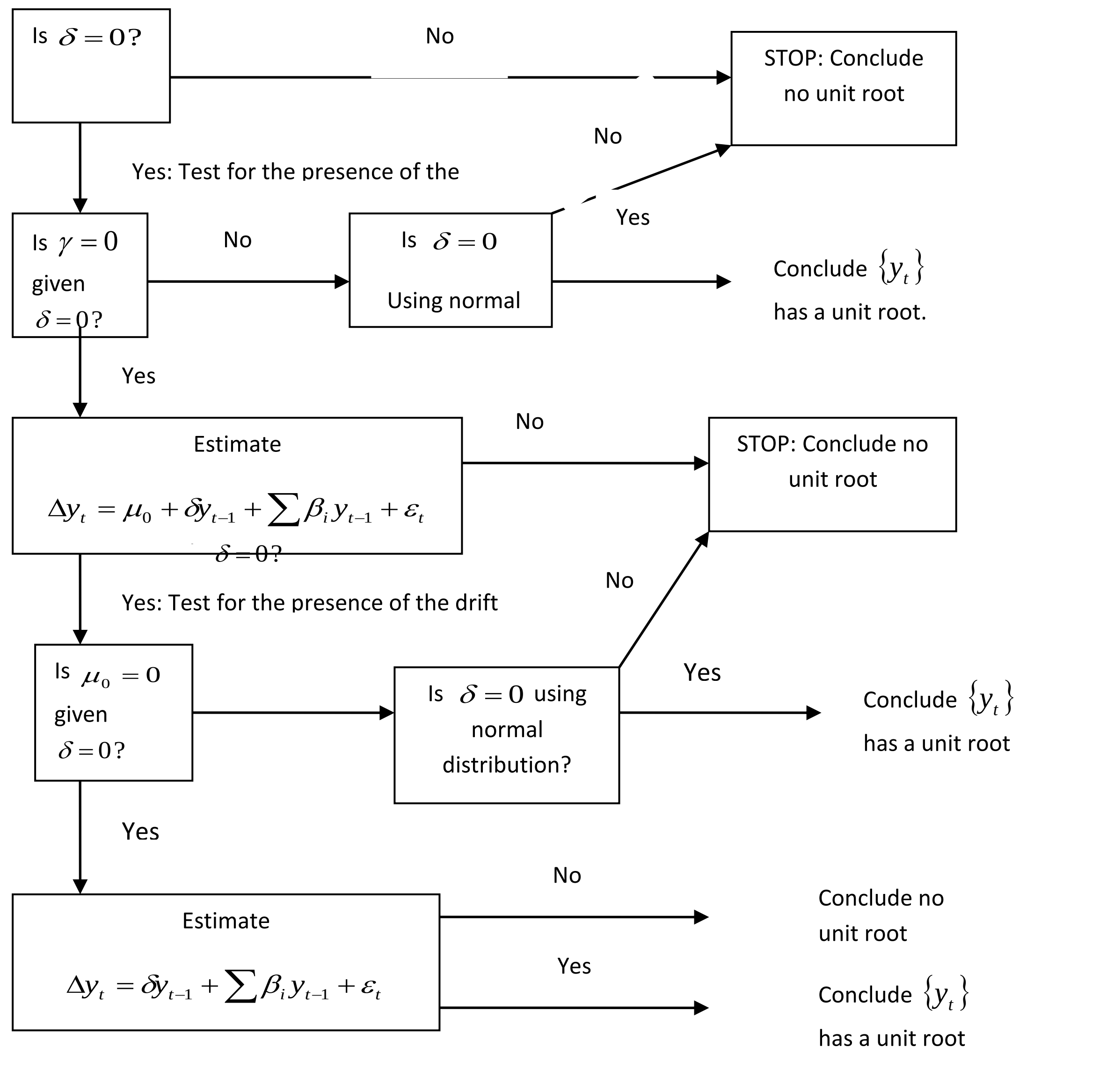
Equation (4.4) is also recommended if the residuals sequence, $\{\varepsilon_t\}$ in equation (4.2), is not a white noise, for e.g. when ε_ts are autocorrelated. There are different forms of DF and ADF tests, which are possible by including trend terms in equations (4.2) and (4.4), and also excluding drift (intercept or constant) term, μ_0, from these equations. The DF test is a special case of the ADF test when $p = 1$. To test the significance of δ in equations (4.2) and (4.4), the usual Student's t-statistic critical values cannot be used. Initially, Dickey-Fuller and later MacKinnon has developed the appropriate test statistic, known as τ-statistic, and its critical values by using Monte Carlo simulations. The critical values of τ-statistic are made available under alternative assumptions of drift, trend, sample size and level of significance. They are abbreviated as τ (no drift and no trend), τ_μ (only drift) and τ_τ (with both drift and trend). Dickey-Fuller have also provided the critical F-test values, known as Φ_1, Φ_2, and Φ_3, for pair-wise joint tests of significance for μ_0 and μ_1. Thus, the null hypothesis that $\delta = 0$ can be rejected if the computed t-value for the coefficient δ is greater than the critical τ-value in absolute magnitude. It has been shown that the same DF test critical values are valid for the ADF test as well.

