INDIA'S EXTERNAL COMMERCIAL BORROWINGS 1976-77 TO 1987-88

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I hereby affirm that the research for this dissertation titled "India's External Commercial Borrowings 1976-77 to 1987-88" being submitted to the Jawaharlal Nehru University for the award of the Degree of Master of Philosophy was carried out entirely by me at the Centre for Development Studies, Trivandrum

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Certified that this dissertation is the bonafide work of Tapati Deb and has not been considered for the award of any other degree by any University.

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INTRODUCTION

Though the international flow of capital existed even prior to the Keynesian revolution, the concept of deficit financing and the role of government in the course of development process appeared to be highly pronounced only by the 1930s, with the publication of "General Theory of Employment Interest and Money[1]". The classicists, who believed in Say's law and automatic adjustment of the temporary disequilibrium in the economy through the `invisible hand', could not visualise any divergence between savings and investment which necessitates government borrowings. However, deficit financing stands to be the order of the day for both the developed and developing economies, though in a dimensionally different way.

Viewed in the context of a developing economy, in order to fill the resource gap, generally a government opts for both internal and external borrowing. But the development requirements limit the scope of the role of internal borrowing facilities thereby emphasising that the only feasible device to overcome the disequilibrium is to rely on external borrowings. However, external borrowing is eventually followed by the emergence of a debt burden in the form of resource transfers on developing countries. It needs to be noted here that debt servicing burden swallows a significant portion of the foreign exchange earnings of the developing countries every year which pave the way for the lenders (the group which comprises of developed countries and international financial institutions) to appropriate a huge surplus by channelling resources more

profitably in the low-income developing economies. It may be stated here, based on World Debt Tables, 1989-90, that during 1980-89, net resource transfers (resource flows adjusted for interest payments on long and short - term loans) from creditors to the developing debtor countries have declined steadily. This reduction since 1982 has been more pronounced, and hence, is a cause for concern as it has taken place for a number of low-income countries. Eventually, these countries have fewer available resources for consumption and investment purposes, due to negative net transfers as has been witnessed since 1983, relative to what they have produced.[2] Moreover, the pace and scale of the decline has been more rapid than could be expected on account of a gradual development process.

The issues related to debt and debt servicing burden, especially in the context of commercial borrowings, were not the subject matter of serious concern during the period immediately following the Second World War. The period was characterised by official capital flows, mostly on concessional terms, barring a portion which could be attributed to the trade credits. Private international capital flows were hardly existing. However, the developments in the 1950s gave berth to private capital flows in the international financial transactions.But the latter grew rapidly during this phase among developed industrialised countries of the West. The period was, also characterised by the simultaneous movement of equity[3] capital from developed to developing economies though on a meagre scale. During 1960s, a few rapidly growing developing economies, especially the newly-industrialising countries of Far East, gained access to the

private sources in their effort to supplement their domestic savings. Since then the existing developing country borrowers in the international capital markets continued borrowing on a magnified scale, while the newer ones started resorting to such sources. By 1970, it is estimated that developing economies as a group had a 50.9 percent of their debt from private sources, although the variations among groups of developing economies was enormous with low - and middle - income Latin America and Africa accounting for major portion of the share of private sources in total debt.

With the first oil shock in 1973-74, the trend took a sharp upward turn. Non-oil producing developing countries in their effort to restore their current account position took refuge in syndicated loans through which commercial banks actually recycled the current account surpluses of the oil exporting countries. Thus, during 1973-80, developing economies' outstanding long-term debt grew at an annual average rate of 21.3 percent while debt from private sources grew by 24 percent per annum. The situation worsened further following the second oil crisis of 1979 and the consequent developments in international economic scenario during 1979-82. Borrowings during the earlier phase coupled with the developments in period following the second oil crisis led to the emergence of debt crisis of 1980s mainly faced by the Latin American and African economies. It is against this backdrop, that India's international indebtedness requires careful examination.

Now let us turn to the milieu of India's borrowing which is not significantly different from the one observed in respect of other developing economies who have maintained their indebtedness on a sustainable level. The inflow of foreign capital into India took the form of equity capital in the pre independence era. These were mostly confined in certain selected areas like plantation, shipping, banking and in some infrastructural services. Obviously, the nature of such inflow of resources was in conformity with the colonial character of transfer of resources. External debt was virtually nonexisting in the pre-independence period and the period immediately following the independence barring loans extended by the I.B.R.D. for the development of infrastructure as far back as 1949. Foreign borrowing, in its true sense, was initiated following the adoption of import substitution policy and the launching of heavy capital goods industry oriented second five-year plan in the mid-1950s. Since then India has kept her pace to borrow unabated mainly with the purpose of acquiring development finance over the years. Occasionally, the country had to borrow for smoothing consumption following unanticipated emergence of drought, and consequent inflationary situation, etc., but the main purpose over the years has been to bridge the gap between savings and investment. The pace of borrowing has increased in 1980s. This presents a contrasting situation if viewed in the context of the monetary structure of the economy as well as the conditions of other developing economies.

The structure of the monetary system and the behaviour of important macro economic variables, like, savings and investment

in India are to a great extent similar to those in some of the advanced countries[4]. Moreover, the well-knit financial structure that emerged in 1970s and thereafter did its deepening thereby facilitating the growth in the rate of household saving in financial assets rather than in fixed assets as found in many of the developing countries. In India, the rate of saving has increased from 10.4 percent of GDP (MP) in 1950-51 to 19.6 percent of GDP (MP) 1987-88. Viewed in this context, it is surprising to note that the role of foreign resources, and particularly external commercial borrowing, has gone up alarmingly in 1970s and 1980s.

The major phases of India's external borrowings may be delineated as under,

i) period of exclusive reliance on official resources- both bilateral and multilateral; and

ii) increasing recourse to external commercial borrowings in the 1980s.

Following the first oil crisis, India did not resort to commercial borrowings like majority of developing economies of Latin America. The period was rather effectively managed with the help of official loans, favourable developments in external sector as well as special facilities provided by the IMF. However, the onset of 1980s following the second oil crisis ushered in a new era in India's external borrowing pattern when India started borrowing from international financial markets on a large scale. The probable reasons could be

a) non availability of required amount of official resources, mostly concessional loans;

b) stringent conditions[5] attached to the resources provided by the IMF which, it was felt, make a country subservient to the regulations of IMF in so far as the freedom in pursuing economic policies is concerned; and

c) country's improved creditworthiness during most of 1980s and consequent insistence by leading official donors that India must borrow more in the international financial markets.

Thus, the second oil crisis coupled with slackening in world growth rate as a consequence of the adoption of anti-inflationary macro economic policy stance by the major developed country donors and other unanticipated factors like the entry of China as a major contender for official resources virtually compelled the country to opt for commercial borrowings.

Despite commercial borrowings on a magnified scale in the 1980s the country has not been inflicted with debt crisis as has been the case with Latin America and African countries. Rather it is contended that the country has maintained an uniformly good debt profile through prudent debt management.

The experience of India in contrast with those in Latin American and African countries may be linked to her divergent economic structure and social set up. India has got a strong democratic set up with a large section of elite middle class representing the government which are virtually absent in majority of the debt ridden countries of today. Moreover, a

country with a long history of planning for resource allocation (which dates back to the period of Bombay Plan) and well defined regulations regarding foreign borrowings will definitely turn out to be a different one in the context of borrowing compared to those lacking in these characteristics. Thus, an analysis of the various dimensions of India's external indebtedness assumes significance.

As stated earlier, the major receipients of foreign funds are the low-and middle-income developing countries of Latin America and Africa. Not surprisingly major theoretical abstractions have been attempted based on assumptions describing those major borrowing countries' conditions. While empirical analyses have centred around the experiences of these countries, very few attempts have been made regarding the experiences of borrowers in Asia. More so, there has been a total absence of any attempt on developments in the Indian context, despite the fact that her experiences in this context are quite interesting. Furthermore, the conclusions applicable in the context of Latin American and other developing economies of Africa cannot be applied in the Indian condition due to the reasons as narrated earlier. Hence, Indian experience calls for an individual country - specific approach into the problem.

Besides the above, the volume of concessional flows is anticipated to shrink in future in view of the global developments. Also the major developments in the East European block will likely to debar India from increased accessibility to official loans. Sources provided by the IMF facilities have not

been considered as a substitute since these are treated as a part of resources to meet contingencies. Direct foreign investments are an important constituent in the flow of foreign resources. However, these have been excluded on both theoretical as well as on empirical grounds. Regarding the former aspect, as the thesis is based on debt related issues bearing "contractual liabilities"[6], direct foreign investments have not been considered since these are equity participations and hence do not meet the criterion of contractual liabilities. Empirically, these resources, though expected to grow in future, are not considered to grow large enough to substitute external borrowings to fill the resource gap which an economy faces while traversing along the path of development. Hence, the only feasible device appears to be resorting to commercial borrowings on a large scale as a source of development finance.

In addition to the above justification, there are certain other reasons emanating from the particular nature of commercial resource flows. Commercial borrowings are very different from concessional loans and other sources due to the attached terms and conditions, the absence of grant element, the free character of the resources (these are mostly untied resources, except suppliers' credits), etc. Moreover, other sources are contracted at fixed rate, but commercial loans may be contracted both at fixed as well as at variable rates. This latter characteristic ascribes a new dimension of uncertainty in the interest payment burden on the borrower.

As we have seen in the preceding paragraphs, the growth of commercial borrowings in 1980s presents a fundamentally different scenario in the context of debt-service obligations vis-a-vis debt servicing capacity. The question is if such growth continues or if any intensification in growth takes place in future, will the country's borrowing be extended beyond or below the point which would optimise the long-run growth of the country.

Thus, a systematic evaluation of debt accumulation vis-a-vis the development process over a finite time horizon may be viewed as an appropriate approach alongwith the derivation of concomittant outcomes inherent in the process. The criterion will be assessing the sustainability[7] of the debt path as measured by the relationship between debt service obligations and debt servicing capacity.

Furthermore, commercial borrowings have been resorted to with the aim of supplementing domestic investible resources required for smooth pursuing of development programmes. Thus, these resources have been injected into the economy along certain directions with definitive aims. Hence, at the disaggregated level an attempt will be made to ascertain the allocative aspect of the use of these resources.

The organisation of the thesis is as follows. Chapter one will be intended to review the existing literature concerning long-run aspects of external borrowings.

The second chapter will be an attempt in providing a brief review of the stylised facts regarding India's debt accumulation in the late 1970s and in 1980s.

Chapter three is intended to analyse the long-run aspects of India's debt-build ups.

Chapter four will be concentrating on the allocative aspect of resources, borrowed commercially, at sectoral level.

Chapter five will summarise and conclude the thesis.

NOTES

1. Keynes himself had not specifically addressed the circumstances of the developing countries in his General Theory of Employment Interest and Money (1939), but he left two important lines of thought regarding foreign resources. The first was his own emphasis on the re-priming economic activity. The second was his ideas transferred through practice of Keynesianism which ultimatily were utilised for formulating dynamic models of economic growth providing basis for explaining the beneficial role of foreign capital in the growth process.

   See, Keynes, J.M. (1939): General Theory of Employment Interest and Money.

2. The development process implies that as a country develops over time, it can be expected to shift from being a net receipient of transfers from abroad to a net provider of external resources. Hence, a negative net resource transfers need not necessarily be the cause for concern for individual countries.

3. The United Nation's System of National Accounts' definition of corporate equities is "instruments and records acknowledging claims to the residual value, and residual income, of incorporated enterprises, after the claims of all creditors have been met".

4. See Chakravarty, S. (1985): "Report of the Committee to Review the Workings of the Monetary System, RBI, Bombay.

5. Generally, programme/programmes supported by Fund resources contain quantitative targetting or performance criteria on the contracting of financial assistances from the Fund.

6. Contractual liabilities is a crucial element in the definition of external debt. It means, in the context of the definition, an obligation to make specified payments, including instances such as a financial obligation stemming from a court ruling, warn there may be no contractual agreement.

   See, A Report by an International Working Group on External Debt Statistics of: IBRD, IMF, BIS and OECD (1988): External Debt Definition, Statistical Coverage and Methodology, pp.19-20

7. Sustainability implies that economic stagnation will not set in. In the context of external borrowings, sustainability would mean that the country's levels of output growth, investment and other important macro variables will perpetuate such that the country would be in a position to service debt obligations without jeopardising the development process for which it borrows abroad.

CHAPTER ONE

REVIEW OF LITERATURE

The 1970s have witnessed the emergence of an excessive reliance placed upon debt finance, especially commercial loans. This has given berth to high unpredictability both in the service obligations and in the gross flow of such resources to the developing countries. Under such a precarious condition of the global financial system, questions arise as to whether the developing countries have been borrowing excessively and whether creditors have lent beyond the feasible limit. While these questions have a long historical strand, economists in recent years have been increasingly concentrating on the above issues which resulted in voluminous literature on the topic. However, keeping in line with the basic objective of the thesis, in the present review it has been attempted to survey literature on the issue of debt capacity. The focus has been on that segment of the literature which deals with the problem on a general analytical rather than a descriptive or case-specific level.

The issue on debt capacity may be approached from two broad angles[1]. It may be asked either what is the optimal level of a country's borrowings, or are the debt policies pursued by a debtor economy sustainable? The former is in keeping with the choice - theoretic approach in economics; while the latter, in principle, involves deriving an expenditure plan subject to certain given constraints. The optimising approach has been the subject matter of major attention of the theoretical literature. However, the principles of optimality are difficult to apply in practice, and hence the focus of attention of the applied economics is more on the sustainability aspect.

To begin with, the issues on debt capacity have traditionally been dealt within a framework of development process, the genesis of which could be found in the works dating back mid-1960s. Until recently, the approach has been to delineate the investment role of external borrowings and hence to assess the optimality or sustainability conditions. However, possible uses of external borrowings go beyond this investment role. Borrowings can be undertaken for various purposes, such as consumption smoothing, minimising the adjustment costs when an economy attempts to absorb a permanently downward pull in income, etc. Since mid-1970s, significant attention has been paid to these considerations in the context of external borrowings.

However, the varied nature of considerations for which external borrowings are undertaken has precluded any easily applied analytically derived formula for assessing the debt capacity of a borrowing economy. Consequently, there has been considerable interest on studies that try to identify those circumstances under which countries have experienced debt servicing difficulties. Though this empirical approach originated simultaneously with the theoretical literature in the 1960s, these issues have been dealt with more extensively since mid-1970s.

More or less parallel to the evolution of the theoretical and empirical studies on debt capacity, numerous econometric studies about developing country borrowing practices were undertaken. This was attempted mainly to supplement subjective policy judgements with substantive quantitative basis.

The literature surveyed in this chapter focusses on debt capacity from the borrower's perspectives and is based primarily on borrowers' characteristics. Besides, the discussion deviates from a risk-free set up since the nature of international portfolio investment is such that typical contracts cannot be specified in real terms or enforced with certainty.

Based on the characteristics of the literature, the chapter has been organised into the following sections. Section one deals with development-cum-debt models, in which debt capacity has been viewed both from optimising as well as non-optimising behaviour of the borrowers. Section two concentrates on indicator approaches to analyse the debt capacity issue. In recent years, considerable effort has been channelled into trying to empirically identify circumstances under which countries experience debt - servicing difficulties, using a number of explanatory variables, a group of external debt ratios, and other economic indicators. This set of literature has been dealt with in this section.

