The Fifth chapter studies the impact of economic reforms on Balance of payments with special significance to the role of invisibles in balance of payments.

The Sixth chapter presents an overview of Macro performance of Indian economy under liberalization era.

The Last chapter presents the summary of findings, suggestions and conclusion of the study.

CHAPTER II

REVIEW OF LITERATURE AND METHODOLOGY

The second chapter has been divided into two sections; section A and section B. Section A is related to Review of literature and section B is related to Methodology followed in the study.

Section - A

REVIEW OF LITERATURE

Review of literature
For any research, the review of literature forms the background of the research problem; the researcher must be well conversant with relevant theories in the field, reports and records, as also other relevant literature. These help to find out what data and other materials are available for operational purposes. Such studies may suggest useful and even new lines of approach to the present problem.

Studies Related with Economic Reforms and Fiscal Performance of Indian Economy:

Hiranya Mukhopadhyay and Kuntal Kumar Das (2003) had argued that the horizontal imbalances (measured by the coefficient of variation in own revenue as a percentage of total expenditure) persist in India even today mainly due to a host of economic and political factors. Variations in tax base, tax effort, infrastructural facilities - both physical and social - and political uncertainty are found to be the important determinants of horizontal imbalances. The dispersion in horizontal imbalance can only be reduced through all-round development of the poorer states. General-purpose transfers from the centre are essential for horizontal equity but they cannot ensure a permanent solution.

Vivek Moorthy (2004)\textsuperscript{13} had provided a critique of the ‘consensus’ view that a worsening revenue deficit and debt situation have prevented fiscal consolidation and argues that the fundamental problem has been a deteriorating fiscal deficit. It explains the distinction between worsening deficit and debt conditions using time period simulators with relevant variables from the Domar debt model. It shows that a rising debt ratio, which might appear to be due to unfavourable interest rate dynamics, can be related to a previous rise in the primary deficit. The Finance Commission mandated centre-state transfers are predicated upon economic performance indicators based on the revenue deficit; the validity of the consensus view is then critical in evaluating the efficacy of the transfer criteria.

Mala Lalvani (2006)\textsuperscript{14} had attempted to judge the fiscal performance of the UPA and NDA governments from the point of view of broad macro-fiscal indicators. On the tax front, the UPA deserves credit for improved performance but there are severe misgivings about the lower proportions being allocated to capital expenditure in key social and economic services. The facts that the UPA has not curbed subsidies and is


spending higher proportions on administration than the NDA are some obvious flaws. The performance of the UPA is well below expectations.

Nalraj P. (2008)\textsuperscript{15} had made an attempt to analyse the fiscal deficit on interest rates and inflation. Different macro economic indicators have obtained from various sources for this study. In its analysis of the effect of deficits, the method applied was focused first on the monetary and financial market implications of deficits. Gross fiscal deficit had taken from the year 1990-91 to 2004-05. The source of financing of fiscal deficit has classified based on the theoretical propositions to investigate the domestic macroeconomic imbalances. The regression analysis has used to find out the effect of financing of fiscal deficit, which had used to find out the interest rate and inflation effects due to the financing of fiscal deficit. It has been found from the analysis that the most effective factor influencing fiscal deficit financing for the past 15 years is other liabilities which is nothing but market borrowing leads to have a great impact on interest rate which have direct impact on crowding out on private investment. It has inferred from the theoretical and empirical analysis that the high intensity of fiscal deficit financing is from the market borrowing which has to be curtailed to a minimum,

otherwise it will lead to internal debt trap and will increase crowding out of private investment which will have an ultimate effect on growth of the economy.

Kanagasabapathy K. (2010)\textsuperscript{16} had argued that the fiscal situation does hold out some cause for optimism, First, growth prospects are good on account of a comfortable monsoon and buoyancy in industrial investment and export activity. Second, the windfall revenue from 3G auctions has spurred all expectations. And perverse as it may sound, the current inflation will augment tax revenues. He expressed as after the deliberate fiscal slippage in the aftermath of crisis resolving packages, a major concern is how and when the government will be back on its fiscal track. But it is equally important to see the process of fiscal consolidation ads one presenting a range of development opportunities.

\textbf{Studies Related with Foreign Direct Investment, Foreign Exchange Reserves, and External Debt:}

\footnote{Kanagasabapathy K. (2010), “Making Best Use of Fiscal Comfort”, \textit{Business Line}, August 20, p.8.}
Publo Guldotti (2002)\textsuperscript{17} the Finance minister of Argentina at the G33 seminar in Bonn proposed that the emerging market economies should manage their external assets liabilities in such way that are always able to live without new foreign borrowing up to one year. The IMF has observed that India’s management of foreign exchange reserves has generally been in accordance with IMF guidelines and is comparable to general best practices in this area. In line with slower developments in recent period, India’s reserve management operations have become more transparent. The emphasis is on efficient management of reserves. In areas like greater use of sophisticated risk management techniques like value at risk, determination of optimal currency composition, sound management of credit and market risk and the internal governance structure, India’s policies are comparable with international practices.

Chidambaram (2003)\textsuperscript{18} the former finance minister of India at the economic summit argued that the government has no clue as to how to use the foreign exchange to make India competitive. That India has foreign exchange reserves of nearly $100 billion but hasn’t found a way to make good use of the resources. He argues the


government should account for what they are doing about public sector assets and foreign exchange reserves.

Jaswant Singh (2003)\(^{19}\) had observed that India’s reserves would add greater momentum to bolder economic reforms, enabling the country to achieve higher growth and also provide a cushion, thus, providing higher levels of investment activity in the country and abroad. The nation’s foreign exchange reserves contribute very significantly to the national security of a country apart from, providing a much greater degree of national autonomy to the conduct of public policy, consistent of course with international obligation.