4.2.2. Phillips-Perron Test:

One of the important assumptions of DF test is that error terms are uncorrelated, homoscedastic as well as identically and independently distributed (iid). Phillips and Perron (1988) have modified the DF test, known as PP test, which can be applied to situations where the above assumptions may not be valid. Another advantage of PP test is that it can also be applied to frequency domain approach, which is more recent and an alternative to the usual time domain approach, to time series analysis. The derivation of the PP test statistic is quite involved and hence not given here. The PP test has been shown to follow the same critical values as that of DF test, but has greater power to reject the null hypothesis of unit root. However, the PP test seems to be biased towards rejecting the null hypothesis of a unit root, when the error series follows a negative moving average process. In such situations, it is recommended to use the ADF test, rather than the PP test.

Figure. 4.1 Flow chart for ADF unit root test:

Estimate $\Delta y_t = a_0 + \gamma y_{t-1} + a_2 t + \sum \beta_i \Delta y_{t-i} + \varepsilon_t$



Source: Enders (1995), p. 257.

More recently, Kwiatkowski, Phillips, Schmidt and Shin (1992), known as KPSS, have proposed one more unit root test, which has stationarity of the series as the null hypothesis against the alternative of unit root, quite opposite to the earlier tests.

4.3. Simple Bi-variate Granger's Causality Test:

The short run dynamic linkage between the financial openness and economic growth may be examined by using the concept of Granger's (1969) causality test. Granger's causality may be defined as the forecasting relationship between two variables proposed by Granger (1969) and popularized by Sims (1972). In a brief sense, Granger causality test states that if S & E are two time series variable and if past values of a variable 'S' significantly contribute to forecast the value of another variable 'E' then 'S' is said to be Granger cause 'E' and vice versa. The test involves with the following two regression equations

$$S_t = \gamma_0 + \sum_{i=1}^{n} \alpha_i E_{t-i} + \sum_{j=1}^{n} \beta_j S_{t-j} + u_{1t} \qquad \text{... (4.5)}$$

$$E_t = \gamma_1 + \sum_{i=1}^{m} \lambda_i E_{t-i} + \sum_{j=1}^{m} \delta_j S_{t-j} + u_{2t} \qquad \text{... (4.6)}$$

Where S_t and E_t are the financial openness indicator and economic growth to be tested, and u_{1t} and u_{2t} are mutually uncorrelated white noise errors, and t denotes the time period. Equation (4.5) postulates that current S is related to past values of S as well as of past E. Similarly, equation (4.6) postulates that E is related to past values of E as well as related to past values of S. The null hypothesis for equation (4.5) is that there is no causation from S to E, thus the coefficients on the lagged S are not significant, $\sum_{j=1}^{n} \beta_j = 0$. Similarly, the null hypothesis for equation (4.6) is that there is no causation from E to S, thus the coefficients of lagged E are not significant, $\sum_{j=1}^{n} \delta_j = 0$. Three possible conclusions that can be derived from such analysis include unidirectional causality, bi-directional causality and are independent to each other.

Two important steps are involved with the Granger's causality test. Firstly, stationary data is required for equation (4.5) and (4.6). Secondly, in addition to the need for testing the stationary property of the data, the Granger methodology is somewhat sensitive to the lag length used in equation (4.5) and (4.6). For selecting the appropriate lag length, there are various lag length criteria available such as Akaike's information criteria (1969, 1970), Final prediction error, Likelihood ratio test etc.

As discussed at the onset, the traditional bivariate granger causality test has its own limitations. First, a two variable Granger causality test without considering the effect of other variables is subject to possible specification bias. As pointed out by Gujarati (1995), a causality test is sensitive to model specification and the number of lags. It would reveal different results if it was relevant and was not included in the model. Because of this problem, the empirical evidence of two variables Granger causality are fragile. Second, time series data are often non stationary. This situation could exemplify the problem of spurious regression. Gujarati (1995) had also said that when the variables are integrated, the F-test procedure is not valid, as the test statistics do not have a standard distribution. In this direction, because of the probable shortcomings of specification bias and spurious regression, this study has not carried out the traditional bivariate granger causality procedure to test the short term dynamic interaction between the financial markets at all the levels such as domestic, regional and global.

4.3.1. Toda and Yamamoto's VAR Procedure:

Toda and Yamamoto (1995) procedure was developed to improve the power of Granger causality test. Toda and Yamamoto procedure is a methodology of statistical inference, which makes parameter estimation valid even when the VAR system is not co-integrated. Their major contribution here is the construction of Wald statistic to test the null hypothesis. Wald tests could be used for testing causality in a VAR or VEC set up in a number of ways. Causality within VAR models is tested depending on the pre-testing for unit roots and co-integration. When the series are stationary then a VAR model in levels is constructed. If the variables are difference stationary or integrated of the order one I(1), the VAR is specified in first difference. If the series are co-integrated, vector error correction (VECM) models are used. Alternatively, a modified Wald test for causality using SUR system proposed by Toda and Yamamoto (1995) may be employed.

