CHAPTER - I
INTRODUCTION

Introduction

The present chapter has been divided into four sections. Theoretical Basis of External debt has been devoted in section - I. India’s External debt in historical perspective has been presented in Section II. Section III deals with meaning, components and sustainability of India’s external Debt. Objectives of the Study, Hypotheses, Methodology and Chapter Scheme have been discussed in Section IV.

SECTION - I

Theoretical Basis of External Debt

In the early 1980's, several LDCs with very large debts to foreign lending agencies did not meet the payments schedules to which they had originally agreed. Various participants in, and observers of, these markets began to speak of a crisis, one which they feared might shake the financial system of the developed countries. Since 1980's debt crisis comes as a major macroeconomic problem for many developing countries. These countries got an expanded access to private financial and other trade credits and spend more on public expenditure. External debt problem is one of the main challenges faced by the developing countries like India. The repayment or "debt service" creates problems for many countries especially for developing ones because a debt has to be serviced are more than the actual amount it was taken for. Therefore, large debt service payments impose a number of constraints on a country's growth scenario. Either, it drains out limited resources and restricts financial resources for
domestic need of development of these countries.

On the other hand, if marginal productivity of each available external debt is greater than or equal with the principal and the interest payment, external debt will have a positive impact on the economy of the borrowing country. This in turn will require the foreign debt to be used in productive sectors and in basic infrastructures which can enhance the productivity of other sectors. But, if the borrowing country failed to service its debt, it will lose its' credit worthiness; and this in turn might affect the economic performance of the borrowing country by reducing the availability of foreign debt. Foreign borrowing has a positive impact on investment and growth of a country up to a threshold level but external debt service can potentially affect the growth as most of the funds will go in the repayment of the debt rather at the investments. As a result it creates a great hindrance in the economic growth of a country due to high interest payments on the external debt, heavy public expenditures and foreign exchange to repay that debt. This may result from inability to generate enough resources to meet commitments in debt servicing. When a disproportionately large share of current resources is deployed to serve external debt the debt burden increases. The reverse is the case when external debts can be serviced without compromising the requirements of domestic economic development. Therefore, there should be an optimum level of debt in order to avoid debt service difficulty and to ensure its usefulness in establishing debt sustainability.

There are several indicators which have been used to measure debt burden and its sustainability. The indicators are
usually reported in percentages (ratios). These include: Debt Stock/Export, Debt Service/GDP, Debt Service/Export, Debt Stock/GDP, Forex Reserves/Import and the Forex Reserves/Debt Stock. Its debt stock with regard to its export should be well balanced and sustainable. In the same way, external debt stock/GDP is a scaled measure of debt stock position. It will measure foreign presence in an economy in the form of past reliance on contractual foreign capital inflow with the potential of attracting capital outflow in the future. The Debt Service/Export and Debt Service/GDP indicate the proportion of exports and national output that are committed to service of debt incurred in the past. In particular, debt service/export is a liquidity measure. For the debt service/GDP, it measures the magnitude of current domestic output used in meeting debt service commitments entered in the previous period. The Forex Reserves/Debt Stock ratio, though not a common measure of debt sustainability, assumes that if the total debt stock of the borrower is to be paid off with the forex reserves, how far would it go. The greater the ratio the more comfortable the debtor appears to be in terms of its capacity to meet its external commitments. Similarly, the Reserves/Import ratio measures the capacity of the country to pay for its imports. The debt burden indicators suffer the limitations endemic to ordinal measurement. For instance, a country with a low ratio of debt stock/GDP may record unsustainable external debt if the value of exportable constitutes a very small proportion of its GDP. Foreign exchange resources may not be available to meet its debt service payments. Furthermore, the debt/GDP can also be influenced by exchange rate since local currency depreciation can raise the ratio while
physical output and debt stock in foreign currency remain unchanged.

SECTION II

India’s External debt in Historical perspective

After the Second World War a collective effort by some leading nations of the world was made to put on right track the war ravaged economies of the World with the establishment of Bretton Woods institutions - World Bank and IMF in 1945. India also participated in Bretton Wood conference and get the status of being founder member of the IMF and World Bank. After its independence in 1947 having the East India syndrome the major objectives of India were to be self reliant and to trigger the level of economic growth and development of the Indian economy squeezed by British rule and distorted by 2nd World War. Planned economic development began in 1951 with the inception of the first five year plan. No doubt in the initial years after 1947 restrictionist policies were adopted in India but seeds of liberalisation were sowed.