SECTION ONE

This section concentrates on the development-cum-debt models available in the context of debt capacity. However, these models may be studied under two broad heads: those which are static in nature and those which are multi-period dynamic models. The former group is essentially static in the sense that the anticipated future events have no bearing on current borrowing decisions; while the latter group consists of models which

describe the accumulation of net foreign debt as a consequence of anticipated future events influencing savings and investment behaviour.

1.1: Static Development - cum - Debt Models.

This subsection begins with the traditional approach to the question of debt capacity, in so far as it relates to analytical derivation of the time path of debt within the development - cum-debt framework. The main theme is on highlighting general principles about debt capacity that can be learnt from analysis of these literature.

Broadly, the traditional line of approach underlines the lack of physical capital accumulation as the main impediment to the development process. This is the resultant of shortages in domestic savings as well as in foreign exchange resources. In this framework, external borrowings are seen as a source of increased resources for investment.

The pathbreaking attempt[2] to underline this investment role of external resources in a development-cum-debt framework is based on the Harrod - Domar model. The direct focus of this attempt has been on describing how debt situations evolve over time, i.e., sustainability in the context of debt capacity, rather than making judgements as to how much a country ought to borrow. Thus, the models have been discussed within non-optimising or outside the rational - actor framework and hence cease to be welfare analysis of borrowings.

This line of approach has been based on certain crucial structural elements which are as under.

1. The economy works with a fixed coefficient production function.
2. There are exogenously determined target growth rate, and a fixed capital-output ratio. These two together determine the required investment ratio.
3. The marginal propensity to save out of output is constant.
4. There is no supply bottleneck. External borrowings are needed and assumed to be forthcoming to fill the gap between the required level of investment and the level of domestic savings, as also to service outstanding debt.

Using the above Harrod - Domar framework, the evolutionary path of debt has been derived analytically. Such a framework condenses the dynamics of debt to some basic elements and give clear insights into the mechanics of the process being examined.

Some parameterisation of these models[3] based on the above framework yields the transitional phases through which countries traverse from the initial position of young debtors[4] to finally becoming mature creditors.[5] This process of progression is obviously not the outcome of any optimising framework. In fact, it is practically impossible for all countries to be net creditors. Eventually, attention has been focussed on cases where transition does not take place and where debt continues to grow indefinitely and sometimes resulting into an explosive debt path.

Within a non-optimising borrowers' framework, these models have assumed that cost of borrowing would become unsustainable if the time path of debt/GDP ratio is unbounded. Given the cost conditions of external borrowings, it is the target rate of growth which determines the boundedness of the debt/GDP ratio and hence the sustainability in the context of debt capacity issue.

Clearly, what determines the output growth rate depends on whether the growth rate formula is derived from consideration of internal (saving-investment) balance, or from consideration of external (current account) balance. In the former case,[6] the output growth depends on saving parameters and capital- output ratios as in the Harrod-Domar equation. If borrowing is necessitated by a deficiency of domestic savings, it follows that, to service and repay debt, there will have to be an excess of domestic saving over and above that needed for financing domestic investment. A crucial factor here will be what is happening to the domestic savings ratio. If the marginal propensity to save exceeds the initial average propensity to save, the savings ratio will rise. Other things remaining constant, a rising savings ratio will offer a better prospect that the debtor will be able to meet its obligations than if the ratio were falling.

Thus, the debt/GDP ratio will reach finite limit only if the target rate of growth is higher than the interest rate charged on external borrowings (rate of growth > the interest rate). Clearly, any deviation from this critical inequality will result in an explosive debt path and hence is not sustainable.

Models[7] which derive rate of growth based on consideration of external balance, assume that with fixed savings and import ratios, export growth becomes the determinant of output growth. This is so as borrowing is undertaken to close a foreign exchange gap, i.e., the gap between the foreign exchange needed to buy the imports for development purposes and the foreign exchange earned through exporting, the repayment of the related debt, and this requires that the borrowing economy reverses this gap and moves into a current account surplus.

The significance of export performance relative to changes in interest rates is revealed here by the fact that where the interest rate is higher than the growth rate of exports, a trade surplus will be required if the debt/export ratio (an indicator of sustainability) is to be prevented from increasing. At the same time, with export growth greater than the interest rate, a constant proportionate trade deficit will not raise the debt/export ratio. Hence, the exports determine the output growth.

The critical condition for a finite limit of the debt/GDP ratio becomes export growth rate greater than the interest rate (export growth rate > the interest rate) in which case the debt path will not become an explosive one.

These static models provide insights into the investment motives for using external borrowings and hence tend to exclude a wide range of relevant factors including those emphasising other uses of external finance. Moreover, they have brought out the

spatial relocation of resources. External borrowings relocate resources not only over space, but also over time. Theorists, of late, have added the latter dimension to their analysis. This latter aspect has mainly been incorporated through specifications regarding borrowings between economies aimed at changing their consumption profiles over time.

1.2: Multi Period Dynamic Development-cum-Debt Models.

This subsection reviews briefly the multi-period models of foreign borrowings.

The multi-period models of foreign borrowings work under the following assumptions[8]:

1. the borrowing country generally produces a single good which can be either consumed or invested; of course, where appropriate, the differences that arise in case of more than single good situation will be indicated;
2. population growth does not have any effect on borrowing decision;
3. there is no asset depreciation; and
4. there exists no obligation of debt amortisation.

The models may be broadly categorised into two. On the one hand, there are those which concern themselves only with the various feasible paths of adjustment of capital and debt from initial levels towards their steady - state levels.[9] These studies give insight into the different paths capital and debt

may follow overtime and, in particular, into the conditions under which foreign debt is sustainable and converges towards some equilibrium level. While others address the issue of what characterises the optimal dynamic paths of capital and foreign borrowing over time.

The equation of motion of the debt/output ratio depends on comparative evaluation of the use of foreign borrowing and the interest cost and creditworthiness effects of debt. Such an evaluation is, however, dependent on certain essential elements which are fundamental in any discussion of multi-period borrowing models. These are: (a) a supply of foreign funds schedule which reflects the cost of borrowing; (b) a saving function; (c) a production function which determines the benefits; and (d) a budget delineating relation between national savings and the accumulation of domestic assets and liabilities. These elements are significant as they give rise to dynamic equations describing the movements of capital and foreign debt over time. However, determination of optimal paths requires specification of a multi-period national objective function in addition to the above four elements. Such an objective function specifies the aim of the national authority against which the costs and benefits of foreign borrowings need to be evaluated.

Models[10] available in the context of multi-period borrowings assume either of the following three interpretations of national objective function. These are: (a) maximise the discounted sum of the utility of per capita consumption flows over the planning horizon; (b) maximise the discounted uitlity of per capita

consumption net of social disutility resulting from the level of debt; and (c) maximise the undiscounted sum of per capita consumption flows.

Let us now turn to the various conditions describing the equation of motion of the debt/output ratio under optimising as well as non-optimising behaviour of the borrowers. We shall deal with the latter first.

1.2.1: Non-Optimising Borrowers' Models-

Non-optimising models concentrate on obtaining non-stochastic paths for important macro variables and the debt levels over time, given the base scenario. The existing models focus on deriving these paths and on ascertaining the factors under which a borrowing economy would accumulate unsustainable debt.[11]

Different non-optimising models identify the importance of varying factors both internal (such as marginal savings rate, the growth rate of output, the marginal productivity of capital, the marginal propensity to consume out of foreign resources, and the initial stock of capital), as well as external (such as the cost of borrowings, and the initial level of debt outstanding) in the process of obtaining the time path of debt accumulation. Moreover, these models also identify that debt crises may emerge as a consequence of a rigid imbalance in the key parameters, especially savings rate and productivity of capital. Hence, the situations, as delineated by different models, under which crises

emerge are conditional upon the specifications of behavioural relationships emphasised within the respective model.

To outline the varying criteria for determining the sustainability or unsustainability of the debt paths over time, as derived in these non-optimising models, the following debt accumulation relation has been used[12].

It has been assumed that debt ($\dot{D}$) accumulates in each period by an amount equal to the difference between gross investment (I), and national savings (S-iD), I-(S-iD). Expressing this in debt per unit of output,

$$\dot{d} = (I/Q - S/Q) + (i-g)s, \text{ where } d = D/Q; \text{ and } g = \dot{Q}/Q,$$

is the growth rate of output.

Clearly, the equation of motion of the debt/output ratio will become infinite, if $\dot{d}>0$, and $\ddot{d}>0$ in each time period. Hence, the condition of finite solution in the equation becomes a necessary even though not a sufficient condition for ensuring creditworthiness. However, the criteria that ensure such an outcome depend crucially on the consumption function specification in the context of non-optimising models.

Models[13] with neoclassical consumption and production functions are concerned with tracing out the possible stages of the borrowing process through which a borrowing country passes from a young debtor to a mature creditor stage. This is inevitable since unboundedness in debt paths does not exist due to

inherent assumptions that marginal productivity of capital is always higher than the cost of borrowings and level of consumption never exceeds the level of national income.

However, in most of the models, consumption has been assumed to depend on new borrowings ($\dot{D}$), output (Q) and interest payments (iD). Thus, the assumed form of the consumption function becomes,

$$C = c_q Q + c_d \dot{D} - c_i i D,$$

The debt/output ratio in each time period under such a situation may be obtained as

$$\dot{d} = [I/_Q + c_q - 1 + (1-c_i-i - (1-c_d)g)d]/(1-c_d)$$

The convergence of the debt/output ratio to a finite level in a situation as described by the above equation, however, depends on the assumption regarding the coefficient of d.

Case 1. on the assumption that $c_d = c_i = o$, and $I/_Q$ and g are constant[14], d will reach a finite level as depicted by

$(I/_Q + c_q - {}^{S}1)/(g-i)$, subject to $g>i$. However, this boundedness condition is not a sufficient one as it results in an implicit violation of the lender's intertemporal budget constraint.[15]

Case 2. if consumption is treated as a function of income rather than output, $c = c_q = c_i$, $c_d = o$, then d will reach the finite level $g>(1-c)i$. This satisfies the intertemporal budget constraint as long as $i>g$.

Case 3. if consumption out of foreign borrowing occurs at a rate different from the interest payment, $c \# c_d > o$[16], then the condition for finite level becomes

$$(1-c_d)g>(1-c)i.$$

The above three cases underline that the sustainability condition is conditional upon the sign of the coefficient of d, and not on the initial conditions. This is due to the fact that these models are based upon an exogenously determined growth rate of output and hence the time path of the debt/output ratio can be expressed as a single linear equation in d.

Models[17] in which investment and output (through the production function) are determined endogenously with debt, the equation of motion of the debt/output ratio cannot be described in such a simple form. These models emphasise that the debt path over time may be derived depending on the solution given by the joint determination of debt and the capital stock. Such determination will result in whether the explosive debt paths will exist or not.[18]

1.2.2: Optimising Borrowers' Models-

Attention now turns to those literature in which the emphasis is on deriving optimality criteria for the borrowers. These models[19] assume that a consumption function is chosen to maximise intertemporal utility thereby avoid the problems associated with specification of behavioural relation in the context of consumption.

Optimal borrower models emphasise the role of initial conditions in determining whether a country will be a borrower or not. According to these models, factors such as initial high marginal productivity of capital in a capital scarce developing

country and high social discount rate with low consumption levels but good growth prospects provide a rationale for foreign borrowing which diminishes as income and consumption rise. In these models, planners seek to guide the economy from its initial state towards a long-run equilibirum along optimal paths of borrowing and investment.

Optimal borrower models also indicate the importance of the government's ability to offset deviations from the optimal path due to the actions of atomistic agents within the economy. These models implicitly or explicitly assume that deviations from optimal path do not yield a sub-optimal or unsustainable debt path due to rational planners. Consequently, the possibility of unsustainable debt and actual default is never considered in these models.

The main concern of these models is to arrive at the conditions required for obtaining the optimal path of consumption, foreign borrowing and investment as the economy moves towards a steady state. They explicitly evaluate the costs and benefits of borrowing and highlight the importance of marginal efficiency criterion along an optimal path of borrowing, for each of its alternative uses. Thus, the optimality criterion becomes marginal productivity of capital (MPK) = social discount rate (SDR)[20] = marginal cost of borrowing (MCF).[21]

The main threads of thought involved in these models are as under.

1. Models in which optimising behaviour has been assumed on the part of atomistic agents; and

2. models in which individual agents are assumed to possess full information about the future.

Cases[22] involving optimising behaviour on the part of atomistic agents emphasise that assuming no externalities within the economy, the optimising behaviour of individual agents results in precise satisfaction of the marginal conditions that must be obtained along the optimal path (MPK=SDR=MCF). A necessary precondition for obtaining this optimality condition is that at least two of the marginal elements must be endogenons to the growth/borrowing process. Generally, in optimal borrower models, all three elements are endogenous. The mechanism works as under. With an upward rising interest cost function and a neoclassical production function, it may be shown that MCF increases over time as debt is accumulated. Simultaneously, MPK declines with growth and capital accumulation. Also the marginal utility of consumption and, hence, the SDR declines as the level of consumption rises. Thus, with capital accumulation and output and income growth, the demand for new borrowing, $\dot{D}$, falls over time unitl a steady state is reached.

This steady state of equilibirum is globally stable by virtue of the forces determining new debt accumulation. The stability property does not lead to the emergence of the explosive debt paths. Moreover, in the face of exogenous variations of income, the marginal optimality conditions will imply a stable equilibrium borrowing path

The above optimality condition relates to optimal borrowers' models for one - sector economy which make no differential between foreign and domestic goods. However, models[23] with distinct traded and non-traded sectors emphasise that obtaining optimality in marginal elements would be the necessary but not a sufficient condition, as this would require obtaining equality with movement of the real exchange rate over time. Thus, assuming that both goods may be invested or consumed and that the cost of borrowing (in terms of traded good) rises with the accumulation of debt, the optimal path would be obtained by equating the marginal elements as under.

MPK (in traded good sector) = MCF = SDR = MPK (in non-traded good sector) + the real exchange rate (the rate of change of the relative price of non-traded good).

Within the optimising borrower's framework, there exists a line of approach dealing with the optimality criterion with slight deviation from the line of analysis as discussed in the previous paragraphs. These are the models dealing with individual agents possessing full information about the future.[24] The implicit assumption here is that individual agents can perceive the future course of development in its totality. In this context, the available literature may be divided into two-those which are based on one-sector and those which are two-sector models. The appropriate response to optimal decision making within the purview of one-sector framework involves only the use of each individual's knowledge about his income profile over time. However, in case of models using a two-sector

framework, each individual must act with knowledge not only of his future income profile but also of the future path of the real exchange rate.

The importance of full information to agents in a borrowing economy has been further underlined in models which include a two-sector framework in which the future path of the exchange rate (the relative price of traded and non-traded goods) will also influence the intertemporal consumption decision. The expectation of exchange rate changes makes the real interest rates facing domestic consumers diverge from the world interest rates, thereby changing the rate at which current consumption can be transformed into future consumption. Thus, a shock, which disturbs the relationship between current and (expected) future marginal utilities will, in general, give rise to some additional intertemporal transfer of consumption. Models have dealt with to what extent it is appropriate to postpone or not the adjustment in response to adverse shocks by resorting to foreign borrowing. This has been undertaken based on the assumption that individual agents possess detailed knowledge of both the parameters of the intertemporal utility function and the production technology of the economy, and information as to whether shocks are permanent or temporary, and, if temporary, how long they will last.