Sims, Stock, and Watson (1990) and further Toda and Phillips (1993) show that when the variables are co-integrated of order one, Wald tests of Granger non-causality in levels VAR could be used based on the error correction model. The Wald tests are valid asymptotically if there is one co-integrating vector among the variables. This procedure called the sequential Wald tests are shown to have good properties across a number of specifications (Toda and Phillips, 1993). As Granger representation theorem suggests if the variables are co-integrated then there must be a causal relationship among them running at least in one direction.

Alternatively Toda and Yamamoto (1995) and Dalado and Lutkepohl (1996) have proposed a modified Wald test for causality on an augmented VAR in levels. This procedure intentionally over-fits the model with additional lags so that the resulting VAR has the order of $p = k + d$, where k is the optimal lag order irrespective of the order of integration and co-integration. Conventional Wald tests could be applied to the first k coefficient matrices using the standard χ^2 statistics, which is free of the problem of invalid asymptotic properties of Wald tests in the presence of non-stationary series. Swanton et al (2001) show that modified Wald test performs well irrespective of the co-integration properties, whereas the sequential Wald tests (Toda and Phillips (1993, 1994) performs well in co-integrated data. Thus, this study has employed Toda and Yamamoto Granger's Causality test in the VAR Block Exogeneity form to examine the short term interlinkages between the financial markets.

4.4. Johansen Maximum Likelihood Procedure:

Engel-Granger co-integration procedure will have a problem if there is more than one co-integrating vector present in a vector of variables. If the number of variables exceeds two, we cannot rule out the possibility of more than one co-integrating vector. So in a multivariate system, the Engel-Granger approach will not be the appropriate method to use. Johansen (1988) Maximum Likelihood Procedure is the appropriate method to test co-integration among a vector of variables. This procedure estimates co-integrating relationship in a system of equations unlike single equation method of Engel-Granger. Thus, it makes use of all the available information in the long run and short run fluctuations of each variable and allows for testing of more than one co-integrating vector.

Like Engel-Granger technique, it requires that the variables should be integrated of same order. Although forms of the Johansen tests can detect differing orders of integration, it is wise not to mix variables with different orders of integration. The second important requirement is selection of lag length as Johansen procedure is quite sensitive to the lag length. One can use Likelihood Ratio test to select lag length. Alternatively lag length can be selected using multivariate generalization of the AIC or SBC.

The Johansen test for co-integration begins by considering the unrestricted reduced form of a system of variables, which by assumption, can be represented as a finite order Vector Auto Regression (VAR) model.

$$x_t = A_0 + A_1 x_{t-1} + A_2 x_{t-2} + \dots\dots\dots\dots + A_p x_{t-p} + \varepsilon_t \qquad \dots(4.7)$$

Where, x_t = the (n$\times$1) vector $(x_{1t}, x_{2t}, \dots\dots\dots, x_{nt})'$

A_0 = an (n$\times$1) vector of constants.

A_i = an (n$\times$n) matrix of parameters.

ε_t = an independently and identically distributed n-dimensional vector with mean 0 and variance Σ_ε.

The equation (4.7) can be reformulated into a Vector Error Correction Model (VECM) form:

$$\Delta x_t = A_0 + \sum_{i=1}^{p-1} \pi_i \Delta x_{t-i} + \pi x_{t-p} + \varepsilon_t \qquad \text{...(4.8)}$$

$$\pi = -\left[I - \sum_{i=1}^{p} A_i \right]$$
$$\pi_i = -\left[I - \sum_{j=1}^{k} A_j \right]$$

Where I = an (n×n) identity matrix.

The equation (4.8) contains information on both the short run and long run adjustment to change in x_t, via the estimates of π_i and π respectively. As it is shown in Johansen (1988), $\pi = \alpha\beta'$, where α represents the speed of adjustment to disequilibrium, while β is a matrix of long run coefficients such that the term $\beta' x_{t-k}$ embedded in (4.8) represents up to n-1 co-integrating relationship in the multivariate model which ensure that the x_t converge to their long run steady state solutions. Hence the matrix β is the matrix of co-integrating parameters and α is the matrix of the speed of adjustment parameters.

The key feature to note in (4.8) is the rank of π; the rank of π is equal to the number of independent co-integrating vectors. If rank (π) = 0, the matrix is null, so there is no co-integration among the set of n variables, that means, there is no linear combination of variables that is stationary. Hence the equation (4.8) will become a usual VAR model in first differences. Instead, if rank (π) = n, the vector process is stationary, that means there are 'n' linear independent combinations of x_t that are stationary. So in this case all the variables are stationary. In the intermediate case, if rank (π) = 1, there is a single co-integrating vector and the expression πx_{t-p} is the error correction factor. For other cases in which 1< rank (π) < n, there are multiple co-integrating vectors.