After independence in 1947, import controls were relaxed through the expansion of the OGL list in a stop-go fashion with the First Five year plan (1951-56) representing a period of progressive liberalisation. But a foreign exchange crisis in 1956-57-put an end to the phase of liberalisation and comprehensive import controls were restored and maintained until 1966. In June that year India devalued the rupee from Rs. 4.7 to Rs. 7.5 per dollar. The 57.5 per cent devaluation was accompanied by some libralisation of import licensing and cuts in import tariffs and
export subsidies for approximately a year but by 1968 because of intense domestic reaction to the devaluation in India almost all liberalizing initiatives were reversed and import controls tightened in the subsequent years and they remained more or less intact until the beginning of period of phased liberalisation in the late 1970s.

During the mid 1970s demand by domestic industrialists in favour of liberalisation of imports of raw materials and machinery, and improved export performance and accumulation of comfortable magnitude of foreign exchange remittances from overseas workers in the West Asia, lent confidence to policy makers to overcome the fear of balance of payments crisis and facilitated the emergence of the modern liberalisation phase.

During the mid 1980s, liberalisation was introduced quietly and without fan-fare and that is why it is described as 'liberalisation by stealth' The liberalisation process picked up significantly in 1985 with the announcement of major changes in trade liberalisation between 1985-88. During this period (1988-91) the average annual growth rate of GDP and exports was unusually high at 7.6 per cent and 14.4 per cent respectively. At the same time there was enormous increase in the imports and external borrowing to plug the gap between exports and imports. Total imports which were US $ 15869 million in 1980-81 rose to US $ 24075 million. The balance of payments situation turned grim. With the increasing trade deficits, flattening out of private remittance and a fall in the concessional aid to finance the ever increasing deficits, India had to depend on high cost methods of financing the deficit, viz. external commercial borrowings, NRI deposits and assistance from IMF. The total external debt stock
of India increased from US $20582 million in 1980 to US $76983 million in 1992. In 1991, India was webbed in a severe economic crisis with only one billion US $ foreign reserves left to pay imports. The key debt sustainability indicators viz. external debt to GDP ratio, short term debt to foreign currency assets ratio, debt service to current receipts ratio and concessional debt to total debt ratio were at an alarming rate. In terms of indebtedness classification India was classified as severely indebted country.

To bail out from the economic crisis India had to resort to a heavy dose of internal and external liberalisation in the form of macro-economic stabilization and structural adjustment programmes. The new economic policy of July 1991 was announced. The main aim of this policy was to attain stabilization and structural adjustment through demand and supply management which can be achieved by controlling inflation, fiscal and balance of payments adjustment on the one hand and trade and capital inflow liberalisation, industries deregulation, dis-investment and financial sector reforms on the other hand.

In the post 1991 reform period, India has been able to perform better in terms of GDP growth rate, balance of payments, foreign exchange reserves accumulation and specifically improvement in debt sustainability indicators. According to CSO estimates the growth rate of GDP was 8.1% for the year 2005-06 and it increased to 8.9% in 2010-11 and then it started decreasing from 6.7% in 2011-12 to 4.7% in 2013-14. India’s balance of payments reasonably remained comfortable after post 1991 reform period. The current account deficit has come down from
the level of 3.1% of GDP in 1991 to a current account surplus of 0.3% of GDP in 2001-02, implying a situation where current receipts exceeds current liabilities. On the capital account the inflows have remained buoyant (except in 1995-96) bolstering the foreign reserves during this period. The foreign reserves had reached to US$ 199179 million in 2006. It increased to US $ 304818 million in the year 2010, decreased slightly and stood at US$ 304224 million in 2013-14. Though the total external debt of India rose to US $ 139114 million at the end 2005, it increased to US$ 305861 million in 2010-11 and US$ 455929 million in 2014-15.

The movement in debt sustainability indicators point towards consolidation of external debt position. In terms of absolute debt levels India improved from fourth largest debtor after Brazil, Sri Lanka in terms of external debt indicators short term debt to total external debt ratio and short term debt to foreign exchange reserve ratio India's position is quite encouraging. The ratio of total external Debt to GDP has decreased from 22.5 in 2000 to 23.5 in 2014-15. The ratio of debt service came down from 16.6 in 2000 to 10.1 in 2005 and 5.10 in 2014-15. Similarly the ratio of foreign reserve to total external debt has also increased from 4.7 in 2000 to 10.9 in 2005 and 68.9 in 2014-15.