Within a two-sector framework,[25] a permanent shock generated by the rise in output of the non-traded good will result in additional debt accumulation to restore balance and to smooth intertemporal consumption. The converse is true in case of a temporary shock.

The similar distinction exists in the effects for permanent or transitory change in terms of trade. In a framework, in which intertemporal utility function is maximised and the imported good is imperfect substitute for the domestically produced good in consumption, debt accumulation will increase if the terms of trade changes are transitory and vice-versa.

Thus, once the role of external borrowing is expanded outside the investment role, the analysis becomes quite complex. While the additional considerations can be dealt with at a theoretical level, it is clearly very difficult, at a practical level, to judge the sustainability or optimality of borrowing policies or debt capacity. Consequently, considerable effort has been channelled into trying to empirically identify circumstances under which countries experience debt - servicing difficulties, using as explanatory variable, a group of external debt - ratios and other economic indicators.

SECTION TWO

This section reviews the empirical approches to analysing the debt capacity. These approaches may be broadly discussed under two sub heads: those which are solely based on policy judgements and hence are subjective in nature, and those which are based on quantitative assessment of debt capacity based on certain chosen proxies.

2.1: Debt Capacity and Policy Judgements.

This subsection deals with indicator approaches based on policy aspects. At the outset, let us briefly outline the prevailing perceptions regarding debt-servicing capacity and economic performance linkage.

The traditionally held view about foreign resources is that these are essential for undettered pursuance of development programmes and any shortage of these will definitely jeopardise the aims of development process. However, for maintaining a continuous flow of these resources, it is essential that external performance of an economy be constantly monitored in relation to the debt path. Viewed in this traditional perspective, the relation between growth in debt and export performance assumes importance and has been a focus of attention in the context of debt capacity issues. However, there exists difference of opinion regarding the debt-capacity indicator as a meaningful way of dealing with sustainability considerations as discussed in theoretical models in section one. It is frequently pointed out that historically situations having high debt-service ratios had been successfully managed, while many countries were in severe servicing difficulties even with low ratios. Thus, there exists no direct link between the allocative efficiency of the economy and the debt service ratio. Nor do the theoretical development-cum-debt models emphasise debt servicing ratio as key variable for analysing the sustainability of policies. It has been contended that these ratios are essentially symp tomatic of the liquidity management process. However, economists are of the

opinion that this liquidity aspect of debt capacity may be a proxy for the quality of domestic economic management which is fundamental to any analysis of the development-cum-debt process. Consequently, this indicator approach has been growing simultaneously with the theoretical literature.

The empirical approaches to evaluating debt-servicing capacity have originated, alongwith the development in the theoretical literature, in the mid-1960s.[26] Here, three categories of variables were stressed as indicating a country's short-term debt-servicing capacity which are as under.

1. Fluctuating variables comprising of exports, capital flows, and internally - induced imports;

2. offsetting variables consisting of reserves, compensatory finance, and compressible imports; and

3. rigid variables including amortization, interest payments, and non-compressible imports.

Of these, exports , amortisation, and interest payments have been considered for deriving the debt-service ratio. This is so, as these three represent a measure of the burden of a country's debt position as well as its vulnerability to external shocks. However, in order to avoid the weaknesses involved in these measures, which are self-explanatory, certain multi-dimensional evaluation procedures have been developed. These include a number of debt indicators as well as indicators of general economic performance. The basic aim for developing these

criteria has been to arrive at certain acceptable objective criteria for rating different countries.

A number of banks, involved in international lending, with an intention of serving the practical purpose of efficient lending have developed checklist systems that consist of a list of quantifiable variables. These variables are of equal importance, in the sense that no weighting pattern is involved on the basis of which countries' creditworthiness is rated.

Along the same time, efforts were also directed towards developing more comprehensive but objective assessment procedure. These resulted into a method involving risk analysis based on a two step exercise.[27] The method involves first the quantification of the maximum possible loss in the context of different varieties of debt-servicing problem that may occur in each of the year after the proposed loan is granted; and then in the second step a detailed analysis of political and economic characteristics of the borrower which helps in the evaluation of the likelihood of the occurrence of debt-crises and the probable time of such occurrence.

However, these criteria based on policy judgements have been supplemented by adequate quantitative techniques.

2.2: Debt Capacity and Econometric Approaches.

The evolution on debt capacity analysis based on policy judgements did not preclude the possibility of the emergence of

literature on debt capacity based on econometric studies. In fact, numerous literature based on econometric analysis about the borrowing practices of developing countries emerged since 1971. Broadly, three issues have been dealt with extensively. These are on rescheduling[28] as a proxy for debt crisis, fixation of credit terms, and the examination of factors influencing amounts borrowed. A number of these are based on neoclassical optimising models, while others are not. As the subject matter of the thesis is issues on debt capacity, this subsection will deal with analysis on debt rescheduling only.

There are no observable quantifiable indicators for debt-servicing capacity or country risk. Hence, the solution adopted in the context of econometric analyses has been to examine identified cases of debt difficulties, usually those involving debt reschedulings.

Since the binary nature of the dependent variable makes conventional regression techniques inappropriate, researchers explored other less familiar techniques, such as, the discriminant[29] analysis, principal component analysis[30], the logit analysis,[31] and the probit analysis.[32]

The first econometric attempt[33] to answer the question: what characteristics of debtors force rescheduling of their debt, was based on the discriminant analysis. The analysis was based on two subpopulations - rescheduling countries and non-rescheduling countries. The rule was chosen so as to minimise the expected costs of misclassification. For the purpose of assessing the

debt capacity eight indicators were considered, of which the best performing classification rule included only two; the debt service ratio and the amortisation - debt ratio. It was concluded that debt service obligations are positively associated with rescheduling, and the probability of rescheduling is negatively associated with the ratio of imports/GDP. The record of error was reasonably impressive - zero Type I errors, and 9 percent Type II errors.[34]

The scope of the discriminant analysis was later on broadened by the inclusion of some indicators of internal short-run macro economic management, the rate of inflation, and the money creation.[35] This inclusion is certainly relevant in so far if the poor economic management lies behind debt crises. This also asserts that adhoc financing is more readily available to countries whose liquidity problems are due to external and internal shocks that are not compounded by poor economic management. Thus, casual evidence presented in this latter analysis indicates that reschedulings are disproportionately concentrated among high-inflation countries. Later the analysis was extended further to include the inflation rate, the growth rate of money, deviations from purchasing power parity, debt-service ratio, and the growth rate of exports.

The discriminant analysis has also been used[36] to analyse the rescheduling decisions by using the five-year cumulative current account balance adjusted for changes in reserves and deflated by exports in the most recent year, as a proxy for debt conditions. The other variables used include liquidity, GDP, and

the domestic demand management. Moreover, the analysis also include a dependent variable adjusted to include six instances of balance of payments support loans and to exclude what were identified as voluntary reschedulings (i.e., not associated with major foreign exchange difficulties).

The next important technique that has been used in econometeric approach is the principal component analysis.[37] This is a technique that has been used to condense the amount of information contained in a set of variables by constructing a new set of variables that contains, in aggregate, a high percentage of the information in the original set but has smaller dimensionality. The analysis suggests two hypotheses: (a) the degree of successful involvement in debt must be suitably in keeping with borrowing conditions; and (b) the growth of debt should be kept in line with that of exports.

The third approach used in the context of the decisions to seek rescheduling is logit analysis.[38] In order to analyse the decision to reschedule certain explanatory variables were considered. These are-the debt-service ratio, a reserve/import ratio, per capita GNP, the debt/amortisation ratio, capital inflow/debt service ratio, imports/GNP ratio, the export growth rate, and an export fluctuations index. In the final analysis, however, the export fluctuations index and the import/GNP ratio were excluded. With a cut-off rate of 40 percent, the in-sample error ratios were 5 percent (approx.)for Type I errors and 2.5 percent for Type II errors. The work was later on continued mainly with the aim of adjusting the scope and definition of the dependent variables.[39]

Besides the above, it was also attempted[40] within the framework of logit analysis to relate the probabilities of default within the succeeding five year to the explanatory variables. The conclusion arrived at is that the stock of debt as a ratio to exports and inflation are positively associated with rescheduling, while the variables that apparently have a negative effect on the probability of rescheduling are investment and ratio of imports to GDP.

Another approach used in this context is the probit analysis.[41] It has been concluded that debt service obligations at the time of rescheduling are the important positive determinant. Besides this, the stock of debt as a ratio to GNP and population also exert positive influence. While capital inflows and investment have negative effect on rescheduling.

However, a number of reasons may be forwarded for exercising caution in the use of rescheduling as a proxy for debt servicing difficulties.

Rescheduling is a biased concept when used as a proxy for debt capacity. Such events only capture the risk associated with loans that have actually been contracted. However, countries exhibiting less prospects in the context of efficient allocation of resources might be the recipient of loans on a meagre scale and hence have little cause to reschedule. In such eventuality, assessment of the debt capacity of a country cannot be attempted on the basis of such rule. Besides this, rescheduling cannot help in obtaining the probable development of risks associated

with borrowings not yet undertaken since a complete specification of rescheduling would involve encompassing those variables which would unexpectedly surface at the time of initial extension of loans. Furthermore, the heterogeneity of rescheduling cases has not been taken care of while grouping the rescheduling cases together for conducting analysis.

Also, it has been opined[42] that the nature of rescheduling decision itself is a primary source of risk in international lending since the former may or may not preserve the present value of outstanding loans. Hence, a grouping of all rescheduling cases irrespective of their impact on market value of outstanding loans, as has been done by all the econometric studies, is likely to yield faulty result. In this direction, a recent theoretical model[43] also lends support by contending that rescheduling can, in principle, be of two types, one that is advantageous to the lenders, and the other to the borrowers; and the recent experiences suggest that both have occurred. And hence a grouping of the cases such as those attempted are not free from flaws.

The literature reviewed in the preceding sections highlight two basic issues on external borrowings: issues on sustainability or optimality of the borrowing and empirical evaluation of debt servicing capacity. We shall concentrate on choice regarding the former aspect first. The latter aspect will be dealt with subsequently.

Let us begin with assessing the set of literature on static models of analysis dealt with in subsection 1.1. These are based on Harrod - Domar framework of analysis characterised by well-defined and unchanged relationships among certain structural parameters: output growth rate, capital-output ratio, and marginal propensity to save. Of these, output growth rate is exogenous to the process. This, alongwith a fixed capital-output ratio, determines the required investment rate. Marginal propensity to save is assumed to be constant and savings and investments are not behaviourally related. Based on the above, the net capital inflow from abroad may be worked out. However, the estimates of net and gross borrowings and hence net indebtedness depend on relationship between the output growth rate and the interest cost of borrowings. Within this framework thus the crucial factor becomes one of choosing appropriate relationship between output growth rate and interest cost of borrowings.

However, when Harrod - Domar framework is perceived from the point of view of development process, partly financed by external resources, certain inherent limitations must be taken into consideration. Firstly, the inadequacies involved in the analysis of debt capacity. Secondly, as we have noted elsewhere, Harrod-Domar framework suffers from extreme rigidity resulting from the constant marginal propensity to save and constant capital-output ratio. This precludes any possibility of incorporating changes in technological and behavioural relationships which are likely to occur while a country traverses along the development process. Besides this, in the context of a developing economy like India,

the framework lacks applicability since it does not take into consideration the institutional factors involved and which assume vital significance in analysing debt servicing capacity.

Let us now turn to multi-period dynamic models as discussed in subsection 1.2. The non-optimising multi-period models of foreign borrowings view the accumulation of net foreign debt as the result of intertemporal choices determining savings and investment behaviour. These assume that borrowing in each period depends on technological and behavioural relationships with rigid structural parameters. The magnitudes of these parameters, therefore, are crucial determinants of the sustainability of debt paths. Hence, choosing the appropriate parameter values, particularly for savings, investment and output growth rates, is a prerequisite in ensuring a configuration that generates feasible debt paths.

However, the major limitation, in such models involved, is decision making regarding structural parameters. Besides this, there exists problem in ensuring a debt path which is not explosive. In such a framework, the boundedness in the time path of debt/output ratio depends essentially on the specification of consumption behaviour which adds to the existing restrictions.

The optimising models are also based on the same view of the accumulation of net foreign debt like non-optimising models as discussed above. However, these models depict economies as progressing towards a stable equilibrium characterised by equality between the marginal productivity of capital, social

discount rate and marginal cost of foreign borrowings. These models conclude that debt problems occur due to non-optimising behaviour. But these suboptimal paths are not necessarily a prelude to a crisis. These are thus essentially concerned with value judgements and hence concentrate on welfare analysis of external borrowings.

Keeping in mind the macro economic characteristics of the Indian economy and the existing important views on external borrowing, let us now make a choice of the framework in the light of the issues proposed to be discussed in the context of India's external commercial borrowings. The issues are as under,

1. The sustainability of debt capacity, when resource gap is obtained using historic trends in important macro variables.
2. The sustainability of debt capacity, with a greater domestic effort to reduce the resource gap and when the average conditions of external commercial borrowings are maintained at levels witnessed in recent years.
3. The sustainability of debt capacity under the assumptions that the same framework for projection of resource gap, as in (2) above, is mainained but the debt obligations worsen in future as a result of larger proportion of commercial borrowings in total debt as well as worsening in the term structure of the commercial borrowings..

Viewed within the context of the above requirements for analysis, the choice in favour of the optimising borrowers' models may at once be turned down on two grounds. First, the

analysis is being centered on the issue of debt management. Further, these models require ensuring equality between economic characteristics at the margin. Establishing such an equality within the context of a present day economic system is highly questionable.Thus, we arrive at the conclusion that debt problems occur due to non-optimising behaviour of a borrower and a suboptimal condition eventually leads the economy towards a crisis.

The preceeding analysis justifies a case for choosing multi-period non-optimising borrower framework as an appropriate one. However, as we have enunciated elsewhere (in chapter three), in the Indian context consumption aspect in relation to foreign borrowing does not bear any major significance. Hence, we have made a choice against such a framework as it incorporates, needlessly, additional restriction within the process. This leads to a preferrence for a static non-optimising framework based on the Harrod - Domar model. However, for the purpose of our present thesis, we have incorporated a little deviation into the framework. Instead of treating marginal propensity to save as a constant proportion of increase in GDP in the current year, we have assumed it as an increasing function of the increase in GDP in the current year. Moreover, average savings ratio is assumed to be a function of the preceeding year's GDP.

Besides the above choice regarding the analytical framework, we have also made choice regarding empirical evaluation of debt capacity. The approach chosen is one of policy judgement based analysis of debt servicing capacity. Thus, a set of debt service

ratios would be used. The reasons for deciding against the econometric method based quantitative analysis are two-fold.

The first relates to conceptual probelm. These econometric analyses are based on the use of rescheduling as a proxy for debt-servicing problem. The use of rescheduling in the Indian context is subject to questions. However, assuming that the concept of rescheduling is theoretically sound in the Indian context we face another problem. Since the present exercise is related to projections on net commercial debt and debt servicing capacity, it would be necessary to analyse future cases of reschedulings. However, as has been discussed earlier in section 2.2., analysis of rescheduling cannot help in obtaining the probable development of risks associated with borrowings not yet undertaken. To the extent that debt servicing capacity vis-a-vis those loans already undertaken is concerned, econometric analysis based on rescheduling is possible.