The number of distinct co-integrating vectors can be obtained by checking the significance of the characteristic roots of π. The number of co-integrating vectors is equal to the rank of the matrix π and the rank of the matrix is equal to the number of characteristic roots that differ from zero. The Johansen methodology allows determining the number of characteristic roots that are statistically different from zero. If the variables in x_t are not co-integrated, the rank of π is zero and all the characteristic roots (λ_i) will equal to zero. In practice, one can obtain only estimates of π and the characteristic roots. The test for the number of characteristic roots that are insignificantly different from unity can be conducted using the following two test statistics:

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^{n} \ln(1-\hat{\lambda}_i)$$

$$\lambda_{\max}(r, r+1) = -T \ln(1-\hat{\lambda}_{r+1})$$

Where, $\hat{\lambda}_i$ = the estimated value of the characteristic roots (also called eigen values) obtained from the estimated π matrix.

T = the number of usable observation.

r = the number of co-integrating vectors.

When the appropriate values of 'r' are clear, these statistics are simply referred to as 'λtrace' and 'λmax'. The first statistic tests the null hypothesis that the number of distinct co-integrating vectors is less than or equal to 'r' against a general alternative. It is clear that λtrace equals zero when all λ_i = 0. The second statistic tests the null hypothesis that the number of co-integrating vectors is r against the alternative of r+1 co-integrating vectors. Johansen and Juselius (1990) provide the critical values of the λtrace and λmax statistics. The estimated values of the above two statistics are compared with the Johansen and Juselius critical value to determine the number of co-integrating vectors exist among the variables. One of the most interesting aspects of the Johansen procedure is that it allows for testing restricted forms of the co-integrating vector (s). One can impose restrictions on the co-integrating vectors or adjustment coefficients, and accordingly conclude whether restrictions are binding or not by using a statistic, which is proposed by Johansen.

If the test statistics indicate that one co-integrating vector exists, Maximum Likelihood estimates of this vector are given by the first column of β. Hence the VECM representation is given by:

$$\Delta x_t = A_0 + \sum_{i=1}^{p-1} \pi_i \Delta x_{t-i} + \alpha ecm_{t-1} + \varepsilon_t \qquad \ldots(4.9)$$

Where $ecm_{t-1} = \beta x_{t-1}$ and $\beta = [\beta_1, \ldots\ldots\ldots, \beta_n]$

Again if test indicates that two co-integrating vectors exist, then the first two columns of β are the maximum likelihood estimates of these vectors, and VECM is given by:

$$\Delta x_t = A_0 + \sum_{i=1}^{p-1} \pi_i \Delta x_{t-i} + \alpha_1 ecm_{1t-1} + \alpha_2 ecm_{2t-1} + \varepsilon_t \qquad \ldots(4.10)$$

Here α_1 and α_2 represent the effects of the stationary linear combination of ECM1 and ECM2 on the system; otherwise they are called as speed of adjustment parameters. This VECM can be used to test Granger causality among the vectors of variables, by testing the statistical significance of adjustment coefficients and coefficients of the lagged explanatory variables.

4.5. Variables Descriptions:

Table 4. 1 Description of Variables:

Variables	Full form
LNGDPPC	Log of GDP per capita
LNCAO	Log of capital account openness
LNFINDEV	Log of financial development
LNINV	Log of Investment
LNSSE	Log of Secondary School Enrolment

4.6. Data Analysis and Results:

For the analysis purpose we have converted all the variables into natural log for statistical reason. It will help to eliminate undesirable assumption like to avoid heteroscedasticity. The log variable estimates elasticity. In the beginning of our modeling, first we have to find out the summary statistics and correlation matrix, before going to the modeling of data set.

Table 4. 2 Descriptive Statistics:

	LNGDPPC	LNCAO	LNFINDEV	LNINV	LNSSE
Mean	6.165407	-3.040928	-1.406884	3.224446	3.737602
Median	6.069975	-3.245610	-1.318626	3.171782	3.802339
Maximum	7.005708	-0.696149	0.341671	3.660994	4.262680
Minimum	5.633267	-4.473346	-3.469742	2.890372	3.236716
Std. Dev.	0.422723	1.302766	1.149425	0.226659	0.288276
Skewness	0.489934	0.390685	-0.183122	0.595215	-0.124271
Kurtosis	2.050301	1.624655	1.850560	2.296033	2.173100
Jarque-Bera	2.948278	3.961677	2.304298	3.028428	1.180435
Probability	0.228976	0.137954	0.315957	0.219981	0.554207
Sum	234.2855	-115.5553	-53.46160	122.5290	142.0289
Sum Sq. Dev.	6.611691	62.79640	48.88358	1.900842	3.074807
Observations	38	38	38	38	38