**Importance of External Debt**

The creation of debt is a natural consequence of economic activity. At any time, some economic entities have income in excess of their current consumption and investment requirements, while other entities are deficient in this regard. Through the creation of debt, both sets of entities are better able to realize
their consumption and output preferences, thus encouraging economic growth.

The creation of debt is premised on the assumption that the debtor will meet the requirements of the debt contract. But if the income of the debtor is insufficient or there is a lack of sufficient assets to call upon in the event of income proving insufficient, debt problems ensue; the stock of debt will be such that the debtor cannot meet its obligations. In such circumstances, or in the expectation of such circumstances, the benefits arising from international financial flows - for both creditors and debtors - may not be fully realized. Hence, the need for good risk-management procedures and the maintenance of external debt at sustainable levels arises at the country level.

Further, the economic trend is another reason for the added concern towards a sustainable external debt. Fiscal positions of many developed and developing countries have experienced marked deteriorations during the past few decades leaving governments with persistent deficits. Though incurring debts are normal as well as essential in an international economic exercise for each country, the question that calls consideration relates to excessive accumulation of debt i.e. how long a government can continue to incur external debt without reaching the verge of sovereign bankruptcy.

Further it is important to note that large fiscal deficits have a variety of adverse consequences: reducing economic growth, lowering real incomes, and increasing the risk of financial and economic crises. Fiscal deficits can also lead to inflation. Thus it is important to maintain fiscal deficit in equitable proportions for as Martin Feldstein (1980) suggest, "Fiscal deficits are like
obesity. You can see your weight rising on the scale and notice that your clothing size is increasing, but there is no sense of urgency in dealing with the problem. That is so even though the long-term consequences of being overweight include an increased risk of a sudden heart attack as well as of various chronic conditions like diabetes. Like obesity, government deficits are the result of too much self-indulgent living as the government spends more than it collects in taxes. And, also like obesity, the more severe the problem, the harder it is to correct: the overweight man has a harder time doing the exercise that could reduce his weight and the economy with a large deficit and debt is trapped by increasing interest payments that cause the deficit and debt to rise more quickly."

**Determining External Debt Sustainability**

Having understood the need and importance of having a sustainable level of external debt, the mode and methodology of its determination and implementation becomes the obvious next question. However it is at this level the things differ. Similar to the fact that there are various ways to reach a destination, though policy makers and analysts often ask whether the current level of fiscal deficits or levels of outstanding debt are sustainable, the way they approach assessing it differ.

Apart from the World Bank and IMF understanding, it may be noted that there are two broad conceptual approaches in assessing fiscal sustainability i.e. (a) accounting approach and (b) present value borrowing constraint approach. Studies based on accounting approach define indicators, mainly debt/income ratio (or debt ratio), that tells us how far present fiscal policy departs from a sustainable one. Accordingly, a primary deficit,
Revenue minus non-interest spending, is defined as sustainable if it generates a constant debt ratio given output growth and real interest rates. However, stabilizing a country's debt ratio is not sufficient to achieve a sustainable level of deficit. A certain level of debt ratio would be sustainable if future primary balances are sufficient to meet the service obligations of existing and future debt. One major defect of the accounting approach is the assumption that government's liabilities continue to grow at the rate of economic growth so that debt ratio remains constant. This would not be true when the government faces unexpected contingencies (e.g. natural disasters), political economy constraints and existence of easy access to foreign or local borrowing.

The present value borrowing constraint approach which is based on the inter-temporal budget constraint of the government is widely used in evaluating fiscal sustainability. The present value borrowing constraint implies that a fiscal policy is sustainable when it is expected to generate sufficient net revenues in the future to repay the accumulated debt and interest expenses. Fiscal policy is said to be unsustainable when the government will forever finance its excess spending inclusive of interest payments by issuing new debts. Hamilton and Flavin (1986) "even if the government wants to run a budget deficit forever, is this something it really could do?". This question implicitly asks whether the government promises its creditors to run sufficient surpluses in the future in order to offset current deficits. If fiscal policy choices generate a sequence of debt such that the present value constraint holds, pursued policy is said to be sustainable. Hamilton and Flavin test the conditions given by
the present value constraint in relation to U.S. fiscal policy and assert sustainability since both deficit and debt series are stationary.