According to the Monthly Public Opinion survey (2003)\(^{20}\) the exchange reserves of India, which stood at about 81 billion US dollars by the end of May 2003, are only seemingly large. They are not composed of foreign currencies earned by profitable exports but are based on funds borrowed from abroad, especially volatile hot money coming in as portfolio investments that can easily flow out after garnering speculative


profits from trading in India stocks and shares. The deposits of NRI form another large part unreliable chunk of Indian exchange reserves.

Sinha S.L.N. (2003)\textsuperscript{21} had cautioned the authorities concerned with the foreign exchange reserves to be more cautious in the matter of reserves that have grown from the operation of foreign investors, institutions, as well as individuals, because the institutional flows are much more important and therefore these can lead to substantial instability because the flows of both directions will be large, unlike in the case of individuals. The authorities must have an appropriate regulatory mechanism to ensure that the investment is of a reasonably long-term nature.

Ravindra H Dholakia and Navendu Karan (2005)\textsuperscript{22} had argued that there are differences in the definition of debt used by different bodies like the State governments, Reserve Bank of India, Office of the Comptroller and Auditor General of India and the Finance Commission. Moreover, none of these definitions satisfy the criterion that fiscal deficit in a given year should equal the sum of increase in debt and monetisation. This


paper builds on this basic criterion to derive a theoretically consistent and appropriate definition of debt. The definition is then used to estimate debt for 18 non-special category states and 10 special category states for the period 1989-90 to 2003-04 and obtain effective interest rates for these states. We observe that non-special category states have a significant greater probability of fiscal sustainability than the special category states. Moreover, when the trend in the proportion of debt of each state in the aggregate of all states is compared with trends in similar proportions of fiscal transfers from the centre and that in the primary deficit on own account, we find that certain states have been benefited by large from the centre despite a consistent bad performance, while certain performing states have been penalised by reduced fiscal transfers.

Indrani Chakraborty (2006)\(^2\) had examined that time series properties of foreign capital inflows into India in the 1990’s particularly in the period that followed certain liberalization measures in the financial sector. An analysis of the quarterly data for the period 1993 to 2003 showed that net capital inflows have been volatile, though not all components of aggregate inflows have moved in a similar fashion. The paper further analyses how capital inflows adjusted to changes in the real exchange rate and other

macroeconomic variables in India since 1993. The econometric results indicated that an error-correction mechanism was operating between net inflows of capital and the real exchange rate. Macroeconomic fundamentals did not have any significant effect on the dynamic adjustment of capital inflows, and a co-integration relationship exists between the net inflows of capital, real exchange rate and interest rate differentials. It is argued that co-movement in these variables was due to the intervention of the Reserve Bank of India in the foreign exchange market, which helped to prevent the volatility of the real exchange rate in spite of the volatility in net inflows of capital.

Jeevan Kumar Khundrakpam (2008) had examined the behaviour of exchange rate pass-through to domestic prices in India after the reforms initiated in the early 1990s. Unlike observed in several countries, it finds a rise in exchange rate pass-through to domestic prices until recent years. Besides economic factors typically associated with economic liberalisation, the persistence of higher inflation is an important factor for the rise in pass-through.

Studies Related with Economic Reforms and Balance of Payments Performance in India:

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Williamson. J.H. (1976)\textsuperscript{25} had analysed the balance of payments and its theory of adjustment. His approach permits a critical assessment of the existing literature on nationally desirable balance of payments adjustment policies. He starts with an assessment of Meade’s theorem on the value of exchange rate policy in reconciling domestic and external objectives. After an in depth analysis he validates this theorem. However, he refutes Mundell’s proposal to vary the fiscal monetary mix to prevent reserve changes without depressing or inflating demand. His analysis has further illuminated the critical role that certain factual questions play in determining the character of desirable policies. The two outstanding examples concern the presence or absence of adaptive expectations. Under a system of flexible exchange rates and whether the capital account is best explained by a stock flow theory. This study is an attempt to reconcile to and ideal policy measure to solve adjustment problems in balance of payments. Highly sophisticated mathematical tools have been employed to arrive at the positive role played by adaptive expectations. It can see as technical exercise, which reveals new side to the problems of adjustment rather than concrete solution or recommendations. This study implicitly deals with the adjustment problem. However, it does not attempt any modification or repulsion of the existing theories.

Instead it is statistical approach vis-à-vis a mathematical one to highlight the importance of the capital account in financing current account deficit and contributing to positive balance of reserves. However, no explicit mention is made to the problems, process or themes of adjustments.

Bhattacharyya and Manas (1984)\textsuperscript{26} had estimated the trade off between export promotion and import substitution in India for the period 1966 to 1980. It was found that a unit increment in imports as a proportion of GDP would lead to a rise in the share of the export in relation to GDP to the extent of 50 per cent of the increment in the former. He had favoured import substitution, which could save more of foreign exchange than what export promotion could earn.

Rudiger Dornbusch (1986)\textsuperscript{27} had explained how governments of developing countries are constrained in the effective implementation of domestic policy by interlinkages of national and international markets. Domestic macro economic conditions are influenced by the interaction of national and world interest rates and prices through the

\textsuperscript{26}Bhattacharya and Manas, (1984), Export Promotion versus Import Substitution”, \textit{Foreign Trade Review}, Vol.18, No.4, Jan-March, pp. 414-477.

\textsuperscript{27}Rudiger Dornbusch (1986), “Special Exchange Rate for Capital Account Transactions; \textit{World Bank}, Vol.1, No.1, September, pp. 31-34.
impact of real exchanges rates on employment. The domestic responses to changes in these factors are strong and rapid. The study suggests that maintaining a dual rate of exchange depreciated exchange rate for capital account transaction and otherwise overvalued rate, can prove effective as a transitory policy to offset sudden shocks in capital market use models have explained this. This study reveals the sensitiveness of the capital account manipulations in exchange rate as well as international factors like world interest rates and prices. This again is a mathematical exercise aimed at projecting the importance of exchange rate policies is off setting fluctuations is capital market. This differs from our study in that it focuses solely on policies affected by international factors like exchange rate movements, world prices whereas the focus here is only on the content and impact of policy reforms on the capital account and not on their linkages with world interest rates or prices or more importantly exchange rates.