The above table represents the descriptive statistics of the variables. The table reveals the mean, median, and standard deviation of each series, the maximum and minimum values, as well as the skewness, kurtosis and Jarque-Bera test of every series. The mean, median and standard deviation values for LNGDPPC are 6.16, 6.06 and 0.42 respectively. The minimum and the maximum values for the series are 5.63 and 7.00. The coefficient of skewness and Kurtosis measures the symmetric and peaked or flat of the data set. The value of kurtosis for LNGDPPC is 2.05, means the series is platykutic. The coefficient of skewness is 0.48 this implies the variable is positively skewed. The Jarque-Bera value for LNGDPPC 2.94 means the series is not normally distributed. The LNCAO series has mean and median values of -3.04 and -3.24 respectively. The minimum value is -4.47 and the maximum value is -0.69, the standard deviation is 1.30. The coefficient of skewness is 0.39 which indicates the series of LNCAO is positively skewed and the coefficient of kurtosis is 1.62 which means it is platykutic. The mean, median value of the series LNFINDEV is -1.40 and -1.31. The minimum and maximum value is -3.4 and 0.34 whereas the standard deviation is 1.14. The coefficient of skewness, kurtosis and Jarque-Bera test values are -0.18, 1.85 and 2.30 which means it is negatively skewed, platykutic and is not normally distributed. The mean and median for the series LNINV is 3.22 and 3.17. The minimum and maximum value is 2.89 and 3.66 while the standard deviation is 0.22. The coefficient of skewness is 0.59, it is positively skewed and the coefficient of kurtosis is 2.29 that mean it is platykurtic. The Jarque-Bera test values are 3.02 which means it is not normally distributed. The mean, median and standard deviation values for LNSSE are 3.73, 3.80 and 0.28. The minimum and maximum value of the series is 3.23 and 4.26. The coefficient of skewness is -0.12, meaning that it is negatively skewed. The coefficient of kurtosis is 2.17, means it is platykurtic and the Jarque-Bera test values are 1.18 which means the series is not normally distributed.

Table 4. 3 Correlation Matrix:

	lngdppc	Lninv	Lnsse	lnfindev	Lncao
lngdppc	1				
Lninv	0.93*	1			
	(0.00)				
Lnsse	0.96*	0.92*	1		
	(0.00)	(0.00)			
lnfindev	0.96*	0.91*	0.98*	1	
	(0.00)	(0.00)	(0.00)		
Lncao	0.94*	0.84*	0.84*	0.86*	1
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Note: figures in parentheses () are respective p- values

* indicates level of significance level at 1%

The other way to look the relationship among variables is correlation matrix. The correlation analysis tells about the linear relationship among the variables while the correlation coefficient tells about the degree of linear association among the variables. The above table reveals the correlation matrix of our variables such as LNGDPPC, LNSSE, LNCAO, LNINV, and LNFINDEV. The correlation matrix should lies between -1 to +1. The significant level is 1%.

The star (*) sign shows the significant of correlation coefficient at 1% level. The result shows the positive correlation among all the variables. This shows only the linear correlation. It does not give any idea about the cause and effect relationship among the variables, which has been tested by applying Johansen co-integration test and Granger's causality test in order to check the long-run equilibrium relationship and causality among the variables respectively.

Table 4. 4 Stationary Test (Intercept and trend):

	Level		First Difference	
	ADF	PP	ADF	PP
LNGDPPC	-0.843488 (3)	-0.637827 (2)	-7.575243 (3)	-9.767359 (7)
LNINV	-3.287241 (3)	-3.314531 (3)	-9.212722 (3)	-9.795519 (2)
LNFINDEV	-1.183421 (3)	-0.811155 (4)	-7.478108 (3)	-9.126350 (5)
LNSSE	-1.927643 (3)	-1.889896 (4)	-4.466408 (3)	-9.126350 (5)
LNCAO	-2.620870 (3)	-2.566516 (3)	-4.988796 (3)	-5.088540 (4)

This table represents the result for stationary test. We have applied Augmented Dickey-Fuller (ADF) and Phillips and Peron test to test the null hypothesis of unit root test and an alternative hypothesis of stationary. The main aim is to identify whether the mean and variance of the series are zero and the covariance is constant across different samples. We have also utilized ADF and PP to see whether the parametric and non-parametric way of resolving the problem of serial correlation in the stated equations can lead to differences in the conclusion for the series. To make decision regarding the hypotheses we compare the test statistic given in (table) with the critical values at 1%, 5% and 10% respectively. The level result for ADF and PP shows that all the variables have unit root at 1% and 5% level of significance only. On the other hand the first difference of the series shows that all variables are stationary.

Now we have identified the order of integration and we have identified all variables are integrated of order one and satisfied the condition any to check if there is presence of co-integrating vectors among the variables. If co-integration is found, it means there exist a long-run association among the variables. The economic interpretation of the co-integration is that it measures the level of diversification in the economy; this means that the more co-integrating vectors a system has, the more an economy is diversified. In order to investigate the long run association among the variables, we have applied the Johansen (1992) test of co-integration.