Thus we find that there is no rule of thumb for determining whether a country's debt level is sustainable. For an accurate projection on debt sustainability, it is not just one indicator but several indicators should be assessed simultaneously in a forward-looking way. Debt sustainability analysis has to be country-specific, with consideration of the country's debt history, the level of sovereign ratings and the degree of development in the financial sector and capital markets.

SECTION III
EXTERNAL DEBT: MEANING, COMPONENTS, SUSTAINABILITY INDICATORS AND OPTIMUM LEVEL
MEANING

Gross external debt is the amount, at any given time, of disbursed and outstanding contractual liabilities of residents of a country to nonresidents to repay principal, with or without interest, or to pay interest, with or without principal.

To talk of external debt sustainability, one has to understand the facets of what 'external debt' denotes and connotes and then only one can attempt a realistic understanding of how can a country plan for a sustained approach towards external debt management. In this regard it is expedient to note the definition of external debt as advanced by the International Monetary Fund (IMF). “Gross external debt, at any given time, is the outstanding amount of those actual current, and not contingent, liabilities that require payment(s) of principal and/or interest by the debtor at some point(s) in the future and that are
owed to nonresidents by residents of an economy.”

In the above definition, IMF defines the key elements as follows;

(a) Outstanding and Actual Current Liabilities: For this purpose, the decisive consideration is whether a creditor owns a claim on the debtor. Here debt liabilities include arrears of both principal and interest.

(b) Principal and Interest: When this cost is paid periodically, as commonly occurs, it is known as an interest payment. All other payments of economic value by the debtor to the creditor that reduce the principal amount outstanding are known as principal payments. However, the definition of external debt does not distinguish between whether the payments that are required are principal or interest, or both. Also, the definition does not specify that the timing of the future payments of principal and/or interest need be known for a liability to be classified as debt.

(c) Residence: To qualify as external debt, the debt liabilities must be owed by a resident to a nonresident. Residence is determined by where the debtor and creditor have their centers of economic interest - typically, where they are ordinarily located - and not by their nationality.

(d) Current and Not Contingent: Contingent liabilities are not included in the definition of external debt. These are defined as arrangements under which one or more conditions must be fulfilled before a financial transaction takes place. However, from the viewpoint of understanding vulnerability, there is analytical interest in the potential impact of contingent liabilities on an economy and on particular institutional
sectors, such as government.

**Components**

External debt is the sum of: (1) public and publicly guaranteed debt, (2) private non-guaranteed credits, (3) central bank deposits, and (4) loans due to the IMF. In each of the case our original proposition follows i.e. it must be (a) incurred as a debt, and (b) incurred on behalf the government. With these two postulates, inward flows can be categorized as external on internal.

In the Indian context, the classification of external debt is multifold. External Debt in India is classified under seven heads, (a) multilateral, (b) bilateral, (c) IMF loans, (d) Trade Credit, (e) Commercial Borrowings, (f) NRI Deposits and (g) Rupee Debt. The sum of these seven constituents is termed as Long Term Debt of the country, Short Term debt is separately computed and represents the liabilities that are due within a year.

Even amongst these classifications, debt is distinguished in terms of burden it imposes i.e. (a) concessional or (b) non-concessional. However this classification is only internal and does not carry any implication for the external scenario and carries meaning only for the host country and that too in the nature of low interests and longer terms of repayment.

**Indicators of Debt Sustainability**

External-debt-sustainability analysis is generally conducted in the context of medium-term scenarios. These scenarios are numerical evaluations that take account of expectations of the behavior of economic variables and other factors to determine the conditions under which debt and other indicators would stabilize.
at reasonable levels, the major risks to the economy, and the need and scope for policy adjustment. In these analyses, macroeconomic uncertainties, such as the outlook for the current account, and policy uncertainties, such as for fiscal policy, tend to dominate the medium-term outlook.

The reason for predominance of current account balance arises because if deficits persist the country's external position may eventually become unsustainable. In other words, financing of continually large current account deficits by the issuance of debt instruments will lead to an increasing debt burden, undermining solvency and leading to external vulnerability from a liquidity perspective, owing to the need to repay large amounts of debt. To this end, various indicators are employed to determine the sustainable level of external debt.