Leonard, A.G. and Sebastian M. (1990) had analyzed India’s trade against Japan during the period 1977-78 to 1984-85. They had adopted the Net Barter Terms of Trade method to analyze the trends, and they had concluded that for India, its trade relations with Japan were precious and valuable. India’s share in its trade with Japan both in

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respect of its exports as well as that of its imports was very low which was hardly one per cent.

Bhatt P.R. (1992)\(^{29}\) had made an attempt to measure the export competitiveness of India and had examined the role of the exchange rate policy on the export competitiveness of India for the period 1973 to 1989. The relative export prices, the relative wholesale prices, the relative profitability of exports and the index of import price competitiveness had been taken by him to measure the price competitiveness. It was found that the export competitiveness did not improve during the period 1973 to 1983. The index of relative export price competitiveness was also computed for six commodities namely spice coffee, tobacco, tea, cotton and rice. Indian exports were found to be less competitive in case of coffee and cotton and more competitive in the case of spices, tobacco, tea and rice.

Bibek Deb Roy (1993)\(^{30}\) had discussed the crisis indicators that the author analyses for the period 1980-81 to 1990-91 are, trade deficit as a percentage of GDP, current account deficit as a percentage of GDP, reserves as months of imports. After


analyzing the crisis indicators that led to liberalization, author discusses medium term structural adjustments that are implemented in the post 1991 period. According to the author structural adjustments are in the neo-classical framework. However, the author is of the view that there was no people oriented macro theory of balance of payments was followed.

Janaki I. (1995)\textsuperscript{31} had calculated the gains from international trade with the help of the income terms of trade and the expenditure terms of trade. The calculated gains had strongly suggested that India’s expenditure terms of trade were greater than that of India’s income terms of trade indicating that India’s gains from international trade had also become negative during the same years. If India’s propensity to import was to strictly depend upon its export performance, there was no possible way through which India could import its requirements based on its export earnings alone. But India continued to import not with standing the negative trends that were found both in the income terms of trade and in the gains from international trade. This in other words, had suggested that the imports had also been determined by considerations other than that of terms of trade.

Kishore G. Kulkarni (1999) had expressed the changes in balance of payments of the Indian economy. This study had assumed greater importance in modern times because of the increased international trade. This analysis focuses on changes in capital account of India’s balance of payments and by using a survey approach discusses, the capital account behaviour after independence. As it is, because of the small international trade volume of the Indian economy from 1947-1985, there were minor capital flows. Obviously is this time period the capital flows were neither necessary nor allowed. Moreover, the strict capital controls imposed by the governmental authorities have put some limitations on capital mobility. Nonetheless, the major changes in capital flows started occurring after 1990s with the liberalization efforts. This analysis was an attempt to summaries the main changes in capital inflows and outflows of the Indian economy. It was abundantly clear that the deficit in trade balance had to be financed by either borrowing commercially of publicly. Indian government reached a crisis situation when the supply of foreign reserves almost evaporated in 1989 and 1990. The devaluation of Indian rupee, together with the newly instituted economic reform helped salvage the situation in 1991. The gains from economic liberalization are witnessed in modern times in terms of betterment of economic output as well as the increased consumer surplus.

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Rashmi Banga (2005)\textsuperscript{33} had identified the factors that lead to a higher utilisation of the services in the growth process of the developing countries as their higher income elasticity of demand for the services, their structural changes and trade liberalization together with other reforms and improved technology. It had been emphasized that the dual spillover effects had accompanied the process of growth. The growth in the manufacturing sector had improved the growth in the services’ sector as it created an additional demand for the services. The services’ sector, in its turn led to a higher growth rate in the manufacturing sector as it led to a higher demand for new products and brought about improvements in the productivity of the manufacturing sector.

Deepika M.G. (2006)\textsuperscript{34} had analysed agricultural trade and its linkages to macro economic variables in the Indian economy. The study articulates that India has very little share in the world trade of agricultural commodities. Further, her study examines the relationship between exports and growth of GDP in agriculture and finds that there is a two-way causation between the two seen through the trends in simple growth rates and


also through the results of the Granger Causality test. An increasing the export growth be proceeded by a favourable growth in GDP in agriculture. But establishing the causality from exports to growth seems to be difficult, since the variables affecting the growth in agricultural are many.

Abdul Raheem (2007) had examined an alternative approach on Indian agricultural trade and performance of export of agricultural produce. Overstress on exports of agricultural product will change the cropping pattern in favour of each crop as against food crops. We are compelled to export of our agricultural product without having any surplus to meet the need of foreign exchange for importing conspicuous consumers’ goods”.

Vedphal and Sudesh (2007) have attempted to evaluate the relationship between the openness of external sector and the economic growth of India. For the purpose, co-integration and error correction models have been applied to estimate the causal relationship between real GNP and openness by using annual data for the period

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1951-2002. The author has pointed out “openness is taken in broader sense by taking
the summation of both exports and imports. The integration and co-integration
properties of the data have been analyzed and the Granger Representative Theorem has
been used to identify the nature of the casual relationship, and the results suggest that
a feedback casual relationship exist between economic growth and exports plus
imports. Further the authors concluded “There is no evidence for short run Granger
causality between the economic growth and openness. Further they have found that
India’s economic growth and openness reinforce each other. A high degree of openness
is associated with enhanced economic growth of India.