Before proceeding for co-integration analysis, we have to find out the most appropriate maximum lag length for the variables in the VAR framework. In order to find out the optimum lag length, we have run different lag augmentation criterion such as sequential modified likelihood ratio test statistic, final prediction error, Akaike information criterion, Schwarz information criterion, and Hunnan Quinn information criterion. The results of the optimum lag as mentioned by the above criterions are reported in the Table 4.5.

Table 4. 5 Lag length selections for co-integration:

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-68.66	NA	2.41e-08	-3.35	-3.13	-3.27
1	-318.38	420.56	1.79e-13	-15.17	-13.85	-14.71
2	-365.0	66.25*	6.15e-14	-16.31	-13.94*	-15.47*
3	396.26	36.19	5.37e-14*	-16.64*	-13.19	-15.41

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

4. 6 Johansen Co-integration Test (lag 1 to 2):

Null Hypothesis	Alternative Hypothesis		Critical Values		
λ Trace Test	λ Trace Test	λ Trace Value	5%	1%	Decision
r = 0	r > 0	96.61	69.81	77.81	Reject null hypothesis
r ≤ 1	r > 1	50.10	47.85	54.68	Reject null hypothesis
λ Max Test	λ Max Test	λMaxValues			
r = 0	r = 1	46.99	33.87	39.37	Reject null hypothesis
r = 1	r = 2	27.25	27.58	32.71	Accept

Note: r is the co-integrating vector.

The above Table: 4.6 presents the result for the co-integration analysis and to check the best assumption that fit the data generation properties (DGP) of the series, we employed the pantula principle which defines that we can run all the five assumptions and select from them the one that present the highest co-integrating vectors. We have reported the result in the above table by running the assumption (3) i.e. Intercept (no trend) in CE and test VAR. The test of trace statistics indicates that the null hypothesis of variables is not co-integrated ($r = 0$) against the alternative hypothesis of one or more co-integrating vector ($r > 0$). As 96.61 is more than the 5% and 1% critical value of trace statistics, we can reject the null hypothesis of no co-integrating vectors and accept the alternative of one or more co-integrating vectors. After that we can apply the trace statistic (1) to test the null hypothesis of $r \leq 1$ against the alternative of two co-integrating vectors. The λ trace statistic is 50.1 which is greater than the 5% critical value, but 1% critical value is higher than this. As we generally take into account the 5% critical value, hence we can conclude that there are two co-integrating vectors. On the other hand, we can use the λ max statistic where the null hypothesis of no co-integrating vectors ($r = 0$) against the alternative hypothesis $r = 1$ which is already rejected. The λ max statistic (0, 1) = 46.99 higher than 5% and 1% critical values. Hence the null hypothesis will be rejected. In order to test $r = 1$ against the alternative hypothesis of $r = 2$, the value of λ max (1,2) is 27.25 which is lower than the critical values at 5% and 1% significant levels are 27.58 and 32.71 respectively. So we will accept the null hypothesis, meaning that there are no two co-integrating vectors. Therefore, it can be concluded that there is only one co-integrating vector exists among the variables.

Table 4. 7 Long -run Co- integration Equation:

LNGDPPC	LNFINDEV	LNCAO	LNINV	LNSSE
1	0.214191 (0.05759)	-0. 141066 (0.01709)	-1.053401 (0.19607)	-1.168066 (0.26086)

Note: figures in parentheses () are respective p- values

As we found the long run association among variables, the further step is to present the long run co-integrating equations attached to the vectors. Here we assumed LNGDPPC as the explained variable and there are four explanatory variables, out of four explanatory variables, LNCAO, LNINV, and LNSSE are indicating negative relationship with LNGDPPC, which means when LNCAO, LNINV and LNSSE will increase, LNGDPPC will decline and vice-versa. On the other side, LNFINDEV has positive relationship with LNGDPPC, which means when LNFINDEV will increase LNGDPPC will also increase.

Table 4. 8 Vector Error Correction Model:

Error Correction	D(LNGDPPC)	D(LNCAO)	D(LNFINDEV)	D(LNSSE)	D(LNINV)
CointEq1	-0.232469 (0.04260) [-5.45649]	-0.501136 (0.43816) [-1.14374]	0.079289 (0.05429) [1.46051]	-0.014674 (0.05934) [-0.24728]	0.023016 (0.18402) [0.12508]

Note: figures in parentheses () are respective p- values

The co-integrating equation and the long run equation were presented above; the next step is to present the coefficient for the speed of adjustment towards long-run equilibrium which represents the dynamics that correct the short run disequilibrium in the system. The theoretical assumption is that the coefficient sign must be negative and statistically significant. The error correction term shows negative sign and significant for GDP per capita and SSE. This implies these two variables do not have problem of adjustment in the long-run.