Besides the problem of obtaining the probabilities of default, there exists doubt about the practical applicability of the concept. The past record tells us that India did not opt for rescheduling, and has prudently been managing her debt-servicing obligations. Despite the recent fall in the international creditworthiness ratings, it is least expected that India would decide to reschedule in so far as the international debt obligations are concerned. Hence, an attempt to concentrate only on policy judgement based indicators of debt-servicing capacity without adequate quantitative analysis does not constitute a limitation of the present study.

NOTES

1. See Salop, J. and Spitaller, E. (1980): Why Does Current Account Matter? IMF Staff Papers, Vol. 27 (March).

2. See Avramovic, D., et.al (1964): Economic Growth and External Debt., John Hopkins Press.

3. See King, B.B. (1968): "Notes on Mechanics of Growth and Debt", WB Staff Occasional Papers, No.6.

   Nowzad, B. & R.C. Williams (1981): "External Indebtedness of Developing Countries", Occasional Paper, No.3 IMF.

   Simonsen, M.H. (1985): "The Developing Country Debt Problem", in G.W. Smith and J.T. Cuddington (eds), International Debt and the Developing Countries, A World Bank Symposium (IBRD).

   Kharas, H. J. (1984): "Longrun creditworthiness of Developing Countries: Theory and Practice", Quarterly Journal of Economics, pp. 415-39.

4. A young debtor broadly implies one who receives net inflow of resources and for whom both net as well as gross inflows are rising.

5. A mature creditor emphasises a nation which provides resources to the developing countries requiring them.

6. See Op.cit Avramovic, D. et.al.(1964).

   Bardhan, P.K. (1967): "Optimal Foreign Borrowing" in K. Shell (ed), Essays on the Theory of Optimal Economic Growth (M.I.T. Press, Cambridge, Mass).

7. See Op.cit Simonsen, M.H.(1985).

   See Op.cit Kharas, H.J.(1984).

8. Glick, R, and H.J. Kharas (1985-86): "The Costs and Benefits of Foreign Borrowing", Journal of Development Studies, Vol.22. pp.279-299.

9. Steady state level from a borrower's point of view, in a non-optimising model, implies that the debt/output time path converges to a finite level. Bazdarich, however, demonstrates that a borrower who optimises will always remain a net debtor. Glick, R. and H.J. Kharas (1985-86). p.297.

See Bazdarich, M. (1978): "Optimal Growth and Stages in the Balance of Payments", Journal of International Economics, pp. 425-43.

10. See Bade, R. (1972): "Optimal Growth and Foreign Borrowing with Restricted Mobility of Foreign Capital", International Economic Review, pp.544-52.

Op.cit, Bardhan, P.K. (1967).

Op.cit, Bazdarich, M. (1978).

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Eaton,J. & M.Gersovitz (1981) "Debt with Potential Repudiation: Theoretical and Empirical Analysis", Review of Economic Studies pp. 289-309.

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McCabe, J. & D.S. Sibley (1976): "Optimal Foreign Debt Accumulation with Export Revenue Uncertainty",

International Economic Review, pp.675-86.

Pitchford, J. (1970): "Foreign Investment and the National Advantage in a Dynamic Context", in J. MacDougal and R. Snape (eds.), Studies in International Economics, (Amsterdam, N.H.).

Sachs, J. (1984): "Theoretical Issues in International Borrowings", Princeton Studies in International Finance, No.54.

..... & Cohen,D.(1982): "LDC Borrowing with Default Risk", NBER Working Paper No.925.

Van Wijnbergen,S.(1985): "Optimal Capital Accumulation Allocation of Investment between Traded and Non-Traded Sectors in Oil Producing Countries", Scandinavian Journal of Economics, pp. 89-101.

11. Domar (1944) first defined an unsustainable debt level in terms of the tax rate that would be required to service national domestic debt. He showed that a necessary condition for this rate to be bounded is that d should be bounded. Op.cit Glick, R. and H.J. Kharas (1985-86), p.297.

12. Op.cit., Glick, R. and H.J. Kharas (1985-86), p.287.

13. See Fischer, S.and J.Frenkel (1974): "Economic Growth and Stages of the Balance of Payments", in G. Horwich and P. Samuelson (eds.), Trade, Stability, and Macro Economics (NY, AP).

Onitsuka, Y. (1974): "International Capital Movements and the Patterns of Economic Growth", American Economic Review, pp. 24-36.

14. Solomon, R. (1977): "A Perspective on the Debt of Developing Countries", Brookings Papers on Economic Activity, No.2.

15. The rational lender's intertemporal budget constraint implies that the expected present value of net resource flows to the borrower over time should be zero.

16. See Griffin, K. (1978): International Inequality and National Poverty, London, Macmillan.

17. See, Op.cit., Kharas. H. J. (1984).

Takagi, Y.(1981): "Aid and Debt Problems in Less Developed Countries", Oxford Economic Papers, pp.323-37.

18. See, Op.cit., Kharas, H. J. (1984).

19. See, Op.cit., Bade, R. (1972)
Op.cit., Bardhan, P.K. (1967).
Op.cit., Hamada, K. (1966) and (1969).
Op.cit., Pitchford, J. (1970).

20. Social discount rate is defined as the pure rate of time perference less the rate of change in the marginal utility of consumtpion.

See Op.cit., Glick, R. and H.J. Kharas (1985-86).

21. Hanson (1974), examines the properties only of the steady state, not the optimal path towards it.

See, Hanson, J.A. (1974): "International Loans, Direct Foreign Investment and Optimal Capital Accumulation", Economic Record, pp.320-25.

22. See, Op.cit, Pitchford, J. (1970).

23. See,Op.cit, Bruno,M. (1976).

See,Op.cit, Dourbusch, R. (1983).

24. See, ibid , Dornbusch, R. (1983).

25. See, ibid, Dornbusch, R. (1983).

26. See, Op.cit, Avramovic, D. et.al.(1964).

27. A system developed by Bank of Montreal, Canada.

28. Rescheduling implies,

a) The postponement of all or part of one or more maturities of one or more loans; the creditor and the debtor remaining unchanged;

b) a general term for the outcome of discussions on debt reorganisation for a borrowing country.

29. Discriminant analysis works under the assumption that if in the total population there exist distinct sub populations, and the objective is to construct from sample information, then discriminant analysis provides a rule that will enable

one to distinguish between these sub populations.

30. Principal component is a technique used to condense the amount of information contained in a set of variables by constructing a new set of variables that contains, in aggregate, a high percentage of the information in the original set but has smaller dimensionality.

31. Logit analysis is a framework for analysing choice among discontinuous alternatives, and its output is the relation of selection probabilities to the factors that influence choice. Specifically, it is designed to relate choice probabilitis to a model of behaviour and to the underlying attributes of the alternatives and the decision maker.

32. In case variables to be dealt with are characterised by quantal responses, the probit analysis is used. In the quantal response (all or nothing) category are dichotomous, qualitative and categorical outcomes, and the method of analysis identified as probit is appropriate for these variables.

33. See, Frank, C.R., Jr.and W.R. Cline (1971): "Measurement of Debt-Servicing Capacity: An Application of Discriminant Analysis," Journal of International Economics pp.327-44.

34. Type I errors occur when a rescheduling country is classified as a non-rescheduling country. Type II occurs in reverse case.

35. See, Sargen, N. (1977): "Economic Indicators and Country Risk Appraisal", Federal Reserve Bank of San Francisco, Economic Review, pp.19-35.

36. See, Saini,K. and Bates, P.(1978): "Statistical Techniques for Determining Debt Servicing Capacity for Developing Countries: Analytical Review of the Literature and further Empirical Results", Federal Reserve Bank of NY, Research Paper No. 7818.

37. See Dhonte, P.(1975): "Describing External Debt Situations: A Role - over Approach", IMF Staff Papers, 22, pp.159-186.

38. See, Feder, G. and R.E. Just (1977): "A Study of Debt - Servicing Capacity Applying Logit Analysis", Journal of Development Economics, 4, pp.25-38.

39. See, Feder,G.; R.E. Just, and K. Ross, (1981): "Projecting Debt Servicing Capacity of Developing Countries,"Journal of Financial and Quantitative Analysis,pp.651-69.

40. See, Op.cit, Saini, K. and Bates, P.(1978).

Mayo,A.L. and Barrett, A.G.:"An Early - Warning Model (1978) for Assessing Developing - Country Risk", in S.H. Goodman (ed), Financing Risk in Developing Countries, pp.81-87.

41. See, Op.cit, Kharas, H. J. (1984).

Thomas,S.and Shane,M.D. (1984): "Creditworthiness of major Latin American Debtors: An Analysis of Proposals to Defer Interest Payments".Mimeo.

42. See, Eaton, J. and M. Gersovitz (1981 b): "Poor Country Borrowing and the Repudiation Issue", Princeton Studies in International Finance, No.4.

43. Ozler, Z.(1984): Rescheduling of Sovereign Government Back Debt (Deptt. of Economics Stanford Univ).

CHAPTER TWO

INDIA'S EXTERNAL DEBT: TRENDS AND STRUCTURE

The period since mid-70s has witnessed an unprecedented expansion in the transactions of foreign commercial resources. The major participants in this process are the non-oil producing developing countries and the commercial banks. The latter, however, helped, initially,in recycling the current account surpluses of the oil exporters. In the wake of the oil crunch of mid-70s and thereafter, there has been demand for massive capital inflow by these non-oil producing developing countries from abroad. The major channels through which this inflow has been transferred are governments in the concerned economies, which either borrow on their own account or guarantee loans availed of by the private parties.

The purposes underlying borrowing from international market by the developing economies are two-fold. Borrowing may be purported to finance the accumulation of physical capital or other assets. Alternatively or simultaneously, a country may borrow to smooth its domestic consumption levels in relation to the time pattern of the income. The emergence of external borrowing on a very large scale, such as the one witnessed since first oil shock, has been the resultant of both the objectives. The consequent rapid rise in the external debt obligations has given rise to concern about the dangers involved both for the debtors and also for the fabric of the international financial system. Questions arise as to the feasibility of contracting such continually rising debt obligations.

Viewed in this context, external indebtedness has to be analysed from two different but closely associated perspectives. On the one hand, it involves understanding the relationship between development and in the way different countries financed the increase in debt servicing burden in the 1980s. This is important because it may spell out the form of debt management to be required in the 1990s and thereafter. Specifically, the mechanism of resource mobilisation for financing the net transfers to lenders may reveal the dynamics of development process in debtor countries.

Moreover, external debt has another dimension. Debt is worthwhile only if payment profile of the source of finance be symmetrical with the cash flow profile of the investment for which borrowing is made. This requires generation of surplus larger than the cost of debt as well as the convertibility of the former into foreign exchange in order to service the debt. Thus, utilisation of external borrowings must lead to saving on imports and/or growth of exports at least equal to the debt service. What is, therefore, necessary is to minimise the growth of external debt by improving the current account balance and by increasing domestic savings. This necessitates the evaluation of the mode of utilisation of these resources at micro level vis-a-vis the trend witnessed in overall development for these non-oil producing economies.

Though India belongs to the group of non-oil producing developing economies, her scale of external borrowing did not undergo diametric change during the period immediately following

the first oil shock. The economy could adjust to the first oil shock somewhat easily and quickly without resorting to much of commercial borrowings. The situation, however, worsened since 1979 as it was rather difficult for her to adjust to second oil shock. Eventually, India emerged as a significant entrant in the field of external borrowings and specifically in international capital markets in the 1980s. The outcome was inescapable, since the only feasible alternative to this would have been to jeopardise her development programmes. This is apparent from the table 2.1 given below.

Table 2.1:
Domestic Saving, Foreign Resources and Total Resources
(at current market price)

Years	Domestic Saving as a% of GDP	Net Inflow of Foreign Resource as a % of GDP	Total Resource as a % of GDP
(1)	(2)	(3)	(4) = (2)+(3)
1985-86	22.0	2.4	24.4
1986-87	21.8	2.2	24.0
1987-88*	21.1	2.4	23.5
1988-89**	21.0	2.9	23.9
1989-90	N.A.	N.A	N.A
1985-86 to 1988-89	21.5	2.5	23.9

* : Provisional
** : Preliminary estimate

Source: RBI Annual Reports, various issues.

While the total investment as a ratio of GDP at current market prices had been around 24 percent in the period 1986-89, aggregate domestic saving was 22 percent in the same period. Thus, the higher rate of investment had been sustained by a larger inflow of resources from abroad. This is inevitable in view of the fact that India cannot do without the inflow of

external resources the root of which could be traced back in the macro economic characteristics of the Indian economy.

In this context, an exercise leading to the overall assessment of the impact of policies pursued and anticipating the needed evolution in the context of such policies seems meaningful. This would be useful for proper monitoring of the economy under the assumption that country would be borrowing on an increasing scale for a period stretching over a fairly large time horizon.

The chapter has been formalised along the following lines. Section one discusses the trends of external debt of India. In the next section, a comparison is made between India's external indebtedness vis-a-vis certain selected developing countries. The third section provides evolution in the structure of external borrowings concentrating solely on the evolution in terms and conditions of external commercial borrowings. Finally, section four presents a framework that provides useful measures of solvency[1] and liquidity[2] aspects of debt burden. The following measures have been preferred to evaluate the debt burdens: debt to GNP, debt to exports, interest adjusted amortization payments to GNP and interest adjusted amortization payments to exports. A qualitative discussion of the behaviour of real interest rates, nominal effective interest-cost etc, is also provided.

It may be mentioned at the outset that it is not the aim here at explaining the genesis of international indebtedness or at appraising its consequences. Rather an attempt will be made

at analysing the trend witnessed during the period 1976-77 to 1987-88. Detailed tables containing historical data and illustrative parameter estimates are provided partly within the text and partly in the appendix.

SECTION ONE

External debt has three main elements[3]:

1) Long-term debt, comprising of public and publicly guaranteed debts and private non-guaranteed debts;

2) I.M.F. credit; and

3) Short-term credit.

Following the same line, India's total external debt may be divided into four main components:

(i) external assistance, comprising of both multilateral[4] and bilateral[5] sources; of which the former comprises of concessional[6] and non-concessional forms while the latter is only of nonconcessional form;

(ii) commercial borrowings[7];

(iii)other short-term borrowings; and

(iv) deposits in India by non-resident Indians.

In addition to the above, there are credits which arise in the normal course of trade and get liquidated within a year. There are also credits obtained for purchase of defence equipment mainly from East European block. However, for our present purpose, we have excluded the following elements from our definition of external debt.

(a) bank liabilities which are trade related and, therefore, self-liquidating;

(b) defence credits from East Europe which are assumed to be offset by India's trade surpluses with these countries;

(c) non-resident deposit which are unlikely to be withdrawn and transferred abroad; and

(d) other short-term borrowings.