Studies Related with Economic Reforms and Macro Economic Performance of Indian
Economy

Bhattacharya B.B. and Arup Mitra (1991)\textsuperscript{37} had investigated that the relationship
between the service sector and the commodity sector in India during the period 1950-
51 to 1986-87. The researchers had collected the service sector, the commodity sector and the Net Domestic Product (NDP) data from the National Accounts Statistics. The broad conclusions that had emerged from their study were that except in the case of the trade group, the commodity output had a very poor relationship with that of the services income. It appeared that, in general, the growth rate of the services’ income was independent of the growth rate of the commodity sector’s income, which might result in inflation and a higher import demand to meet the consumer demand. They had concluded with a suggestion that the commodity sector’s output growth should be raised in relation to the growth of the service’s income.

Anilyadav K. (1999) had outlined the relationship between the rate of growth of the GDP and its sectoral shares and their fluctuations over the decades. He had compared the overall sectoral rates of growth among the developing, the faster developing and the developed countries of the world. For this purpose, the growth rates of the domestic product for nearly 25 years (from 1969 to 1993) for different types of countries; nineteen developing countries, four faster developing countries and six developed countries had been examined. The same procedures were followed for studying independent by the sectors of agriculture, industry and the services in order to

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22\& 23, June 1-8, pp. 1423-1424

understand clearly as to how the different sectors had contributed to the growth of the countries. In the case of the developing countries, the process of structural changes was found to be different from that of the developed countries in the sense that, instead of the gradual shifting of the GDP’s share from agriculture to that of the industry and then to the services sector as in the developed countries, it had been directly shifted from agriculture to that of the services sector, and India was also not being an exception to this general trend. Similarly as far the employment was concerned, a close proximity had been observed among the shares of employment in the different sectors among the developed countries while, no such proximity was found in case of the developing countries.

Arvind Virmani (1999) had attempted to provide a better basis for making economic forecasts in terms of GDP growth. For this the researcher had identified the fastest growing economies of the last two decades of the 20th century based on World Bank data, and then using a framework of ‘catch-up growth’ that had analysed the growth patterns of those high growth economies. Finally, he had provided the projections for the first decade of the 21st century. His analysis had revealed that India ranks sixth in the world growth league both in terms of its GDP growth and in terms of

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the migration of labour force among Industrial Compositions, especially, from agriculture to that of the services. Only South Korea and Singapore among the ‘Asian Tigers’; and Thailand and Indonesia among the Newly Industrialized Countries (NICs) and China the newest Asian high performing economy, had recorded a higher trend in their growth rates than that of India during these decades. Besides, in the first decade of the 21st century India’s growth ranking had been projected to improve further to become one among the top three countries. He had concluded from his analysis that India would grow faster than the ‘Asian Tigers’ and the ‘Asian NICs’ in the next decade. Its only Asian competitor in the growth rates was expected to be China.

Bhalla G.S. (2000) had empirically studied about the growth of the Indian economy in its Post-Independence period, from 1950-51 to 1998-99. For proposes of analysis, he had divided the entire study period of 1950-51 to 1998-99 in to four sub-periods, namely, 1950-51 to 1964-65, 1967-68 to 1979-80, 1980-81 to 1990-91 and 1991-92 to 1998-99. The required information had been gathered from the various issues of the Economic Surveys, published by the Government of India. He had observed that in the first sub-period, the growth rate of the industrial sector had been one of higher growth rates due to the Nehru - Mahalanobis strategy of industrial development, which was followed in mid fifties. The second sub-period had been

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characterized as a period of slow down in the growth rates of the GDP and of all the major sectors of the economy. In the third and fourth sub-periods, the Indian economy had witnessed a period of high GDP growth. There had been a notable deceleration in the growth rate of the agricultural sector during the period 1980-81 to 1991-99. During the eighties, the growth of the secondary sector had emerged as the leading sector of the economy followed closely to be tertiary sector’s growth and it was the opposite during the period of the nineties. It had been concluded that the liberalization policies pursued so far had failed to become an engine of rapid growth in the agricultural sector as also in its attempt create more employment opportunities.

Rita Bhowmilk (2000) had made an attempt to examine the role of the service’s sector in the Indian economy by using the Central Statistical Organization (CSO) data collected from National Accounts Statistics (NSO). She had empirically analyzed the service’s intensity for the production of different industries in the Indian economy through the Input-Output approach. By using the Input-Output Table for the year 1991-92, it had been observed that 42 per cent of the industries had used direct services as input for their production which was more than or equal to 11.6 percent and 52 percent of the industries had used direct and indirect services for their production which was

more than or equal to 22.5 percent. Thus, the importance of the service’s intensity was found to be remarkable in the Indian economy; he has also measured the expansionary potential of the service’s industries on the non-service’s industries by constructing an index of vertical integration. She had found much evidence for stating that service industries appeared to be the most growth inducing industries and had generated a higher value added phenomenon in other industries than in their own industries.

Arvind Pangariya (2004)\textsuperscript{42} had made an empirical test to find out whether the minor changes in the policy or the changes in the attitudes in the 1980’s had resulted in the same outcome as those of the major reforms undertaken in the 1990s. With the calculation of the co-efficient of variation and the standard F-test he had concluded that the growth in the 1980s had been more fragile than the growth in the 1990s. The most systematic and the system-based reforms of the 1990s had given rise to a more sustainable growth in the GDP, in general, and in the services sector, in particular. However the most disappointing aspect of the experience of the 1990’s had been the absence of an accelerated pace of growth in the industrial sector.