4.7. Causality Test:

The next step is to find the causal relationship among the variables. In order to examine this we have applied the Toda and Yamamoto (1995) procedure to test for Granger causality in the vector Auto Regression (VAR) block exogeneity form. In order to get into the appropriate maximum lag length for the variables in the VAR, we have utilized different lag augmentation criterions such as Sequential Modified Likelihood Ratio test statistic, Final Prediction Error, Akaike Information Criterion, Schwarz information criterion, and Hannan Quinn information criterion. The optimum lag results are reported in the Table 4.9.

Table 4. 9 Lag Length Criterion For Granger's Causality Test:

Lag	LogL	LR	FPE	AIC	SC	HQ
0	72.14126	NA	1.65e-08	-3.730070	-3.510137	-3.653307
1	308.3634	393.7036	1.34e-13	-15.46463	-14.14504	-15.00406
2	356.7591	67.21627*	3.99e-14	-16.76440	-14.34513*	-15.92001
3	387.8662	34.56345	3.58e-14	-17.10368	-13.58475	-15.87548
4	426.2883	32.01835	2.83e-14	-17.84935	-13.23075	-16.23733
5	475.8218	27.51864	2.09e-14*	19.21232*	-13.49406	-17.21650*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

The above table shows that the majority of lag length criterion suggesting that 5 periods as the optimum lag length. Hence, we considered 5 periods lag as the optimum lag length to investigate the causality test among the variables in the form of VAR block exogeneity test. The results are reported in the Table: 4.10.

Table 4. 10 VAR Block Exogeneity Test (Causality Analysis):

Dependent variable	Excluded	Chi-sq	df	Prob.
LNGDPPC	LNCAO	12.29403	5	0.0310
	LNINV	25.17961	5	0.0000
	LNSSE	10.41962	5	0.0642
	LNFINDEV	26.24605	5	0.0000
	All	83.54796	20	0.0000
LNCAO	LNGDPPC	8.770599	5	0.1186
	LNINV	3.022765	5	0.6965
	LNSSE	1.286692	5	0.9363
	LNFINDEV	2.773667	5	0.7348
	All	21.74426	20	0.3545
LNINV	LNGDPPC	9.42003	5	0.0934
	LNCAO	2.806450	5	0.7298
	LNSSE	16.80041	5	0.0049
	LNFINDEV	4.659621	5	0.4588
	All	41.64869	20	0.0031
LNSSE	LNGDPPC	5.297453	5	0.3807
	LNCAO	9.097252	5	0.1052
	LNINV	2.935504	5	0.7099
	LNFINDEV	4.408765	5	0.4922
	All	32.71917	20	0.0362
LNFINDEV	LNGDPPC	23.56605	5	0.0003
	LNCAO	11.90932	5	0.0361
	LNINV	2.320245	5	0.8033
	LNSSE	4.834743	5	0.4364
	All	54.84869	20	0.0000

From the above table, the result indicates that GDP per capita and capital account openness and from GDP per capita to SSE, while there is bidirectional causality from GDP per capital to financial development and from GDP per capita to Investment. Hence, economic growth and capital account openness have unidirectional causality.

4.8. Findings of the Result:

- The long-run co-integrating equation reveals that there is positive long-run association between GDP per capita and financial development, while the other variables such as capital account openness, secondary school enrollment and investment is showing negative association with GDP per capita. The error correction term shows negative sign and significant for GDP per capita and SSE. This implies these two variables do not have problem of adjustment in the long-run.
- For the causality testing, we have applied VAR Granger's causality test which indicates there is unidirectional causality running from GDP per capita to CAO and from GDP per capita to SSE, while there is bidirectional causality from GDP per capital to financial development and GDP per capita to Investment.

4.9. Conclusion:

The issue of capital account openness is an ongoing debate in India. This section has investigated the impact of capital account openness on economic growth in case of India both in short- run as well as in long-run. We have applied Johansen co-integration for long-run association and VECM for short run dynamics. The study has applied the co-integration and VAR causality test to find out the relationship between capital account openness and economic growth. The result indicates that there is co-integrating relationship between capital account openness and economic growth and the VECM error correction term represents the speed of adjustment towards long-run equilibrium. The error correction term shows negative sign and significant for GDP per capita and SSE. This implies these two variables do not have problem of adjustment in long-run. The result through Toda and Yamamoto (1995) procedure to test for Granger causality in the Vector Auto Regression (VAR) block exogeneity from indicates that there is unidirectional causality between economic growth and capital account openness.

CHAPTER - V

Summary of Findings and Scope for Further Research

5.0. Summary of Major Findings:

In this study, we have discussed the issues of capital account openness with regard to India. In the beginning of this thesis, the historical process of financial integration globally has been outlined briefly. The first chapter addresses the background of the study, objectives of the study and description about the variables and methodology. The main objective of this study has been to analyze India's current situation with regard to the preconditions given by the Tarapore Committee for the movement of capital account convertibility. In addition to this, we have empirically examined whether capital account openness can lead to economic growth in India. In order to test this objective, we have considered GDP per capita as the dependent variable while the independent variables are investment (INV), secondary school enrollment (SSE), financial development (FINDEV) and capital account openness. The capital account openness considered is based on the measure of de facto financial integration created by Lane and Milesi-Ferretti (2003).