These indicators are primarily in the nature of ratios i.e. comparison between two heads and the relation thereon and thus facilitate the policy makers in their external debt management exercise. These indicators can be thought of as measures of the country's "solvency" in that they consider the stock of debt at certain time in relation to the country's ability to generate resources to repay the outstanding balance. Examples of debt burden indicators include the (a) debt to GDP ratio, (b) foreign debt to exports ratio, (c) government debt to current fiscal revenue ratio etc. This set of indicators also covers the structure of the outstanding debt including the (d) share of foreign debt, (e) short-term debt, and (f) concessional debt in the total debt stock.

A second set of indicators focuses on the short-term liquidity requirements of the country with respect to its debt
service obligations. These indicators are not only useful early-warning signs of debt service problems, but also highlight the impact of the inter-temporal trade-offs arising from past borrowing decisions. Examples of liquidity monitoring indicators include the (a) debt service to GDP ratio, (b) foreign debt service to exports ratio, (c) government debt service to current fiscal revenue ratio etc. The final indicators are more forward looking as they point out how the debt burden will evolve over time, given the current stock of data and average interest rate. The dynamic ratios show how the debt burden ratios would change in the absence of repayments or new disbursements, indicating the stability of the debt burden. An example of a dynamic ratio is the ratio of the average interest rate on outstanding debt to the growth rate of nominal GDP.

With this understanding, let discuss in brief each indicator of external debt sustainability:

(i) Debt to Exports Ratio: The debt-to-exports ratio is defined as the ratio of total outstanding debt at the end of the year to the economy's exports of goods and services for any one year. As a measure of sustainability, it is used because an increasing debt-to-exports ratio over time, for a given interest rate, implies that total debt is growing faster than the economy's basic source of external income, indicating that the country may have problems meeting its debt obligations in the future.

(ii) Debt to GDP Ratio: The debt-to-GDP ratio is defined as the ratio of the total outstanding external debt at the end of the year to annual GDP. By using GDP as a denominator, the ratio may provide some indication of the potential to service external debt by switching resources from production of
domestic goods to the production of exports. It may be noted here that a country might have a large debt-to-exports ratio but a low debt-to-GDP ratio if exportables comprise a very small proportion of GDP.

(iii) Present Value of Debt to Fiscal Revenue Ratio: The ratio of the present value of debt to fiscal revenue is defined as the ratio of future projected debt-service payments discounted by market-based interest rates (a risk-neutral commercial reference rate) to annual fiscal revenue. This ratio can be used as a measure of sustainability in those countries with a relatively open economy facing a heavy fiscal burden of external debt. In such circumstances, the government's ability to mobilize domestic revenue is relevant and will not be measured by the debt-to-exports or debt-to-GDP ratios. An increase in this indicator over time indicates that the country may have budgetary problems in servicing its debt.

(iv) Debt Service to Exports Ratio: This ratio is defined as the ratio of external debt-service payments of principal and interest on long-term and short-term debt to exports of goods and services for any one year. The debt-service-to-exports ratio is a possible indicator of debt sustainability because it indicates how much of a country's export revenue will be used up in servicing its debt and thus, also, how vulnerable the payment of debt service obligations is to an unexpected fall in export proceeds. This ratio tends to highlight countries with significant short-term external debt. A sustainable level is determined by the Debt Service ratio and interest rates, as well as by the term structure of debt obligations. The latter may affect creditworthiness because the higher the share of
short-term credit is in overall debt, the larger and more vulnerable is the annual flow of debt-service obligations.

(v) International Reserves to Short-Term Debt Ratio: This ratio is a pure liquidity indicator that is defined as the ratio of the stock of international reserves available to the monetary authorities to the short-term debt stock on a remaining-maturity basis. It is a useful indicator of reserve adequacy, especially for countries with significant but not fully certain, access to international capital markets. The ratio indicates whether international reserves exceed scheduled amortization of short, medium and long-term external debt during the following year; that is, the extent to which the economy has the ability to meet all its scheduled amortizations to nonresidents for the coming year using its own international reserves. It provides a measure of how quickly a country would be forced to adjust if it were cut off from external borrowing— for example, because of adverse developments in international capital markets. All scheduled debt amortization payments on both private and public debt to nonresidents over the coming year are covered in such a ratio under short-term debt, regardless of the instrument or currency denomination. A similar ratio can be calculated focusing on the foreign currency debt of the government (and banking sector) only. This may be especially relevant for economies with very open capital markets, and significant public sector foreign currency debt.