Arvind Virmani (2005)\textsuperscript{43} had conducted a study by way of extending his growth


projections to the years of 2025 and 2050. In this paper he had pointed out that the USA was the first and foremost economy in terms of its GDP contribution to the world’s GDP (21.1 per cent) followed by China (12.0 per cent) Japan (7 per cent) and India (5.7 per cent). Thus, the current situation is that of a univocal world since China’s contribution is still nearly half of that of the US economy, while India’s contribution is half of that of the Chinese economy. However, with his high growth projection analysis, he had come to the conclusion that the Chinese’s economy would become equal that of the United States during the first quarter of this century. But well before that event the US would have lost its monopoly as the foremost world power as China had already begun to challenges it. Indian economy would overtake that of Japan within the next five years to become the third largest power in the world. Thus, the Indian economy would equal that of US economy by 2040. He had arrived at the conclusion that the current uni-polar world would be transformed into that of a bi-polar world (China and USA) during the first quarter of this century, and into a tri-polar would (China, USA and India) during the second quarter of this century.

Masakazu Katsumoto and Chihirokuatanabe (2005) had explained that the paradigm of an industrial shift from the manufacturing based industrial structure to a

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service oriented industrial structure had become crucial for a nation’s competitiveness. While it had generally been postulated that a shift to a service-oriented industrial structure was the consequence of a virtuous cycle between an increase in the income level leading to a qualitative change in demand and increased service industry productivity they had attempted to identify the source of the contradiction regarding the above postulate on the basis of an empirical analysis of the growth trends, sectoral structures and income levels of 100 countries during the last two decades. Further, they had divided the 100 countries into high, middle and low-income countries. They had found from their analysis that (i) in high-income countries; the productivity improvement in the service industry had a positive impact on the income. The demand shift in quality had been promptly and appropriately satisfied by the shift in the supply side (ii) in the middle-income countries, the productivity increase in services industry had a negative impact on income growth. This meant that the demand shift in respect of quality had not been satisfied leading to the possibility of the Boumol’s Disease and (iii) in the low income countries, the productivity growth in the services’ industry had a positive impact on income growth as they had incorporated a restrictive virtuous cycle, that had covered up to a certain level of absorption. Finally, they had concluded that in the light of the increasing significance of the nations’ as well as firms’ services there had

been an acceleration in the management to accelerate a structural shift from a manufacturing – based industrial structure to a service-oriented industrial structure. Subramanian K.K. and Subramanian T.K. 45 (2006) have examined whether the market – oriented economic reforms adopted by the Government of India since 1991 help in increasing the R&D activity at the national level and the manufacturing sector, in particular. Further they are of the view that the R&D activity at the aggregate level, and the manufacturing sector, during both the pre- and post- reform periods are mapped, to examine the impact of economic reforms. The result of this study indicated that though the level of R&D activity in the manufacturing sector during the post-reform period has increased, market - oriented economic policies have not been able to stimulate R&D to the extent it is expected, thus hindering the growth of the manufacturing sector.4

Panchanan Das46 (2007) had made an attempt to explore what role of manufacturing output growth has had on overall economic growth and on employment growth in manufacturing industries in India in the pre- and post-deregulation phases of the country. In the 1960s Kaldor put forward certain hypotheses linking growth of


output, employment and productivity in the manufacturing sector. Testing those hypotheses with Indian data may illuminate the nature of the growth process in Indian manufacturing. In particular, they may shed new light on differences in regional patterns of growth in India over the period 1970-71 to 2002-03. The paper focuses on two states, namely, West Bengal and Gujarat, experiencing different types of growth.

Awanish Kumar and Aditi Dixit\textsuperscript{47} (2008) had attempted to analyse the fall in organised sector employment in India during the reform period. It highlights, particularly, the methodological fallacy in the usage of the term ‘organised’ as compared to ‘formal’ and its vital implications for the debate on employment in India. The other argument developed in the paper concerns the systemic link of capital accumulation and unemployment through the works of Marx, Keynes and Kalecki. The analysis concluded that unemployment, as a category, remains underemphasised in the mainstream neoclassical theory due to its inherent ideological orthodoxy. The paper also discusses various trends and patterns associated with organised as well as unorganised employment in India from 1961 onwards with special focus on the impact of the Structural Adjustment Programme (SAP) initiated in the year 1991. The broad results and arguments following from this exercise are as follows. Firstly, there has been an absolute decline in the total organised sector employment in India post-1991. The major source of this decline has

\textsuperscript{47}Awanish Kumar and Aditi Dixit, (2008) “Structural Adjustment Programme (SAP) and the Organised Sector Employment in India”, \textit{Asian Journal of Public Affairs}, Vol. 2, NO. 2, pp. 48-64.
been the loss of jobs in the public and the manufacturing sector. Secondly, there is strong evidence to suggest a growing tendency towards informalisation in the Indian economy. Strangely, this tendency is not only confined to the unorganised sector but extends into the supposedly organised sectors of the economy. The SAP has adversely impacted employment both within the organised as well as the unorganised sectors. The organised sector has been witnessing retrenchment and casualisation or informalisation of employment whereas the unorganised sector has been forced to accommodate labour force released by the organised sector, and in the process, employment opportunities as well as work conditions for un-skilled and semi-skilled labour have deteriorated. Even the most recent trends have not shown any improvements as far as this secular fall in organised sector employment is concerned. This situation urgently demands a policy reversal to a more progressive and labour-oriented development paradigm in the country.

Surajit Mazumdar48 (2008) had examined that the case that the growth trajectory of the Indian economy in the post-1991 liberalisation period is characterised by an inherent source of instability in manufacturing and industrial growth that distinguishes this period from the 1980s. This instability is a result of an investment-growth asymmetry that flows from a combination of a services-intensive growth pattern and a manufacturing-intensive investment pattern, which reflects the pattern of demand expansion within the domestic economy as well as in external markets, as also reliance

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on private corporate investment as the driver of the economy’s investment process. In such circumstances, maintaining the balance between capacity creation and demand expansion in the manufacturing sector becomes impossible. Investment is thus prone to a high degree of instability, which, via its effects on demand, makes industrial growth too highly unstable. The services-intensive growth trajectory after 1991 is therefore more correctly viewed as one which is unable to fully utilise the capital accumulation potential of the economy rather than as a trajectory that is cheap in the use of capital. Correcting this problem however requires measures that are inconsistent with a liberalised economic policy regime.