The next chapter contains a review of existing literature. Numerous studies have discussed various aspects of this issue. But in this study, we have considered literature for and against the implementation of capital account openness. This chapter is divided into three sections: studies in favour of capital account openness, studies against capital account openness, and the critical analysis of the reviews. Most of the studies have highlighted the issue of capital account openness on cross sectional basis in case of both developed as well as developing countries. The Alesina, Grill & Milessi-Ferretti (1994), Grill & Milessi-Ferretti (1995), Rodrik (1998), Karray (1998) have found no impact of capital account openness and economic growth in case of both developed as well as developing countries. However, Klein and Olivei (2000) and Kennedy, A. (2013) have found that there is no impact of capital account openness on economic growth in case of developing countries and positive impact for developed or, industrial countries. Saidi, H (2010) has found that capital account openness impacts economic growth negatively in the case of non-OECD countries and positively in OECD countries. But the study of Quinn (1997), Edwards (2000), Quinn & Toyoda (2008), Bakeart, et al. (2005, 2011), Levine, R. (2005) have found the positive impact of financial openness on economic growth.

In the second chapter, we have further analyzed critically the empirical results of different studies concerning the relation between capital account openness and economic growth. However, the result is mixed and inconsistent. So we have critically analyzed the reasons behind the contrasting results. The first reason is that the sample size is not same for all studies. The second reason is that the observation period is not equal across studies. Another important reason is that variables selected for each study are not similar. The selection of variables depends on the conditions specific to the country. The last reason for contrasting result depends on the application of econometric methodologies.

The third chapter of this thesis elaborates on whether India is ready for capital account openness or not. The study has examined this objective on the basis of recommendations given by the Tarapore Committee. We have analyzed this section on the basis of three focal questions. The first question is that of the problems the country will face if it implements capital account openness immediately without the prior preparation necessary for the implementation of this policy. The next question concerns India's readiness for the open capital account. We have investigated this question by taking into account the pre-conditions and procedure suggested by the Tarapore Committee. We have analyzed the current economic conditions of India and looked at whether it fulfills all the conditions according to the report given by the Tarapore Committee. The next question is that of what can be learnt from the emerging nations who have implemented this policy. This question has been answered by discussing the East-Asian crisis; Mexican Crisis, Russian Crisis. After discussing all these research questions, we have arrived at the conclusion that India's economic condition is likely to progress in the near future. However, India has not fulfilled all the conditions recommended by the Tarapore committee report. Hence, India ought not to rush to implement this policy. The process of implementation should be gradual in order to avoid a crisis.

The fourth chapter provides an empirical analysis of the impact of capital account openness on economic growth in the case of India. The time series data set has been employed to examine this relation. We have considered the annual data from the year 1972 to 2012. The dependent variable is GDP per capita (GDPPC) and the independent variable is capital account openness (CAO) and control variables are investment (INV), secondary school enrollment (SSE), and financial development (FINDEV). The first step of our empirical analysis in the time series data is to test the unit root of our variables in order to check whether the variables are stationary or not. After the stationary test we run the Johansen co-integration analysis for long-run association. We further test VECM for short-run dynamics. We have also applied the VAR Granger's causality test to examine the causal relation among the variables. The findings of our study reveal that there is long-run association among the variables and the long-run co-integrating equation shows that there is positive long-run association between GDP per capita and financial development, while other variables such as capital account openness, secondary school enrollment and investment are negatively associated with GDP per capita. The VECM error correction term represents the speed of adjustment towards long-run equilibrium. The error correction term shows negative sign and significant for GDP per capita and SSE. This implies these two variables do not have problem of adjustment in long-run. The VAR Granger's causality test shows that there is unidirectional causality running from GDP per capita to CAO and from GDP per capita to SSE, while there is bidirectional causality from GDP per capital to financial development and from GDP per capita to Investment. Hence, economic growth and capital account openness have unidirectional causality.

5.1. Scope for Further Research and Limitation of the Study:

Not much research exists on the impact of capital account openness on economic growth with regard to India, as this is an ongoing discussion. India has not completely implemented this policy yet. The process of liberalization on capital account is gradually increasing. In our study, we have considered data from 1972 to 2012 as per the availability, which is also a limitation of the study. We have used annual data for our study. But the quality of this study can be enhanced by using high frequency data. The main drawback of this study is that the number of observations analyzed has been limited by the time constraint. The study can be extended by considering the multiple indicators of financial market integration, financial openness, financial development, trade openness, foreign direct investment openness, etc. As far as econometric techniques are concerned, there is always a scope for further refinement. Firstly, it needs to be acknowledged that the models and equations estimated in the present study had to be modified and are not fully comparable to the ones produced by the respective authors. This is because of the endemic difficulties with respect to the availability of high frequency data or different financial development indicators. Certain important variables had to be dropped on account of non availability of reliable data.

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