Over and above these are general indicators of external debt, there are various variations suggested in these indicators. For example, Pablo Guidotti (1991), former Deputy Minister of
Finance of Argentina, is credited with being the first to propose that countries should manage their external assets and liabilities in such a way as to be capable of living without foreign borrowing for up to one year. He so suggested 'external balance sheet rule' implies that usable foreign exchange reserves must at least exceed scheduled external amortization for one year. Later, Alan Greenspan (2014), Chairman of the Federal Reserve Board of the United States suggested that the 'Guidotti-rule' be refined by having a 'liquidity-at-risk' standard which is somewhat similar to the value-at-risk methodology used by financial institutions. Under this standard, a country's external liability position would be computed across a wide range of possible outcomes, taking into account the full set of external assets and liabilities. An appropriate level of reserves would then be the one that provides a high probability that external liquidity will be sufficient to avoid new borrowing for at least one year.

**Deficits and Debt Ratios: Finding a Sustainable Level of Debt**

Various approaches have been suggested to determine an optimum level of sustainable debt.

Some of them can be summerised as under:

1. **Debt to GDP ratio**, *Feldstein (2004)*

   A budget deficit implies that the national debt is increasing. But if the GDP also rises, the ratio of the national debt to GDP may or may not increase. This depends on whether the growth rate of the national debt is more than or less than the growth rate of GDP. A continually increasing ratio of debt to GDP runs the risk of the debt going towards an unsustainable path leading to national insolvency. Even if it does not turn
unsustainable, a high ratio of debt to GDP has serious adverse consequences. Therefore it is important to understand what drives the ratio of debt to GDP and what the equilibrium level is.

Here one must distinguish between (a) standard budget deficit and (b) primary budget deficit. The primary deficit is the standard deficit minus the Interest on the government debt. Equivalently, as traditionally measured, the primary deficit is government non-interest outlays minus total revenues.

This shows that the ratio of debt to GDP will unambiguously rise if there is a primary deficit (i.e. if government non-interest spending exceeds revenue, G - T greater than zero) and if the interest rate on the national debt exceeds the growth rate of GDP. The logic of this is clear. The primary deficit adds to the national debt and the positive difference between the interest rate and the growth rate of GDP means that the interest payments alone cause the debt to rise faster than GDP. To reduce the ratio of debt to GDP, (a) there must be either a primary surplus (i.e., revenue must exceed non-interest outlays or G - T should be negative) or (b) the economy must grow faster than the rate of interest, or (c) both. If only one of those conditions holds, it must be large enough to outweigh the adverse effect of the other.

Experience around the world shows that a rising ratio of debt to GDP increases the probability of some kind of debt default or debt restructuring. While an increase in the debt ratio can in principle be reversed, it becomes harder to do so as the interest rate rises, accelerating the growth of the debt and decreasing the growth of GDP. On the other hand, while a continuing rise in the ratio of debt to GDP is a path to insolvency
and economic crisis, even a stable but high ratio of debt to GDP has serious adverse effects on the economy by crowding out private capital formation and imposing a higher tax burden to service the debt. Thus the obvious question that arises is what determines the stable level of the debt to GDP ratio? The basic equation for the growth of the debt to GDP ratio implies that there is no change in the ratio when the primary deficit as a fraction of GDP is equal to the product of the debt to GDP ratio and the difference between the interest rate and growth rate:

\[
\frac{(G - T)}{GDP} = \left(\frac{\Delta GDP}{GDP}\right) - i \frac{\text{Debt}}{GDP}
\]

This implies that a stable ratio of debt to GDP must satisfy that:

\[
\frac{\text{Debt}}{GDP} = \frac{(G-T)/ GDP}{( GDP/ GDP) - i}
\]

or

\[
\frac{\text{Debt}}{GDP} = \frac{\text{Ratio of Primary Deficit to GDP}}{\text{Growth Rate of GDP - Debt Interest Rate}}
\]

It is obvious that there are three ways to reduce the budget deficit viz (a) to cut non-interest government outlays, (b) to increase tax or other revenue, and (c) to reduce the rate of interest on the government debt. A faster rate of economic growth would also reduce the equilibrium ratio of debt to GDP and the risk of a shift to an unstable path of debt to GDP.