Papola T.S. (2009) had studied the structural contributions of the Indian economy since the year 1950-51 by using data from the RBI Hand Book of Statistics and the NSSO publications in various issues. He had observed that the Indian economy had undoubtedly been on a higher trajectory path for about two decades. But contrary to expectations, which were based on theory as well as on history, it had not achieved any significant change in the share of Industry in the GDP. A major contribution to economic growth had been made by the growth of the service sector, which had been accompanied by a shift from agriculture to that of services; but a similar shift had not

been noticed in respect of the workforce. Agriculture had accounted for only 18 percent of Indian’s GDP employing 56 percent of the workers; while the services had contributed to 55 percent of the GDP employing only 26 percent of the workers. Services had accounted for around 25 percent of the consumption basket of the Indian population; and 75 percent of their consumption still consisted of commodities. He had concluded that it was necessary to have a policy agenda for sustaining a high rate of economic growth, by reducing the trade deficit by creating employment opportunities and by preventing an increase in the inequalities of various kinds.

Shrikrishna Singh\(^{50}\)(2009) had outlined that the experience of globalization since 1991 has been disastrous to farmers, forest based community in particular and women in general and he had also pointed out that our traditional form of living, the mainland forests and coastal ecology is seriously threatened which warrant serious policy initiative at the Central and State level.

**Research Gap**

The initiation of economic reform is a major landmark event in the post independent era. India is in the process of completing two decades of economic reform. Therefore, it is apt to undertake an exhaustive study to analyse the various dynamics of economic reform process in India. A number of studies have been undertaken in recent times to study the impact of economic reforms by taking one or two variables. A comprehensive study covering the various dimensions of economic reform process is the need of the hour to ascertain the positive and negative aspect of reform, so that corrective measures could be taken to minimize the costs and maximize the benefits of economic reform. To this end the researcher has undertaken this vibrant topic for research.

Section - B

METHODOLOGY

A research study in any field is an investigation of the unknowns based on the known. Any research study requires an appropriate methodology. The methodology is a systematic method, which depended on the researcher telling the truth about the happenings in the research, and not what she wished to happen in her research. The economic events relate to the human behaviour, which might vary over time and space.
The word ‘research’ had been derived from the Latin word ‘measuring to know’. It is a systematic and a replicable process, which identifies and defines problems, within certain specified boundaries. It employs a well-designed method to collect the data and to analyze the results. It disseminates the findings to contribute to knowledge, which could be generalized.

This methodology section deals with the research techniques and the methods applied by the researcher in the collection and in the analysis of the data. The researcher had followed this procedure to complete this study.

Methodology would refer to a proper theoretical analysis of the method made applicable to a field of study or to the body of the methods and the principles made applicable to a particular branch of knowledge. In this sense, one may speak of the objections to the methodology of a geographic survey (that is, objections dealing with the appropriateness of the methods used) or of the methodology of modern cognitive psychology (that is, the principles and the practices that underlie the research in that field). In recent years, however, the word methodology had been increasingly used as a pretentious substitute for the method used in the specific and in the technical context. People might have taken to this practice by the influence of the ‘objective’ of the word methodology to mean ‘pertaining to methods’. Methodology might have acquired this meaning, as people had already been using the more ordinary adjective of the word ‘methodical’ to mean ‘orderly’, by
systematic’, and the like; but the word ‘methodical’ obscures an important conceptual distinction between the tools of scientific investigation (proper methods) and the principles that determine as to how such tools are deployed and interpreted.

**Period of the Study**

The study covers Eleven years before economic reform and Eighteen years after the introduction of economic reforms to ascertain the impact of reform process on selected macro economic variables in India.

**Scope of the study**

This study focuses on the impact of economic reform on selected macro economic variables, they are; various Fiscal Deficits, Taxes, Foreign Direct Investment, Foreign Exchange Reserves, External Debt, various Components of Balance of Payments, and an Overview of Macro Economic Performance of Indian economy. This study tries to analyse the impact of economic reforms on the above stated variables only.

**Collection of Data**
This work has got its own distinctive methodology. The researcher has used only the available secondary data for analytical purposes. Secondary data, which are not originally collected but are rather obtained from already published or from other unpublished sources. The data were collected from various sources such as the Reserve Bank of India Bulletins, RBI Hand Book of Statistics on Indian Economy, RBI Annual Reports, RBI Report on Currency and Finance, Economic Survey, various issues of the journal of Economic and Political Weekly, The Government Records, Journal of Public Finance, Asian Economic Review, Southern Economist, Kurukshetra, other related books, journals and periodicals

The collected raw data were classified and computed according to the requirements of the study with a view to study the trends of selected macro economic variables in India used in this study and the appropriate statistical tools have been employed. The analysis has been further interpreted and the observations relevant to the study have been made.

**Tools of Analysis**

The researcher had analysed the collected data with the basic objectives of the study. The tools that had been made use of include the following.
One of the objectives of the present study is to analyse the growth and the patterns of Various Fiscal related Deficits, Taxes, Foreign Direct Investment, Foreign Exchange Reserves, External Debt, Various Components of Balance of Payments, and Macro Performance of Indian economy. For this purpose, two popular forms of trend analysis, namely the linear trend model and the semi–log trend model have been used.
To analyse the growth patterns of the above stated variables, straight-line equations have been fitted for the two sub periods and for the whole period of the study. The slopes co-efficient of the trend lines have been compared for the various macro economic variables considered in the study. To fit the straight line, a model of the following type has been used.

\[ T = a + b_t + u_t \]

Where

- \( T \) = Dependent variables in amount
- \( t \) = Time trend variable taking values 1, 2, 3.....