As mentioned earlier, the 1980s ushered in a new era in India's international borrowings in general, and external commercial borrowings in particular. The developments at the start of the decade highlighted the vulnerability of the Indian economy which was till then showing sufficient immunity towards exogenous shocks. This was reflected in increasing recourse to borrowings in the international markets on commercial terms[8]. During the period 1980-88, when India's debt increased nearly four-fold, there was a shift in the sources of financing vis-a-vis the experience of the 1970s. In the 1970s, the country resorted more to the conventional concessional borrowings due mainly to the fact that concessional sources were mostly composed of untied aid which could be used for general purpose requirement. However, 1980s witnessed a declining share of untied aid in concessional source simultaneously with the growth in non-project requirements in the borrowing economy. This, coupled with a shrink in India's share in sources of soft loans due to new entrants like, China, in the international market led to the emergence of India's commercial borrowings on a significant scale in the 1980s, and more specifically, since the initiation of the sixth five-year plan when the planners embarked

on higher recourse to borrowings on commercial terms. This is evident from the following table 2.2.

Table 2.2:
Inflow of Foreign Resources and External Commercial Borrowings
(Rs. Crores)

Plan Period	Foreign Resource Flow	External Commercial Borrowings	(3) as % of (2)
(1)	(2)	(3)	(4)
Fourth	1086	16	1.5
Fifth	-2897	-31	1.1
Sixth	14134	3102	21.9
Seventh [1985-1988]	18050	5105	28.3

Note:- Negative sign indicates outflow of resources.

Source:-1. R.B.I. Bulletin, various issues.
2. R.B.I. FCL returns.

During 1970s, the net inflow of resources from abroad was mainly under external assistance programme, i.e., loans and grants received by the government and loans by the private sector under government guarantee. This scenario changed substantially in 1980s; while the share of external assistance in total inflow of foreign resources remained stagnant around 69 percent between 1980-81 to 1987-88, the share of commercial borrowings went up from 19 percent in 1980-81 to 30.41 percent in 1987-88.

The quantum jump in the external commercial borrowings during the sixth plan continued unabated during the seventh plan period also. This trend is anticipated to continue in the coming decades and thereafter. Such phenomenal growth could be attributed to varying reasons. But the one which surfaces maximum is obviously the cut down in India's share in concessional loans, both bilateral as well as multilateral , in

view of the policy stances in developed economies, especially the USA. Consequently, the government could not escape resorting to the feasible alternative, i.e., raising of external commercial loans.

Table 2.3 (showing approvals) gives a clear idea about the increasing reliance that has been placed on external commercial borrowings in the present decade.

Table 2.3:
Approval Extended For External Commercial Borrowings
(Rs. Crores)

Years	Amount Approved
(1)	(2)
1976 - 80	NA
1980 - 81	1086
1981 - 82	1094
1982 - 83	1856
1983 - 84	981
1984 - 85	2770
1985 - 86	1583
1986 - 87	3937
1987 - 88	4571

Note:- Approvals include IBRD loans to the private sector and KFW (West German) loans to the institutions like IFCI, NSIC and ICICI even though they form a part of the external assistance.

Source: FCL-I returns, RBI.

Data indicate overall increasing trend in seeking approval for borrowing on commercial terms. This is a significant indicator towards an increasing volume of loans drawn since the gestation lag mechanism of concessional loans, between

authorisation and utilisation, in not effective in the context of commercial loans.

Total external debt as conceptualised in this chapter, has increased due to growing magnitudes of concessional as well as commercial loans. This was mainly necessitated by the size of the sixth and seventh plan as well as the investment growth rates postulated therein. The undertone of India's plan formulation has been that imports be financed in normal course not through exceptional financing such as drawing down foreign exchange reserves. Rather a symmetry be maintained between the repayment profile of any source of finance with the cash flow profile of the investment for which borrowing is made. Since most industrial projects undertaken through the use of external financing have a reasonably long gestation period, it is important that these should not be financed by drawing down exceptional financing source. Given this kind of framework, external borrowings assume importance in India's development process and consequently the international indebtedness has been growing in size and pace. **Table 2.4** presents a detailed picture of India's external debt.

Table 2.4 shows India's international indebtedness, its level and its growth, reflecting the cumulative resources gap and changes therein over time.

It is apparent from the table (2.4) that the total external debt of India has maintained an accelerating pace over the years. Its growth has been characterised by very insignificant annual

percentage change during the initial four years followed by a quantum jump thereafter. The component, except IMF borrowings, has also followed suit. The magnitude of IMF borrowings fluctuated over the years due mainly to the nature of such borrowings.

Table 2.4:

India's Total External Debt

(Rs. Crores)

Years (As at End-March)	External Assistance	I.M.F. Loans	External* Commercial Borrowings	Total Externl Debt (2+3+4)
(1)	(2)	(3)	(4)	(5)
1977	11,023	494	1,274(9.96)	12,791(-)
1978	11,453	211	1,177(9.17)	12,841(0.39)
1979	11,618	NIL	1,138(8.92)	12,756(-0.66)
1980	12,178	NIL	1,252(9.32)	13,430(5.28)
1981	13,479	268	1,315(8.73)	15,062(12.15)
1982	15,445	901	2,240(12.05)	18,586(23.40)
1983	17,577	2,867	3,043(12.96)	23,487(26.37)
1984	20,214	4,444	3,843(13.48)	28,501(21.35)
1985	24,004	4,888	6,908(19.30)	35,800(25.61)
1986	26,638	5,271	8,075(20.20)	39,984(11.69)
1987	32,312	5,548	11,243(22.90)	49,103(22.81)
1988	36,578	4,732	13,543(24.69)	54,853(11.71)
1989(P)	46,838	3,696	19,147(27.48)	69,681(27.03)

Notes: Figures in brackets in column (4) indicate external commercial borrowings as a percentage of total external debt; while figures in brackets in column (5) indicate annual percentage growth in external debt.
P = Provisional * Includes non-government loans under external assistance programme.

Source: 1)Annual Report, RBI,1988-89.
2) Economic Survey 1988-89.
3) Survey of India's International Investment Position, RBI Bulletin, April 1985.

However, while the magnitude of external assistance grew at a moderate pace the annual growth rate in commercial borrowings had witnessed two distinct phases - the first phase, during the initial years, when it grew at a compound rate of approximately, 1 percent. This surpassed the compound growth rate in aid flow by more than 2½ times during the second phase covering the 1980s.

This was, however, inevitable under the influence of two factors, as discussed earlier, the growing need for free foreign exchange under the influence of increase in non-project expenditure, and a squeeze in India's share in official sources.

Let us now examine the gross and net transfer of various components of external resources into India, as well as quantum of debt-servicing over the twelve years period from 1976-77 to 1987-88 (table 2.5).

Table 2.5:

India's External Indebtedness: Gross, Net Inflows and Debt-Servicing

(Rs. Crores)

Years	Gross Inflow$		Amortisation		Net Inflow		Debt-Servicing@	
	Total	External Commercial Borrowings	Total	External Commercial Borrowings	Total	External Commercial Borrowing	Total	External Commercial Borrowings
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1976-77	1498	213	362	153	919	30	579	183
1977-78	1097	89	481	177	349	-152	748	241
1978-79	1056	114	464	238	324	-174	732	288
1979-80	1212	163	535	155	397	- 34	815	197
1980-81	1799	340	699	193	822	121	981	223
1981-82	2623	467	654	227	1618	165	1015	312
1982-83	4733	1065	697	211	3406	544	1332	526
1983-84	4377	1096	882	269	2627	328	1752	770
1984-85	3642	1472	1060	362	1269	267	2373	1205
1985-86	4308	1827	1718	660	1218	339	3090	1488
1986-87*	6171	3115	3195	603	1443	1751	4728	1364
1987-88*	6400	1946	3398	680	1053	298	5347	1648

Notes: @ Amortisation plus interest payments [where interest payments include interest on foreign loans and credits]

* Excluding prepayments

$ Gross inflow comprising of (i) External Assistance; (ii) IMF drawings excluding IMF trust fund; (iii) External commercial borrowings excluding loans on Non Govt. Account.

Net Inflow = Gross Utilisation - Total Debt service.

Source: 1. Materials collected for articles on "India's International Investment position.
2. Reserve Bank of India, FCL returns.
3. Economic survey, Government of India.

The available data reveal that total gross inflow which grew at a decelerating pace till the second oil shock, took a sharp turn around and thereafter continued the same pace and direction except for the year 1984-85. Total net inflow also exhibited the same trend. However, though gross inflow of commercial resources moved alongwith the main stream, net inflow showed a different pattern, when it witnessed negative growth rate till 1979 and, thereafter, grew positively but at differing pace. The negative pace in the net transfer of commercial resources into the economy in the initial years (1976-77 to 1979-80) was on account of a larger outflow due to amortisation on suppliers' credits when the latter accounted for 41 percent, on an average, of total amortisation of external commercial borrowings over 1976-77 to 1979-80. Moreover, this was also the phase during which the magnitude of gross inflow under external commercial resources was not very high on account of heavy reliance on external assistance. However, the positive trend witnessed in the 1980s was mainly on account of large borrowings on buyers' credits and credits contracted by financial institutions. The pace in net transfer in the 1980s differed due to the growing size of interest burden. Let us now turn to the management of capital inflows over the period under consideration. The purpose here is analyse the composition of capital inflows and debt.

Composition issue involves, discussion on,

i) proportion of debt contracted at fixed rates vis-a-vis those at floating rates;

ii) the maturity structure of the debt; and

iii) the currency composition of borrowing.

The present section deals with the third aspect of composition of commercial borrowings; while the first two aspects will be dealt with at length in section three.

The evolution in currency composition of external commercial loans, at outstanding level and of drawal and repayments has been analysed in detail. Table 2.6 shows the currency composition of outstanding level of commercial loans.

Table 2.6:

India's External Commercial Borrowings: Currency Composition of Outstanding

(In percent)

Years (As at End-March)	U.S. Dollar	Pound Sterling	Deutsche Mark	French Franc	Japanese Yen	Italian Lira	Indian Rupees	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1980	40.7	2.7	22.3	0.5	22.0	NEG	0.8	11.0	100.0
1981	81.7	1.1	11.1	-	0.2	0.3	5.3	0.3	100.0
1982	79.6	2.7	7.0	NEG	3.4	0.2	3.2	3.9	100.0
1983	69.1	3.0	9.2	1.1	7.9	0.1	2.0	7.6	100.0
1984	70.7	2.4	8.5	1.6	8.3	NEG	1.8	6.7	100.0
1985	73.4	1.8	8.6	1.2	7.9	NEG	1.2	5.9	100.0
1986	63.3	3.1	10.6	1.5	12.7	NEG	0.9	7.9	100.0
1987	60.9	3.4	11.3	1.0	13.0	NEG	0.5	9.9	100.0
1988	54.3	3.9	14.5	0.9	16.0	NEG	0.4	9.8	100.0

Source: Reserve Bank of India, FCL returns.

Commercial loans have been mostly repaid in foreign currencies except a very insignificant portion of such loans contracted in rupee currency from East European block (mainly through suppliers' credits).

Table 2.7:
India's External Commercial Borrowings: Currency Composition of Repayment
(In Percent)

Years	U.S. Dollar	Pound Sterling	Deutsche Mark	French Franc	Japanese Yen	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1976-77	29.9	14.2	6.9	1.9	3.7	43.4	100.0
1977-78	37.5	12.9	7.2	3.9	1.1	37.4	100.0
1978-79	35.0	11.7	6.7	4.1	1.1	41.4	100.0
1979-80	28.5	15.0	14.4	9.0	1.9	31.2	100.0
1980-81	74.9	0.3	9.6	4.3	-	10.9	100.0
1981-82	78.4	6.2	5.0	1.0	1.1	8.3	100.0
1982=83	71.6	5.4	5.3	4.8	5.5	7.4	100.0
1983-84	71.3	4.5	4.4	4.3	8.0	7.5	100.0
1984-85	77.2	2.2	4.2	4.0	6.3	6.1	100.0
1985-86	64.6	1.6	11.4	3.9	18.3	0.2	100.0
1986-87	79.8	2.2	3.4	3.6	6.5	4.5	100.0
1987-88	62.6	1.9	6.4	1.6	7.9	19.6	100.0

Note:- 1. Excluding repayment of non-government account loans; 2. From 1980-81 to 1983-84, currency-wise distribution has been arrived at using payment particulars, while for 1984 - 88, outstanding particulars have been used.

Source:- 1. Materials collected for articles on "India's International Investment Position".
2. Reserve Bank of India, FCL returns.

Let us now look into the currency composition of drawal (table 2.8). The currency composition broadly shows a close association with the international exchange rate movements. In general, borrowings have been contracted in hard currencies, of which US dollar accounts for the major share over the period under consideration. This was mainly due to availability of dollar denominated loans vis-a-vis loans denominated in other currencies and partly because dollar was consistently depreciating. Barring this, the composition in other currencies has varied depending on their strength in the international markets as well as on Indian borrowers' ability to penetrate into various capital markets. Moreover, facilities such as currency swap, etc. have also played a major role.

Table 2.8:
India's External Commercial Borrowings: Currency Composition of Drawals
(In Percent)

Years	U.S. Dollar	Pound Sterling	Deutsche Mark	French Franc	Japanese Yen	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1976-77	34.6	13.4	5.1	16.7	0.5	29.7	100.0
1977-78	31.4	18.2	8.2	7.2	0.7	34.3	100.0
1978-79	34.0	4.0	7.7	4.8	1.3	48.2	100.0
1979-80	65.9	8.6	5.7	3.7	1.3	14.8	100.0
1980-81	96.6	3.2	0.1	-	-	0.1	100.0
1981-82	61.9	9.6	0.5	0.6	12.2	14.2	100.0
1982-83	58.2	5.3	3.7	3.2	15.9	13.7	100.0
1983-84	71.5	1.8	6.6	4.0	9.9	6.2	100.0
1984-85	70.2	2.7	3.2	1.9	12.7	9.3	100.0
1985-86	47.1	7.2	13.9	1.8	20.7	9.8	100.0
1986-87	57.6	2.9	9.8	1.0	11.3	17.7	100.0
1987-88	48.4	1.3	23.8	0.3	20.8	5.4	100.0

Note:- Drawal is exclusive of loans on Non-government account

Source: 1. Materials collected for articles on "India's International Investment Position".
2. Reserve Bank of India, FCL returns.

The diversification in the sources of borrowing by currency as has been witnessed over the period under study assumes special significance. Inspite of the levels of borrowing, India had to contract, during late 1970s and 1980s the costs of borrowing remained reasonably tolerable. Various factors contributed in this exercise of maintaining the debt-service burden within manageable limits in so far as India never defaulted in servicing debt obligations. However the most crucial factor had been the currency wise blend that had been maintained over the period. The currency diversification served two broad purposes: minimised the variability of debt service obligations as well as the cost of borrowings. The trend implicit in the currency blend was one in line with the currency wise pattern of India's trade, especially exports. Thus the country borrowed in the currencies

she earned through exporting. The rationale behind this is that with the appreciation in the currency of an export market, the borrower's terms of trade are likely to improve, thereby nullifying the higher costs of servicing debt in that currency, at least partially.

Now let us look into the sectorwise composition of external commercial borrowings (table 2.9).