**II Debt Service Analysis, Mwaba (2001)**

This approach takes into account the fact that the main cost associated with foreign borrowing and the accumulation of a
large debt is the debt service i.e. the liquidation of principal and accumulated interest, which represents a contractual fixed charge on a country's income, savings and foreign exchange reserves. As borrowing increases or as interest rates on accumulated borrowings rise, debt service, which is required to be paid in foreign exchange also rises. This implies that debt service can only be met with export earnings—thus should exports decline or prices of exports fall, or interest rates rise significantly, and exceed the country's export capacity the country starts to experience debt difficulties.

The analysis begins with the construction of a simple function $Y = f(B)$ in the following form;

$$Y = bB \quad (1)$$

where $Y$ represents the national income of the indebted country and $B$ is the foreign aid or external borrowing and $b$ is the function between $Y$ and $B$.

The equation states that increases in external borrowing would generate proportionate growth in income; in other words there would be without exception, a positive and significant correlation, whereby growth in external finance brings about positive changes in income of the same magnitude.

This situation could have been sustained in perpetuity, so long as the external assistance was in the form of outright grants and the benefactors were willing to continue making available these resources. But since the debts do not come for free and have an interest obligation attached with them, a new dimension needs to be introduced i.e. the cost in debt service or interest payments.
This brings our function to the equation:

\[ Y = bB - rB \quad (2) \]

where \( r \) is the rate of interest on foreign borrowing and \( rB \) the annual interest payments. Since we have already given the condition that \( Y = bB \), the equation can also be presented as follows to reflect the cost of debt service on national income:

\[ bB = Y - rB \quad (3) \]

For this expression to hold, \( Y \) must at the minimum, exceed \( bB \) by \( rB \). In other words, the income should grow at a rate faster than the rate of growth of debt just so as to cover the interest payments. The implication of this requirement is that it is not enough for income to grow in direct proportion with the rate of accumulation of the debt, growth in income should exceed that of debt to enable the country to meet its interest payments. The equation subsequently transforms into the following relationship when principal payments are introduced as the loans reach maturity:

\[ bB = Y - rB - \frac{B}{t} \quad (4) \]

where \( \frac{B}{t} \) represents the contractual fixed annual principal repayments on borrowings contracted over period \( t \). For sustainability of the relationship, or for that matter for debt sustainability, the right-hand side of this equation must be equal to the left-hand side of the equation. That is to say, the growth in income in a given year must exceed the annual debt service on the accumulated borrowings or debt represented by the annual interest payments (\( rB \)) and principal payments (\( \frac{B}{t} \)).
(III) Basic Transfer Analysis, Mwaba (2001)

The concept of basic transfer is defined as the net foreign exchange inflow or outflow related to its international borrowing. It is measured as the difference between the interest payments on outstanding loans and the net capital inflow. The basic transfer (BT) equation can be expressed as follows:

\[ FN = dD \] (5)

where \( FN \) implies the net capital inflow and \( D \) is the total accumulated foreign debt. Now, since interest must be paid each year on accumulated debt, let \( r \) equal the average rate of interest so that \( rD \) represents total annual interest payments. The original equation is therefore modified such that it shows the net capital inflow minus interest payments i.e.

\[ BT = dD - rD = (d-r)D \] (6)

The basic balance will be positive when \( d > r \) and the country is gaining foreign exchange from borrowing and other sources. The basic transfer turns negative if \( r > d \) and the country begins to lose foreign exchange.

At the outset of the accumulation of external borrowing, when a country has a relatively small amount of debt, \( D \), the rate of increase \( d \), will be higher. This is also because most early stage borrowings come from official sources such as bilateral donors and multilateral development banks, and as such debt is incurred at a lower cost with longer repayment periods, as opposed to the case if the borrowing was on commercial terms. At this stage \( r \) is low and in all cases smaller than \( d \). Thus we
find that as long as the foreign aid or debt accumulated is used in productive investments, whose rates of return exceed r, the rise in borrowing does not pose a problem or threat for the recipient country.

Here one shall note that the problem of sustainability actually arises when (a) the accumulated debt becomes very large such that its rate of increase, d, naturally begins to decline as repayments increase relative to new inflows or as the net inflows decline; (b) when the terms of borrowing become increasingly commercial resulting in increases in r; (c) when the country's balance of payments deteriorate as a result of falling export prices; (d) when an external shock such as a global recession or rising oil prices, or a rise in the value of the US$ in which most external loans are denominated, occurs; and (e) when there is a loss of confidence in the country resulting in the cutting off of private capital flows and investments. Also, a significant amount of capital flight occurs due to economic and political reasons including civil unrest and conflict or fears of large currency devaluation.