‘\( a \)’ is the intercept term and ‘\( b \)’ is the regression co-efficient showing the annual growth or decline in the related variables during the period under study. The compound growth rates have also been worked out for the various variables related with the study for the two sub-periods as also for the whole period.

II. The Semi-Log Model
The above trend model gives only the linear annual growth of the variables mentioned in the study. To get the constant annual compound growth rate of the variables another semi-log model of the following type is used in this study.

The semi-log model is

\[ \log y = a + b_t \]

Compound growth rate = \[(\text{antilog } (b-1) \times 100)]\]

The above regression models are estimated using the principle of Least Squares.

The compound growth rates of the various variables concerned in the study were estimated for the two sub-periods 1980–81 to 1990-91 and for 1991-92 to 2008-09 and also for the entire period of 1980-81 to 2008-2009. Since liberalization in India began in the year 1991, the cut-off year considered for the analysis is 1991. This has helped the researcher to form a comparative picture of the Fiscal position, Trade position, Foreign Exchange Reserve position, and Balance of Payments position during the post-reform, which was just prior to the period of economic reforms and for the post-reform period, which was immediately after the period of the economic reforms.
III. The Student ‘t’ test

To examine whether the growth rates were different between the two sub-periods, the following ‘t’ test was used for the selected variables considered for the study.

\[
b_1 - b_2 = \frac{t}{\sqrt{(S.E\beta_1)^2 + (S.E\beta_2)^2}}
\]

Here \(b_1\) represent the slope co-efficient obtained in the regression model, which is estimated for the pre-reform period and \(b_2\) represent the slope co-efficient obtained in the regression model estimated for the post-reform period. \(S.E\) represented the standard error.

Decision Rule

If the calculated ‘t’ is greater than the table ‘t’ for \((n_1+n_2-2)\) degrees of freedom, it indicate that the change in the growth rate of the various variables discussed in the study are statistically significant; otherwise the change in the growth rates are statistically insignificant.
IV. Chow Test

To study the structural changes for the study variables during the pre-reform and post-reform periods between 1980-81 to 1990-91 and 1991-92 to 2008-2009 Chow test was used.

The assumptions underlying the Chow test are two fold:

a) $U_1 t \sim N(0, \sigma^2)$ and $U_2 t \sim N(0, \sigma^2)$

That is, the two error terms are normally distributed with the same (homosedastic) variance $\sigma^2$ and (b) $U_1$, $t$ and $U_2 t$ are independently distributed with these assumptions, and the Chow’s test proceeded as follows.

Step: I

Combining all the $n_1$ and $n_2$ observations, we estimate $Y_t = a + bt + U_1$ and obtain its Residual Sum of Squares (RSS), say, $S_1$ with $df = (n_1 + n_2 - k)$, where $k$ is the number of parameters estimated, ‘$z$’ in the present case.
Step: II

Estimate $Y=\beta_0+\beta_1X_t+U_t$ with $t=1$, individually and obtain their RSS, say, $S_2$ and $S_3$ with df=$(n_1-k)$ and $(n_2-k)$ respectively. Add these two RSS, say $S_4=S_1+S_2$ with df $(n_1+n_2-2k)$.

Step III:

Obtain $S_5=S_3-S_4$

Step IV:

Given the assumptions of the Chow test, it can be shown that

$$\frac{S_5}{K} = \frac{S_4}{(n_1+n_2-2k)}$$

Follow the ‘F’ distribution with df = $(K, n_1+n_2-2k)$. If the ‘F’ computed from the equation exceeds the critical ‘F’ value at the chosen level of ‘β’ reject the hypothesis that the regressions $Y_t=\alpha_0+\alpha_1X_t+U_1t$ and $Y=\beta_0+\beta_1X_t+U_2t$ are the same,
that is reject the hypothesis of structural stability. Alternatively if the ‘F' value of
the function F obtained from

\[ F = \frac{S_5/K}{S_4/ (n_1+n_2-2k)} \]

This model is used to find out the structural changes of the fiscal deficit.\(^{51}\)

V. Multiple Regression Model for the Determinants of Forex Reserves

It is a statistical procedure that attempts to assess the relationship between the
dependent variable and two or more independent variables. The variables that generally
determine the flows of Foreign Exchange Reserves to a particular country or region are
referred to as the determinants.

The analysis of determinants of foreign exchange reserves consists of inflow of
Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), Non Resident Indian
Deposits (NRIs), External Assistance, External Commercial Borrowings (ECB) and Current

Account Balance (CAB). In order to find out the influence of the above variables on total foreign exchange reserves, the multiple regression of the following model is adopted.

**Model Specification:**

The model for foreign exchange reserves determinants has been specified as follows:

\[ FER_t = \psi_0 + \psi_1 FDI_t + \psi_2 FPI_t + \psi_3 NRID_t + \psi_4 EA_t + \psi_5 ECB_t + \psi_6 CAB_t + \psi_9 (D) \]

- \( FER_t \) = Foreign Exchange Reserves
- \( FDI_t \) = Foreign Direct Investment
- \( FPI_t \) = Foreign Portfolio Investment
- \( NRID_t \) = Non Resident Indian Deposits
- \( EA_t \) = External Assistance
- \( ECB_t \) = External Commercial Borrowings
- \( CAB_t \) = Current Account Balance
- \( D \) = Disturbance term variable taking value of 1 for period 1990-91 to 2007-08.

VI. The Granger Causality Test
The Granger causality test assumes that the information relevant to the prediction of the respective variables, ED (External Debt) and CA (Current Account), is contained solely in the time series data given in this study about External Debt and Current Account variables.