Table 2.9:
India's External Commercial Borrowings: Sectorwise Composition of Outstanding, Drawal and Repayment
(In percent)

Years	Drawal			Repayment			Outstanding		
	Public	Other than public	Total	Public	Other than public	Total	Public	Other than public	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1976-77	61.2	38.8	100.0	58.8	41.2	100.0	NA	NA	NA
1977-78	59.3	40.7	100.0	59.1	40.9	100.0	NA	NA	NA
1978-79	45.2	54.8	100.0	67.0	33.0	100.0	34.1	65.9	100.0
1979-80	55.7	44.3	100.0	56.9	43.1	100.0	45.3	54.7	100.0
1980-81	76.5	23.5	100.0	NA	NA	NA	59.0	41.0	100.0
1981-82	47.1	52.9	100.0	NA	NA	NA	56.1	43.9	100.0
1982-83	75.4	24.6	100.0	NA	NA	NA	66.5	33.5	100.0
1983-84	70.7	29.3	100.0	NA	NA	NA	68.8	31.2	100.0
1984-85	78.9	21.1	100.0	54.0	46.0	100.0	74.7	25.3	100.0
1985-86	66.5	33.5	100.0	54.6	45.4	100.0	73.8	26.2	100.0
1986-87	82.9	17.1	100.0	80.4	19.6	100.0	76.9	23.1	100.0
1987-88	61.6	38.4	100.0	NA	NA	NA	76.1	23.9	100.0

Notes:-1. Other than public sector includes - private, joint, cooperative and other entries for which sectoral identification was not possible.
2. Outstanding figure includes loans by IBRD to the private sector and KFW loans to IFCI, ICICI and NSIC, which are not included in drawal and repayments.
3. Outstanding figures relate to the end-March position of the respective fiscal year.

Source: 1. Materials collected for articles on "India's International Investment Position ".
2. Reserve Blank of India, FCL returns.

Sectorwise composition reveals that public sector has been the major borrower in the international financial markets. Over the years, 1976-77 to 1987-88, public sector has maintained its upperhand in accounting for major share of external commercial

resources. This has to be viewed in the context that larger recourse to commercial borrowings was a policy decision by the government. Moreover, under the prevalent foreign exchange control system, any borrower, whether public or private, has to seek prior approval from the government in order to contract foreign borrowings. Within this framework, a larger share of the public sector evidently, appears to be in consonance with the government policies regarding the development of the public sector. This is more so as it has been the policy to provide permission to those who are in chronic need of foreign exchange lest the development process gets jeopardised either through non-availability of certain basic inputs vital to development or through unfavourable balance of payments situation. Since public sector undertakings are instrumental in providing those inputs, naturally they were accorded highest priority while government granted permission for contracting loans abroad.

It may also be pointed out here that the share of the public sector, on an average, has increased to 70 percent of the total resources in the 1980s from 55 percent in the late 1970s. However, the growth of the share of public sector had undergone significant change in the 1980s vis-a-vis that in the late 1970s. While in the latter case, the growth rate was only 5 percent, in the former case, the share grew at 68 percent on an average, even though the trend had undergone alternate ups and downs.

A decomposition of the credit type wise distribution, however, indicates a change in the trend (table 2.10).

Table 2.10:
India's External Commercial Borrowing: Creditwise composition of Outstanding, Drawal and Repayment
(In percent)

	Drawal				Repayment				Outstanding			
Years	Buyer's Credits	Supplier's Credits	Others	Total	Buyer's Credits	Supplier's Credits	Others	Total	Buyer's Credits	Supplier's Credits	Other	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1980-81	96.0	4.0	-	100.0	NA	NA	NA	100.0	77.5	9.6	12.9	100.0
1981-82	83.2	14.2	2.6	100.0	NA	NA	NA	100.0	72.0	14.2	13.8	100.0
1982-83	83.2	14.2	2.6	100.0	NA	NA	NA	100.0	76.1	13.2	10.7	100.0
1983-84	85.2	12.2	2.6	100.0	NA	NA	NA	100.0	78.0	11.9	10.1	100.0
1984-85	67.9	21.1	11.6	100.0	72.1	22.8	5.1	100.0	73.7	13.0	13.3	100.0
1985-86	71.8	13.8	14.4	100.0	75.6	20.6	3.8	100.0	70.4	14.3	15.2	100.0
1986-87	79.3	6.3	14.4	100.0	89.8	6.1	4.1	100.0	72.8	11.4	15.7	100.0
1987-88	70.0	1.1	28.9	100.0	NA	NA	NA	NA	69.5	9.0	21.2	100.0

Note:- 1. Others include line of credit through financial institutions and other unidentifiable loans.
2. Outstanding figure includes loans by IBRD to the private sector and KFW loans to IFCI, ICICI and NSIC, which are not included in drawal and repayments.
3. Outstanding figures relate to the end-March position of the respective fiscal year.

Source: Reserve Blank of India, FCL returns.

Over the years, suppliers' credits have declined in importance. The reason would possibly be the implicit costs involved in such borrowings due to the tied nature despite being apparently the cheapest variety of commercial loans, both in terms of interest cost and in terms of maturity period[9] net of grace period.[10] Buyers' credit has continued to remain the major source. The reasons could be that these are free resources and as these can be contracted both at fixed and at floating rates of interest, a balance may be ensured in the debt structure. However, in recent years, its importance has been eroded to a certain extent by the growing importance of the credits contracted through financial institutions. The latter source, which contributed a mere 5 percent of total drawal in 1981-82, now accounts for about one-third of total drawal and about one-

fifth of total outstanding commercial debt. This phenomenon may be explained with reference to the re-emergence of the importance of securitised loans[11] in the international markets. Syndicated loans[12] which prominently characterised commercial borrowings of the developing countries in period immediately following first oil shock have given place to the securitised markets recently. However, in repayment amount, only a very small fraction can be attributed to this source mainly because of its longer maturity and grace periods.

SECTION TWO

This section analyses India's international indebtedness vis-a-vis that of certain selected countries chosen at random from different income groups (based on the definition of the International Bank for Reconstruction and Development). The comparative analysis has been carried out based on certain key indicators such as, debt stock, relevant growth indices and growth of outstanding long-term debt for India and the selected developing countries (tables 2.11 and 2.12 in the appendix).

The debt stock (1988) shows that India is one among the leading debtors with US $ 58 billion as outstanding debt as at end- March 1988. Total debt service by India during 1988-89 was US $ 6.4 billion, of which private sources constituted 44 percent.

However, the growth in outstanding debt as well as debt service burden has been accompanied by a satisfactory overall growth in important macroeconomic variables, such as GDP, exports, imports, and investment, for India during 1982-88. This explains India's better performance in debt-servicing on the wake of international debt crisis on a global scale.

The table (2.11) also provides data on certain key debt indicators, such as debt/GNP and interest/exports of goods and services ratio. The former indicates that India's indebtedness, both total as well as private sources, has remained within comparatively satisfactory limit in terms of debt service ratio despite borrowing on a large scale in 1980s. However, the debt/exports ratio for India compares well with that of some of the leading borrowers (e.g., Chile, Indonesia, Philippines). The contrasting picture is that with the same magnitude of the debt/export ratio, countries like Chile, Philippines opted for debt restructuring,[13] while India continued to service her debt burden uninterrupted. In chile, e.g., the country had to resort to restructuring due to large increases in external debt. This latter phenomenon was the counterpart of current account deficits caused by overvaluation of the currency.

Let us now look at certain salient features of the growth in India's outstanding indebtedness vis-a-vis the selected major borrowers (table 2.12). While majority of the borrowers experienced a decline in their outstanding indebtedness, over the later phase, India witnessed a steady but moderately accelerating trend in the long-term debt stock over the years under

consideration. In terms of sources of borrowings, India presents a divergent trend. Majority of the heavily indebted countries borrowed on a large scale from private sources following the period after first oil crisis. However, the source of financing for these countries was mainly official in the 1980s. Viewed in this context, India presents a significantly different experience along with countries like China, Pakistan, and Sri Lanka. India relied mostly on official sources till 1980, and thereafter took resort to large scale borrowing from private sources.

SECTION THREE

While the composition of the external borrowing of the country was mixed in the late 1970s, new borrowing since 1980s has been more concentrated with external commercial resources accounting for nearly one-third of the total debt as at the end of 1989. Such a trend has definitely influenced the debt structure and the consequent debt-servicing pattern.

New disbursements of debt, amortisation and interest payments, during any particular year, are characterised by the structure of the loans contracted which get reflected through grace period and maturity period, commitment and other fees, and premiums above international rates or fixed rate of interest as appropriate . Future amortization and interest conditions, i.e., debt servicing, therefore, reflect the effect of terms negotiated at the margin for each of the components of external debt. This is more so in case of commercial borrowings as these are undertaken on non-concessional terms.

We shall now turn to the terms and conditions of borrowings in 1980s vis-a-vis that in the late 1970s (tables 2.13, 2.14 2.15 and 2.16). India borrowed in the international financial markets both at fixed as well at floating rates over the years under consideration. Borrowings on floating rate have been mostly prominent in case of buyers' credits and credits contracted through financial institutions. However, suppliers' credits have been entirely raised in fixed interest rates. (table 2.13).

Table 2.13:
Share of Fixed and Floating Interest Rates in Total Drawals: 1976-88
(in Percent)

Years	Buyers' Credits		Suppliers' Credits		Line of Credits	
	Fixed	Floating	Fixed	Floating	Fixed	Floating
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1976-77	-	100.0	100.0	-	88.8	11.2
1977-78	26.2	73.8	100.0	-	87.9	12.1
1978-79	86.3	13.7	100.0	-	84.5	15.5
1979-80	-	100.0	100.0	-	46.1	53.9
1980-81	35.8	64.2	100.0	-	-	-
1981-82	44.4	55.6	100.0	-	-	100.0
1982-83	51.8	48.2	100.0	-	12.7	87.3
1983-84	33.0	67.0	100.0	-	-	100.0
1984-85	35.0	65.0	100.0	-	12.8	87.2
1985-86	45.7	54.3	100.0	-	40.6	59.4
1986-87	28.2	71.8	100.0	-	55.2	44.8
1987-88	18.9	81.1	100.0	-	40.3	59.7

Source: 1. Reserve Bank of India, FCL returns; 2) Materials collected for articles on 'India's International Investment Position'.

The overall fixed interest cost declined over the years under consideration. However, at the disaggregated level, the fixed interest cost conditions (as reflected in table 2.14) differed depending upon the type of loans. At the aggregated level the interest rates charged witnessed two distinct phases, period of declining trend in interest rate covering the initial years upto 1978-79 and in the later phase from 1982-83 and thereafter, and a short intervening period of rising trend during

1979-1982. This, however, reflects the trend in interest rate structure in international capital market. The international interest rate witnessed a sharp rise in the early 1980s mainly under the influence of the unorthodox fiscal and monetary policy stance by the USA. Moreover, the excessive demand for foreign resources by the severly indebted countries also exerted its influence.

Table 2.14:
India's External Commercial Borrowings: Growth in Fixed Interest Rates, 1976-77 to 1987-88
(In percent)

Years	Buyers' Credits		Suppliers' Credits		Line of Credits		Aggregate	
	Range	Weighted Average	Range	Weighted Average	Range	Weighted Average	Range	Weighted Average
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1976-77	6.0 - 8.0	7.9	3.0 - 7.0	5.1	6.0 - 7.5	5.7	3.0- 8.0	NA
1977-78	6.0 - 8.7	7.7	2.0 - 7.0	5.5	7.5	7.5	2.0- 8.7	NA
1978-79	7.5 -10.0	7.6	2.5 - 7.0	5.5	6.0 - 7.5	6.8	2.5-10.0	NA
1979-80	7.5 - 8.5	8.4	3.0 - 8.5	8.3	6.0 - 8.0	7.5	3.0- 8.5	NA
1980-81	2.0 -11.3	8.9	3.0 - 7.5	7.3	-	-	2.0-11.3	8.8
1981-82	6.0 -15.0	10.9	3.0 - 10.5	7.7	-	-	3.0-15.0	10.4
1982-83	5.8 -15.0	9.5	3.0 - 12.0	8.6	8.0	8.0	3.0-15.0	9.3
1983-84	5.8 -15.0	9.8	2.0 - 15.0	8.3	-	-	2.0-15.0	9.6
1984-85	3.0 -14.0	9.1	3.0 - 11.5	8.5	7.6 - 8.0	7.9	3.0-14.0	8.9
1985-86	3.0 -14.3	10.1	4.0 - 9.9	8.7	6.6 -10.0	6.9	3.0-14.3	9.4
1986-87	3.0 -14.3	9.4	4.0 - 9.9	8.9	5.6 -10.3	6.1	3.0-14.3	8.9
1987-88	3.8 -10.3	8.0	4.0 - 10.3	8.1	2.5 - 8.5	6.0	2.5-10.3	7.4

Notes: 1. Weighted average has been worked out using drawal in respective year.

Source: 1. Materials collected for articles on "India's International Investment Position".
2. RBI, FCL returns.

However, with the increased resilience of the international capital markets to adjust to the shock waves emanating from the U.S. policies as well as adoption of various debt restructuring policies by the international agencies left the lenders with resources facing an approximately competitive situation which ultimately depressed the international interest rate structure. At the disaggregated level (by type of credit) the range of

interest rates charged was the maximum in case of buyers' credits followed by the credits contracted through financial institutions and suppliers' credits in that order. The weighted average interest rate, weighted by amount drawn during the respective year had also been the highest in case of buyers' credits followed sequentially by supplier's credits and line of credits. It may be mentioned that though the suppliers' credits were available at cheaper costs, other non-economic considerations which endow it with a tied loan character make it less attractive. The tied character leads to considerable degree of over-pricing of equipment and thus reduces the benefits accruing to the receipients. Although, it may be mentioned that the degree of over-pricing varies considerably.

Contracting loans on floating rate of interest is different from that on fixed rate in so far as in former the interest cost is not fixed as the rate at which payment has to be made is dependent on the trend of the rate at the time of payment of the interest. Only fixed element involved in this case is the margin over the rate. Table 2.15[14] shows the movement in floating interest rate and the trend in the spread over the international rate which had declined over the years at aggregative level.

Here London Interbank Offer Rate (LIBOR) for six-month US dollar deposits has been used since major portion of the loans has been borrowed over the period at that rate. Borrowings on other rates, such as Hongkong Interbank Offer Rate (HIBOR), Singapore Interbank Offer Rate (SIBOR), Japanese Long Term Prime Rate (JLTPR) have also been undertaken in recent years on an increasing scale. Despite this, LIBOR occupies the place of prominence.

Table 2.15:

India's External Commercial Borrowings: Growth in Floating Rate and Margin

(In percent)

Years	Interest Rate (Libor)	Margin					
		Buyers' Credits		Credit through financial institutions		Aggregated	
		Range	Weighted Average	Range	Weighted Average	Range	Weighted Average
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1980-81	14.0	0.062-1.000	0.479	-	-	0.062-1.000	0.479
1981-82	16.7	0.062-0.750	0.417	0.250	0.250	0.062-0.750	0.403
1982-83	13.6	0.031-2.000	0.282	0.375	0.375	0.031-2.000	0.288
1983-84	9.9	0.031-1.000	0.600	0.375	0.375	0.031-1.000	0.591
1984-85	11.3	0.062-2.000	0.159	0.250-0.500	0.412	0.062-2.000	0.189
1985-86	8.6	0.062-2.000	0.731	0.125-0.500	0.370	0.062-2.000	0.658
1986-87	6.9	0.015-2.000	0.247	0.025-0.375	0.160	0.015-2.000	0.233
1987-88	7.3	0.125-2.000	0.322	0.062-0.250	0.222	0.062-2.000	0.303

Note:- Interest rates are LIBOR on six-months US dollar deposits (period average for calendar year)

Source:- 1. IFS, Year Books
2. Reserve Bank of India, FCL returns.