On having a perusal of above position of Indian economy in general and external debt in particular several questions arise. This study proposes to work out structural analysis of India's external debt to answer these questions having following objectives in mind.

SECTION IV

OBJECTIVES OF THE STUDY:

External Debt has contributed in accelerating the rate of Economic Development of Developing Countries. India is no
exception in this regard. The main Objective of the present Study is to understand the Structural Analysis of India’s External Debt since 1980. Accordingly, the Objective of the study are

1) To examine the relationship between External Debt and Economic Growth of Indian Economy during Pre and Post Economic Reforms periods.

2) To analyse the extent and magnitude of External Debt

3) To examine the behavior of key external Debt indicators in terms of Debt management problem.

4) To assess the role of economic reforms in improving the debt sustainability indicators.

SIGNIFICANCE OF STUDY

It is true that the focus of external debt is enhance the economic development, but it starts affecting economic development adversely when the external debt is not managed efficiently. It is observed by many researchers that the accumulation of external debt particularly in developing countries may ascend a problem of debt overhang and original sin. The empirical literature available on the problem of external debt show indistinguishable state of affairs related with a variety of issues of external debt in developed and some of the developing countries. But, till now there is no comprehensive study manifesting assorted aspects in reference to developing countries in general and India in particular. Hence, the researcher feels the need to investigate various aspects of external debt (e.g. causes, determinants, and management) in Indian context, and
also to examine whether external debt has really ignited India's growth engine or not.

**HYPOTHESES OF THE STUDY**

1. External Debt has increased tremendously over the period of study.
2. External Debt and Economic Growth are positively and significantly related to each other.
3. There may be hump in the Debt service payments due to maturity of Bills.

**METHODOLOGY AND DATA SOURCES**

The emphasis has been made to an understanding of the structural analysis of India's external debt since 1980. The study is entirely based on Secondary Data. The Data and other relevant information has been collected from the published reports and various National and International institutions, i.e., World Development Reports (WDRs), United Nations Development Programme (UNDP), World Bank (WB), National Sample Survey Organization (NSSO), Planning Commission (PC), Human Development Report (HDR), International Monetary Fund (IMF), RBI Summary and reports, various status reports on External Debt, Economic Surveys (ESs) of India. In this study, Simple Growth Rate \( r \) has been used to calculate the External Debt in India with the help of the following formulae:

\[
\frac{(P_n - P_0) \times 100}{P_0 \times n}
\]

Where, \( r \) = Simple Growth Rate \( (r) \)
\( P_n = \text{Present or future value} \)
\( P_0 = \text{Past or present value} \)
\( n = \text{Length of the time-period} \)

Study covers the period from 1980 to 2014. Compound Growth rates (ACGR) of various variables have been calculated by fitting the exponential function:

\[ Y = AB^t \]

Here A: is constant

\[ B = 1 + R \]

\( r = \text{CGR} \)

\( t = \text{time variable} \)

In log form equation will be

\[ \log Y = \log A + t \log B \]

and using usual least square of fitting constant we found:

\[ \log B = \frac{\sum t \log y_t - \left( \frac{\sum t \log y}{N} \right)}{\left( \sum t^2 - \left( \sum t \right)^2/N \right)} \]

\( B = \text{Antilog of } B \)

The specific Research methodology with respect to above objectives will be as follows.

1. For understanding growth composition of external debt in India the researcher would analyze the trends and pattern of external debt with the help of secondary information. The External Debt Sustainability of India will be analyzed using debt performance indicators developed by IMF and World Bank. For this purpose the researcher will use the methods,

2. The determinants of external debt will be identified by reviewing available literature on the topic, and also by consulting researchers, academicians, and the executives of Regulatory Authorities.

3. The Impact of External Debt on India’s macroeconomic performance will be traced by using Unit Root (ADF/ PP) Test and OLS.

LIMITATION OF THE STUDY

1. The major source of data has been World Debt Tables. This data may not reconcile with other sources of data like RBI publications.

2. The study is confined to the period 1980-2014.

3. Last but not the least is the limitation of the time and resources.

CHAPTER SCHEME

Chapter - I Introduction
Chapter - II Review of Literature
Chapter - III Growth of India's External Debt Since 1980
Chapter - IV Structural Analysis of India's External Debt: 1980-2014
Chapter - V Impact of External Debt on Economic Growth
Chapter - VI Conclusion including main Findings, Suggestions and Policy Implications