The test involves estimating the following regressions:—

\[
ED_t = \sum_{i=1}^{n} \alpha_i ED_{t-i} + \sum_{j=1}^{n} \theta_j CA_{t-j} + u_{1t} \quad [1]
\]

\[
CA_t = \sum_{i=1}^{m} \lambda_i CA_{t-i} + \sum_{j=1}^{n} \Phi_j ED_{t-j} + u_{2t} \quad [2]
\]

Where it is assumed that the disturbances \(u_{1t}\) and \(u_{2t}\) are uncorrelated.

Equation (1) postulates that current ED is related to past values of ED itself as of CA, and (2) postulates a similar behaviour for CAT. Note these regressions can be cast in growth forms, ED and CA, where a dot over a variable indicates its growth rate. We now distinguish four cases:

1. **Unidirectional causality from CA to ED** is indicated if the estimated coefficients on the lagged CA in (1) are statistically different from zero as a
group (i.e. $\Sigma \theta_i \neq 0$) and the set of estimated coefficients on the lagged Ed in (2) is not statistically different from zero (i.e. $\Sigma \Phi_j = 0$).

2. Conversely, unidirectional causality from ED to CA exists if the set of lagged CA coefficients in (1) is not statistically different from zero (i.e. $\Sigma \theta_i = 0$) and the set of the lagged ED coefficients in (2) is statistically different from zero (i.e., $\Sigma \Phi_j \neq 0$).

3. Feedback, or bilateral causality is suggested when the sets of CA and ED coefficients are statistically different from zero in both regressions.

4. Finally, independence is suggested when the sets of CA and ED coefficients are not statistically significant in both the regressions.

More generally, since the future cannot predict the past, if variable X (Granger) causes variable Y, then changes in X should precede changes in Y. Therefore, in a regression of Y on other variables (including its own past values) if we include past or lagged values of X and it significantly improves the prediction of Y, then we can say that X (Granger) causes Y. A similar definition applies if Y (Granger) causes X.

The steps involved in implementing the Granger causality test are as follows.

The researcher illustrates these steps with the equation given in Eq. (1).

1. Regress current ED on all lagged ED terms and other variables, if any, but do not include the lagged CA variables in this regression. This is the restricted
regression. From this regression obtain the restricted residual sum of squares, RSS$_R$.

2. Now run the regression including the lagged CA terms. This is the unrestricted regression. From this regression obtain the unrestricted residual sum of squares, RSS$_{UR}$.

3. The null hypothesis is Ho: $i = 0$, that is lagged CA terms do not belong in the regression.

4. To test this hypothesis, we apply the ‘F’ test given below namely.

\[
F = \frac{(RSS_R - RSS_{UR} / m)}{RSS_{UR} / (n-k)}
\]

Which follows the ‘F’ distribution with $m$ and $(n-k)$ degrees of freedom. In the present case $m$ is equal to the number of lagged CA terms and $k$ is the number of parameters estimated in the unrestricted regression.

5. If the computed $F$ value exceeds the critical ‘$F$’ value at the chosen level of significance, we reject the null hypothesis, in which case the lagged CA terms belong in the regression. This is another way of saying that CA causes ED.

6. Steps 1 to 5 can be repeated to test the model (2) that is, whether ED causes CA.

The sample data covered the period 1990-2007 and contain a total of 18 annual observations. To test the causality between external debt and Current Account Deficit and its direction, the above procedure with SPSS is adopted. A maximum lag length of 1
has been assumed and the following restricted and unrestricted equations by Ordinary Least Square (OLS) have been estimated.

\begin{equation}
\text{Restricted equation}
\end{equation}

\begin{align*}
\text{ED}_t &= \alpha_0 + \beta_1 \text{ED}_{t-1} + U_{3t} \quad (3) \\
\text{CA}_t &= \beta_0 + \lambda_1 \text{CA}_{t-1} + U_{3t} \quad (4)
\end{align*}

\begin{equation}
\text{Unrestricted equation}
\end{equation}

\begin{align*}
\text{ED}_t &= \alpha_0 + \beta_1 \text{ED}_{t-1} + \theta_1 \text{CA}_{t-1} + U_{3t} \quad (5) \\
\text{CA}_t &= \beta_0 + \lambda_1 \text{CA}_{t-1} + \phi_1 \text{ED}_{t-1} + U_{3t} \quad (6)
\end{align*}

\textbf{VII. Correlation}

To examine whether there is correlation between two variables in the study period the following ‘t’ test has been used for the selected variables considered for the study.

\[r\]

\[t = \frac{r \sqrt{n-2}}{\sqrt{1-r^2}}\]

Here ‘r’ represent the correlation co-efficient obtained in the correlation model and ‘n’ represents number of years. SE represents the standard error.

\textbf{Decision Rule}

If the calculated ‘t’ is greater than the table ‘t’ for (n-2) degrees of freedom it indicate that the correlation between the two variables discussed in the study are
statistically significant; otherwise the correlation between the two variables are statistically insignificant.

CHAPTER III

ECONOMIC REFORMS AND ITS IMPACT ON FISCAL PERFORMANCE OF INDIAN ECONOMY

The objective of this chapter is to examine the fiscal performance of Indian economy in the post economic reform era.

An Analysis of the Budget and Fiscal Deficit of the Central Government

The budget is a very powerful tool in the hands of a Government. If planned prudently, it could help an economy to become prosperous, socially just, and environmentally sound. The budget is a major instrument of the national economic policy and should be reassessed in terms of the challenges the country has to overcome. The budget advances the reform process in several areas.

Fiscal Reform

Fiscal reform is an integral part of the adjustment package. A major objective of such reform is to reduce fiscal deficit. Control on fiscal deficit is expected to bring inflation under control and to allow for stable growth. There are two ways of reducing fiscal deficit-pruning expenditure and raising revenue, the emphasis is on the