The spread of the margin had generally been the largest in case of buyers' credits rather than the credits contracted through financial institutions (suppliers' credits are raised entirely at fixed rate of interest). The trend in the spread as well as the weighted average of the spread (as obtained by weighting with amounts drawn during the respective year) had been a mixed one without showing any steady direction. However, weighted average of spread had been lower in case of credits contracted through financial institutions. The reason that could be attributed to this is that loans contracted under lines of credit through financial institutions face more competitive conditions. These are loans contracted in the international financial markets such as Euro Bond markets, etc. One point worth emphasising here is that since the interest burden in case

of loans with floating rate is calculated at the average premiums above international interest rates, prevailing in the year in which payments are due , the margin appears to be the risk premium. However, this has to be treated with reservations as several studies[15] have arrived at the conclusion that the motivation as well as the impact of change in the spread is ambiguous.

Besides interest charge, the other factors which determine the debt service burden of a country are repayment period and grace period. The debt structure has grown unfavourable over the years under consideration. This was mainly because of the shortening of the maturity structure of debt. To a certain extent, this occurred because of increasing resort to commercial borrowings which grew at a pace faster than concessional borrowings. At aggregated level, repayment period declined while grace period increased. However, the trends differed depending on the type of credit (table 2.16 in the appendix).

Let us now look into the trend in the grace and maturity periods of the commercial loans contracted during late 1970s and 1980s. As may be observed from the table 2.16, during the entire period, both range as well as weighted average of repayment period for buyers' credits had been declining while those for suppliers' credits and credits through financial institutions witnessed a mixed trend.

As in the case of repayment period, credit through financial institutions remained the source of credit with maximum grace period both in terms of range as well as the weighted average.

The trend in the overall structure of India's international indebtedness during the period under consideration had been one in sharp contrast to the debt structure during the post-war years when the major portion of borrowing consisted of public and publicly guaranteed long-term debt. It is thus paradoxical that while lending today is overwhelmingly for developmental purposes conditioned by social objectives in which returns flow over a long period the maturities have contracted and the interest charge has increased.

SECTION FOUR

This section discusses the trend in debt service liabilities by means of certain objective criteria. These are treated as objective criteria as these help in measuring the comparative indebtedness in quantitative credit rating terms. A set of key debt indicators (such as debt/service, debt/export, debt/GNP, interest/export, and debt service/export ratios) has been chosen for the purpose of appraising the solvency and liquidity aspects of the debt service burdens.

Ideally, a measure of solvency would relate discounted future payments to discounted income while a measure of liquidity would relate current payment requirements to current payment ability. But these ideal measures are not readily available. Hence, some proxy measures has been used.

A reasonable proxy for discounted future income may be the current income (GNP), although GNP is a flow measure and

discounted future income is a stock. Hence, debt/GNP ratios are used.

But as debts have to be serviced with foreign exchange, the value of exports gives a more accurate impression of income in the context of debt servicing ability. Therefore, the use of debt/exports ratio has been preferred. This is a ratio of total debt to the flow of export earnings. Changes in this ratio are indicative of alterations in the burden of external debt only when international interest rates and the term structure of external debt remain fairly stable over time.

The measure of liquidity is however, less complicated. It is expressed as interest/exports ratio. This is a current account indicator of the burden of external debt. To account for amortization payments, the debt service to exports ratio is used. This ratio is a mixed current-capital account indicator of the debt burden.

Both these ratios are approximate measures of short - term liquidity, relating current financial requirements to the current availability of suitable repayment means. It may be mentioned here that the debt service ratio is an incomplete and imperfect indicator of present or potential liquidity problems and should never be used in isolation. But it does draw attention to the cash flow squeeze to which an economy may be exposed particularly while traversing along the path of development.[16]

Table 2.17 :

Key Debt Indicators for India: 1976-77 to 1987-88

Years	Debt-Service Ratio@	Debt-Export Ratio	Debt-GNP Ratio	Interest-GNP Ratio	Interest-Export Ratio	Debt-Service/ Exports
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1976-77	-	24.8	1.7	0.03	0.6	3.6
1977-78	18.9	21.8	1.4	0.01	1.2	4.5
1978-79	24.5	19.9	1.2	0.01	0.9	5.0
1979-80	17.3	19.5	1.2	0.04	0.7	3.1
1980-81	17.8	19.6	1.1	0.02	0.5	3.3
1981-82	13.9	28.7	1.6	0.06	1.1	4.0
1982-83	17.3	34.6	1.9	0.20	3.6	6.0
1983-84	20.0	39.3	2.1	0.27	5.1	7.9
1984-85	17.4	58.8	3.4	0.41	7.2	10.3
1985-86	18.4	74.1	3.5	0.36	7.6	13.7
1986-87	12.1	90.3	4.4	0.29	6.1	11.0
1987-88	12.2	86.0	4.6	0.33	6.2	10.5

@ Debt-Service ratio is obtained as a ratio of debt-service payments to total outstanding debt.

Sources:- 1. Reserve Bank of India, FCL returns, and materials, collected for articles on "India's International Investment Position."
2. Reserve Bank of India Bulletin, various issues.
3. Economic Survey (various issues), C.S.O., Government of India.

The aggregate debt service ratio and debt to export ratio for India have remained at manageable levels during the period under consideration (table 2.17). The debt/GNP ratio for India witnessed an accelerating trend throughout the period. The rise in the ratio would have been less pronounced had the depreciation of the rupee not increased the nominal value of rupee - measured debt stock.

Over the period 1976/77 - 1987/88, the debt to export ratio for India deteriorated barring the terminal year of the period under consideration. Debt service ratio had been rising because resources are flowing in increasingly at much higher rates of interests and with shorter maturity periods. In addition, the interest/GNP, interest/export, and debt-service/export ratios continued to increase over the same reference period.

The Implicit Debt Burden:-

The preceding analysis presents only a picture of nominal debt burden. But, the real impact of debt burden may differ significantly from the nominal burden that a country suffers. This calls for an attempt to examine the implicit debt burden for country. This has been attempted with the use of three different debt indicators (table 2.18). The first ratio has been defined in terms of the debt stock measured in current exchange rate over current value of GNP. The second ratio (debt to GNP) is the one for which the debt stock figure has been adjusted for cross currency exchange rate changes since 1976.[17] While the last ratio corrects the cross currency adjusted debt to GNP ratio for the influence of movements in the real value of the domestic currency vis-a-vis the various currencies of denomination.

Table 2.18:
Debt Burden Implicit in India's External Commercial Borrowings, 1976-77 to 1987-88

Years	Debt-GNP Ratio@	Debt-GNP Ratio#	Debt-GNP Ratio*
(1)	(2)	(3)	(4)
1976-77	1.67	NA	NA
1977-78	1.35	NA	NA
1978-79	1.21	NA	NA
1979-80	1.22	1.06	1.09
1980-81	1.07	1.07	1.04
1981-82	1.57	1.43	1.53
1982-83	1.92	1.69	1.87
1983-84	2.08	1.73	1.97
1984-85	3.35	2.47	2.90
1985-86	3.47	2.48	2.82
1986-87	4.35	2.72	3.27
1987-88	4.64	2.69	3.44

@ At current exchange rate;# at constant (1980-81) exchange rate
* At constant exchange rate adjusted for real exchange rate;
NA: Not available.
Sources:- 1. Reserve Bank of India, FCL returns.
2. Reserve Bank of India Bulletin, various issues.
3. Economic Survey (C.S.O., Government of India), various issues.

As one may observe from table 2.18, movement in the debt to GNP ratio over the period 1976/77 - 1987/88 can be explained partly by the movements in the value of the Indian rupee vis-a-vis other currencies in which debt is denominated and partly by the inflation differentials. Over the period 1985/86 - 1987/88, the ratio adjusted for cross-currency exchange rate changes shows a decline than the debt to GNP ratio measured in current rupees, which indicates that the rupee depreciation has aggravated the debt measured in current rupees. The debt/GNP ratio measured at constant rate also shows a decline.

Table 2.19:
India's External Commercial Borrowings: Interest Burden, 1980-81 to 1987-88

(In percent)

Years	Real Interest Rate@			Effective Nominal Interest Rate#	
	Fixed	Float. Rate*	Margin	Fixed	Flexible
(1)	(2)	(3)	(5)	(6)	(7)
1980-81	8.11	12.90	0.44	0.99	1.29
1981-82	8.38	13.50	0.32	2.09	1.39
1982-83	7.05	10.30	0.22	4.96	4.23
1983-84	6.36	6.60	0.39	4.14	6.85
1984-85	5.24	6.70	0.11	3.66	5.37
1985-86	5.50	5.10	0.39	3.83	3.45
1986-87	5.09	3.80	0.13	1.73	2.54
1987-88	NA	NA	NA	1.30	2.95

@ Normal interest cost deflated by index of export prices.
# Nominal interest cost corrected for cross currency fluctuations.
* LIBOR on six-months U.S. dollar deposits.

Sources:-
1. Reserve Bank of India, FCL returns, and materials collected for articles on "India's International Investment Position ".
2. Economic Survey (C.S.O., Government of India), various issues.
3. International Financial Statistis, Year book(IMF), various issues.
4. Reserve Bank of India, Currency and Finance Report, (Vol.II), various issues.

The Interest Burden:-

The effective nominal interest cost represents interest payments as a function of the debt stock, with both interest payments and stock expressed in the same currency. This nominal interest cost measure can differ from the interest rate charged on loans because of cross-currency fluctuations. Table 2.19 shows this nominal interest cost for India corrected for cross-currency valuation changes. It also shows a measure of the real interest burden: the nominal interest costs deflated by the rate of change in the index of export prices of India.[18]

As one may observe, the measure of the real interest burden has witnessed considerable downward trend in the 1980 as a consequence of the increase in export prices for India during the 1980s. However, the effective nominal interest cost has witnessed wide swings in the 1980s mainly because of the fluctuating trend in the major international currencies.

CONCLUSION:

Though India borrowed on a very large scale in the 1980s, the country has not been inflicted with debt crisis which continued to be a global phenomenon in the 1980s. This is true despite the fact that India's debt stock (1988) as well as debt service payments during 1988-89 compare well with those of certain major borrowers in the world.

As compared with the major international borrowers, India's borrowing pattern presents a clearly distinct trend. India's large scale borrowings from private sources was mainly initiated in the 1980s as compared to that of the major international borrowers who took refuge in private sources in the 1970s to reconcile the impact of first oil crunch.

However, despite heavy borrowing in the 1980s, the debt service ratios have been kept within manageable limits as India could service her debt burden uninterrupted and the country neither opted for debt restructuring nor for special protection from leading international institutions, following the path of the major borrowers. This outcome could be explained partly with reference to the favourable performance in the domestic front as well as on the external front. However, this is also the outcome of a cautious and effective debt management approach.

A look at the data published by the national sources reveals that the overall dominant factor influencing the rapid pace of growth of the debt stock as well as inflow of external resources in the 1980s is growth in external commercial borrowings. This latter component has grown at an annual compound rate of 35.4 percent vis-a-vis an annual compound growth rate of 20.1 percent in overall debt stock during the same period. An overview of the salient features of the trend in commercial resource inflows as revealed by the analysis in preceding sections may briefly be recapitulated as under.

Composition of Commercial Resource Inflows.

An analysis of the trend in the currencywise composition of external commercial resource inflows reveals the continuance of the trend over the years under consideration. Currency which appear prominently is U.S. dollar. This trend continued throughout the 1980s, despite U.S. dollar's loss of strength till February 1985. Besides this, contracting loans in other currencies was mainly in consonance with the trend in exchange rate movements in the international markets. This strategy has helped in easing the debt service burden in the Indian context.

The sectoral trend highlights that the priority sector has been the public sector during the reference period. However, in recent years, the share of the private sector has been steadily increasing mainly on account of the large scale borrowing by the financial institutions (IDBI, ICICI, etc.) and government's changing industrial policy stance.

The analysis, however, underlines a change in the trend in credit type wise composition of the commercial resource inflows. During the initial years, suppliers' credits constituted significantly large portion of the inflows which, later on, gave space to buyers' credits. Very recently, the lines of credit have gained prominence. The change in the trend may apparently be explained with reference to the implicit costs involved in raising suppliers' credits, the availability of wider varieties of sources of funds, as also the change in lending practices in the international capital markets.

The Term Structure of External Commercial Resource Flows. The overall debt structure has turned unfavourable over the years with rising concentration on loans with short-and medium term maturities. Even though the interest cost has increased in absolute term, the rate of interest charged has declined particularly since mid-1980s.

India has been contracting commercial loans both on fixed as well as on flexible interest rates. The overall trend in fixed interest cost has been a decelerating one, though at the disaggregated level, the trend differed depending upon the type of credit (buyers' credit being the costliest source). The same conclusion holds good in case of floating interest rate (LIBOR being the maximally used rate) at the aggregate level. However, no discernible trend persisted in case of the margin over the floating interest rate. The trends at aggregated as well as disaggregated levels in grace period and maturity period have been one of declining duration. However, the only exception is the lines of credit which witnessed rising trend in the context of the above two.

While assessing the impact of indebtedness through the use of key debt indicators, it has been observed that almost all the indicators have shown an upward tendency. Only debt/GNP and debt/export ratios have declined in the terminal year under consideration.

Implicit Debt Burden.

As indicated by the key debt indicators, the incidence of nominal debt burden has continued to remain higher. The burden would have been lower had the rupee not depreciated so much as has been witnessed and the inflation differentials had been lower. As has been observed (in section four), the trend in the debt/GNP ratio at constant exchange rate has been one of donward tendency vis-a-vis the debt/GNP ratio at current exchange rate. The same holds true in case of debt/GNP ratio adjusted for cross currency fluctuations.

Regarding the implicit interest burden, both the real interest rate (nominal interest rate deflated by the export prices) as well as the effective nominal interest cost continued to show a declining trend alongwith the nominal interest rate charged. However, decline in the former case has been more pronounced.

In short, it can be said that the quantum jump in the external commercial borrowings, as witnessed by India, in the 1980s has not been accompanied by a discernible change in trend of borrowing when viewed within the framework of composition of commercial resources. However, the debt structure has become unfavourable mainly because of the growing concentration on loans with short and medium term maturities. This is also reflected in the continually rising debt indicators. Despite this, the country did not fare bad in the context of servicing debt obligations.

NOTES

1. Solvency implies that a country is able to generate a present value of earnings equal to outstanding external debt.

2. Liquidity indicates that a country is able to meet its external payments obligations on the agreed time schedule.

3. Following World Bank's definition, total external debt comprises of-

   (a) long-term debt which has an original or extended maturity of more than one year and that is owed to nonresidents and repayable in foreign currency, goods or services. Long-term debt has three components:

   Public debt, which is an external obligation of a public debtor, including the national government, a political subdivision (or an agency of either), and autonomous public bodies;

   Publicly guaranteed debt, which is an external obligation of a public debtor, that is guaranteed for repayment by a public entity; and private non-guaranteed debt, which is an external obligation of a private debtor that is not guaranteed by a public entity.

   (b) Use of IMF credits denotes repurchase obligations to the IMF with respect to all uses of IMF resources, excluding those resulting from drawings in the reserve tranche. It comprises purchases outstanding under credit tranches, including enlarged access resources and all of the special facilities (the buffer stock, compensatory financing, extended fund, and oil facility), trust fund loans, and operations under the structural adjustment and enhanced structural adjustment facilities.

   (c) Short term external debt which is defined as debt that has an original maturity of one year or less.

4. Multilateral external assistances are loans granted by international organisations comprising of loans and credits from World Bank, regional development banks, and other multilateral and intergovernmental agencies. There are also loans from funds administered by an international organisation on behalf of a single donor government. But the inclusion of these are debatable issue and no clear cut

criterion regarding their inclusion in any particular type exists.

5. Bilateral external assistances are loans from governments and their agencies (including central banks) and loans from autonomous bodies.

6. Concessional assistances are loans with a grant element (face value of a loan commitment less the sum of the discounted present value of the debt service payments to be made on the loan, using a specific discount rate) of 25 percent or more.

7. External commercial borrowings relate to loans raised in the international capital markets. These include: (a) buyers' credits; (b) suppliers' credits; and (c) line of credit contracted by the financial institutions.

   Buyer's credits are a form of export finance warrenty the exporter is paid promptly the overseas importer, who obtains necessary funds by means of a loan from the bank. In practice, the payment is frequently made directly by the bank to the exporter.

   Suppliers' credits are export finance made available to the supplier of the goods. A typical supplier credit would involve the exporter supplying goods to an overseas customer on a credit basis, receiving from the buyer a cash sum amounting to a certain percentage of the value of contract, and bills of exchange on promisory notes payable over a period representing the balance.

   A line of credit implies an over draft privilege granted by a lending institution, allowing a borrower to borrow sums within a stated range without treating each loan as a new loan, requiring separate approvals and documents from the lender.

8. Commercial terms include a high rate of interest charged on the amounts borrowed with a short duration for repayment of the loan and either a virtual absence of grace period or of a very short duration for grace period during which element of interest cost prevails. However, the repayment as well as grace period may extend over a longer time period depending on the type of loan, e.g., line of credit or credit contracted through financial institutions.

9. Maturity period indicates the duration during which the loan has to be repaid.

10. Grace period is the period between the contract of loan and the initiation of laon repayment, during which principal repayment is not required to be met.

11. Securitised loans are loans raised through floatation of preferred stocks, bonds, etc. which are negotiable and tradeable in capital markets.

12. Syndicated loans indicate loans made available by a group of investment bankers who join to share the risk and marketing strength when bringing a large issue to market.

13. Restructuring implies,

    a) the postponement of all or part of one or more maturities of one or more loans; the creditor and the debtor remaining unchanged;

    b) a general term for the outcome of discussions on debt reorganisation for a borrowing country.

14. Details about floating interest rate has been collected for the period 1980-81 to 1987-88 as information relating to the period prior to 1980-81 is scanty.

15. Studies relating to the determination of spread over certain international interest rate are:

    Angeloni, I. and B.K. Short (1980) "The Impact of Country Risk Assessment on Eurocurrency Interest Spreads: A Cross-Section Analysis" Unpublished, IMF, December 30).

    Feder, G. and R. Just (1977): "An analysis of Credit Terms in the Euro Dollar Market", European Economic Review, Vol. 9. (May), pp.221-243.

    Feder, G. and K. Ross (1982): "Risk Assessment and Risk Premiums in the Eurodollar Market", Journal of Finance, Vol.37 (June) pp.679-691.

16. See Avramovic, D.et.al (1964) Economic Growth and External Debt, John Hopkins Press, p.68.

17. The debt stock has been adjusted for the relative movement in currencies, in which the debt stock was denominated originally, vis-a-vis the rupee.

18. Nominal interest costs have been deflated by the rate of change in the index of export prices following the method adopted by the World Bank in arriving at the real interest-costs for developing countries.

Table 2.11:

Debt Service and Growth: India and Selected Third World Countries.

Country	Debt Outstanding		Debt Service, 1988-89				Debt Ratios (%) 1988				Average Annual Growth Rates, 1982-88(%)				
	Total US $ Billions	From Pvt. Sources %	Total		Interest		Debt/GNP		Int./Exp.		GDP	Exports	Imports	Invest-ment	Percapita Consum-ption
			Total (US$B)	Pvt. Sors. (%)	Total (US$B	Pvt. Sors. (%)	Total (US$B)	Pvt. Sors. (%)	Total US$B)	Pvt. Sors (%)					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Argentina	58.9	69.2	5.0	18.0	3.1	72.0	60.5	41.9	27.5	19.8	0.9	2.3	0.6	-2.7	-0.1
Bangladesh	10.2	1.9	0.5	10.1	0.2	6.2	53.2	0.9	8.6	0.5	3.3	3.1	-1.0	NA	NA
Brazil	114.6	66.9	18.3	68.9	13.2	67.5	30.7	20.6	36.1	28.7	4.7	5.6	-1.4	2.6	2.4
Chile	19.6	60.0	2.1	56.1	1.3	57.4	96.6	57.9	15.1	8.7	4.6	7.0	4.6	15.4	0.4
China	42.0	51.9	4.4	64.0	2.2	53.8	11.3	5.9	5.3	2.8	7.4	7.9	17.5	NA	NA
Egypt	49.9	12.3	2.0	32.0	1.0	21.7	142.5	17.5	8.4	1.8	6.8***	3.9	3.5*	9.2*	16.0**
India	57.5	35.0	6.4	43.7	3.1	53.7	22.3	7.8	14.0	7.5	5.2	10.9	9.3	12.3	9.5
Indonesia	52.6	36.2	9.3	62.2	3.6	44.3	43.7	25.0	16.9	7.5	3.6***	07.4	-2.5	13.6*	3.8*
Korea	37.2	45.6	9.6	57.4	3.0	43.7	22.0	10.0	4.2	1.8	8.5	10.5	4.2	13.3	7.3
Malaysia	20.5	69.0	5.6	84.6	1.7	73.6	66.0	45.6	6.8	5.0	4.0	4.0	-0.8	-0.8	1.5
Mexico	101.6	71.5	15.6	73.4	8.8	73.7	58.0	41.5	27.3	20.1	0.2	4.7	1.6	-5.0	-1.5
Pakistan	17.0	5.3	1.8	17.6	0.7	10.3	45.6	2.4	8.9	0.9	6.7	5.1	-1.0	13.8	9.8
Philippine	29.4	45.9	3.6	57.7	2.1	55.0	72.9	33.5	18.6	10.2	-0.2	6.3	2.5	-10.7	-0.2
Sri Lanka	5.2	14.1	0.5	40.7	0.2	32.5	75.1	10.6	7.6	2.5	4.7***	3.6	0.6	12.9	13.6

Notes:- (1)For Bangladesh, Egypt, Indonesia, Pakistan, Srilanka, China, Korea, Malaysia and India, average annual growth rates of macro-variables have been worked out for the period 1982-86.

*Available only for 1982.

** 1982-85.

*** 1982-84.

Sources:- 1. World Debt Table, Vol.2, 1989-90 World Bank.

2. International Financial Statistics, Year Book (1987), IMF.

Table 2.12:

Long-term Debt Outstanding: India and selected Third World Countries (Selected Years)

(US $ Millions)

Countries	1970			1980			1985			1988		
	Official Credits	Private Credits	Total	Official Credits	Private Credits	Total	Official Credits	Private Credits	Total	Official Credits	Private Credits	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Argentina	637	4,534	5,171	1,903	14,871	16,774	4,815	37,090	41,905	8,760	40,784	49,544
Bangladesh	-	-	-	3,340	58	3,398	5,732	148	5,880	9,139	191	9,330
Brazil	1,886	3,242	5,128	7,002	50,310	57,312	15,449	75,255	90,704	24,612	76,743	101,355
Chile	1,182	1,386	2,568	1,374	8,024	9,398	2,107	15,521	17,628	4,338	11,783	16,121
China	-	-	-	446	4,507	4,503	4,478	5,485	9,963	10,406	21,790	32,196
Egypt	1,227	487	1,714	13,808	2,870	16,678	27,256	6,524	33,780	37,130	6,129	43,259
India	7,507	430	7,937	16,315	2,343	18,658	22,483	10,441	32,924	31,056	20,112	51,168
Indonesia	2,170	744	2,914	9,556	8,606	18,162	15,169	15,486	30,655	26,620	19,035	45,655
Korea	588	1,403	1,991	6,331	11,905	18,236	10,142	24,776	34,918	10,445	16,931	27,376
Malaysia	265	175	440	1,444	3,812	5,256	3,304	14,343	17,647	4,268	14,173	18,441
Mexico	1,149	4,817	5,966	4,481	36,734	41,215	8,840	79,616	88,456	16,022	72,643	88,665
Pakistan	2,170	744	2,914	9,556	8,606	18,162	15,169	15,486	30,655	26,620	19,035	45,655
Philippines	272	1,272	1,544	2,628	6,194	8,822	6,749	9,634	16,383	23,476	991	24,467
Sri Lanka	253	64	317	1,087	143	1,230	2,167	768	2,935	3,522	731	4,253

Note:- 1) Certain third world countries have been chosen randomly from low income and middle income groups (based on world debt table) classification.

2) Data are shown for India as of the end-March while for others as of the end-December of the respective years.

3) Low-income countries are those in which 1987 GNP per capita was less than $ 480, and middle income countries are those in which GNP per capita was $ 480 - $ 6,000.

4) Private credit comprises of publicly quaranteed private credit and private non-guaranteed credits

Source:- 1. World debt table, Vol.II, 1989-90.

Table 2.16:

India's External Commercial Borrowings: Trend in Grace and Maturity Periods
1976-77 to 1987-88

(In years)

Years	Grace Period						Maturity Period						Aggregate Grace Period		Aggregate Maturity Period	
	Buyers' Credits		Suppliers' Credits		Line of Credits		Buyers' Credits		Suppliers' Credits		Line of Credits					
	Range	Weighted Average	Range	Weighted Average	Range	Weighted Average	Range	Weighted Average	Range	Weighted Average	Range	Weighted Average	Range	Weighted Average	Range	Weighted Average
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1976-77	0-2.00	1.07	0-2.50	0.77	0 - 3.00	1.80	4.00- 8.00	6.12	7.00-11.00	9.26	4.00-8.00	5.90	0-3.00	NA	4.00-11.00	NA
1977-78	0-3.00	1.28	0-3.00	0.66	2.00	2.00	3.00-10.00	6.10	8.00-12.00	9.65	8.00	8.00	0-3.00	NA	3.00-12.00	NA
1978-79	0-2.00	0.10	0-1.50	0.57	1.00-2.00	1.70	2.5 -10.00	9.78	6.00-13.00	10.19	5.00- 8.00	8.60	0-2.00	NA	2.50-13.00	NA
1979-80	0-0.25	0.23	0-1.00	0.45	1.00-3.00	1.80	3.00- 8.50	5.16	5.00-12.50	9.19	5.00-10.00	8.90	0-3.00	NA	3.00-12.50	NA
1980-81	0-6.17	0.56	0-0.72	0.42	-	-	4.00- 8.00	5.52	2.00-10.00	5.34	-	-	0-6.17	0.55	2.00-10.00	5.51
1981-82	0-5.00	1.32	0-3.33	0.61	6.08	6.08	5.00-12.25	8.01	2.00-10.00	7.56	5.00	5.00	0-6.08	1.34	2.00-12.25	7.90
1982-83	0-6.17	1.72	0-1.93	0.60	0.10-5.88	5.15	2.00-17.78	7.99	2.50-11.00	7.21	5.00-6.50	5.19	0-6.17	1.65	2.00-11.00	7.80
1983-84	0-3.54	2.46	0-2.33	0.47	2.92	2.92	2.00-10.50	5.91	2.00-10.00	6.06	4.00	4.00	0-3.54	2.23	2.00-10.50	5.90
1984-85	0-6.00	2.03	0-3.00	1.27	0- 9.08	1.82	1.00-15.00	6.11	2.25-18.00	7.42	3.50-4.50	9.72	0-9.08	1.86	1.00-15.00	6.80
1985-86	0.40-5.00	2.94	0.25-1.58	0.59	3.46-4.96	4.50	4.00-11.00	6.38	5.00-10.50	7.70	4.00-6.50	4.88	0.25-5.00	2.80	4.00-11.00	6.30
1986-87	0.08-9.46	4.60	0.38-0.75	0.50	0-10.00	5.49	0.50-11.50	5.80	4.50-11.50	8.00	1.00-6.00	3.20*	0-10.00	4.50	0.50-11.50	5.60
1987-88	0.46-7.42	4.75	0.50	0.50	0.33-4.50	3.10	1.00- 7.50	5.53	4.50	4.50	10.00-14.50	12.90	0.33-7.42	4.20	1.20-14.50	7.60

Note: 1) Loans for which data are not available are excluded.
2) Maturity period is repayment period excluding grace period.
* Several loans have been identified in which cases, repayment has to be completed in one shot. This has influenced the weighted average in case of line of credits. However, in case of buyers' credits, such cases have been omitted.

Source:- 1. Materials collected for articles on "India's International Investment Position".
2. Reserve Bank of India, FCL Returns.

CHAPTER THREE

LONG TERM ASPECTS OF INDIA'S COMMERCIAL BORROWING STRATEGY

Economic development, partly financed by foreign resources borrowed on commercial terms, is inextricably bound up with the problems of indebtedness.[1] Development requirements and debt service payments are the two most important conflicting claims on the developing economies' foreign exchange resources. An analysis of how development process evolves over time vis-a-vis the growth in debt-service burden, therefore, assumes significance.

However, harmonising the conflicting claims on resources assumes different dimension depending on the time horizon under consideration. From a long run point of view, this above aspect implies the evolutionary trend in the relationship between debt and output; while the short run aspect of the problem presents occasional deviations in the evolutionary time path of debt/output ratio at several discrete time points. These temporary deviations may be broadly symptomatic of the occurrences of cyclical or accidental forces and/or outcomes of alternative development policy decisions adopted for the development programmes. Hence, aspects of international indebtedness cannot be dissociated from the general aspects of economic development and more so when the economy under consideration is a developing one like India.[2]

In view of the pace of India's debt build ups since the mid - 1970s and especially in the 1980s, the questions that automatically emerge: whether India has borrowed excessively and

whether she can manage her burgeoning debt. Although, there does not seem to be existing any universally accepted criterion for judging the optimality of foreign borrowing, it is generally contended that the country has not borrowed imprudently in the past. It may be pointed out here that the build up in external debt should not pose problem if it reflects increased investment in the context of rising or stable, but not declining, savings rate. Also, the growth in debt might be a concern if borrowing reflects an attempt to maintain consumption at unsustainable level.[3] Viewed within this perspective, it may be asserted that India's growing level of external borrowing must not create any serious debt servicing problem (table 3.1).

Table 3.1:
Consumption and Savings as Ratios of GDP at Market Prices*

Years	Total Consumption	Government Final Consumption	Gross Domestic Savings
(1)	(2)	(3)	(4)
1960-61	89.6	17.0	12.7
1964-65	86.2	21.9	12.7
1969-70	84.7	23.8	15.0
1974-75	85.7	22.8	17.4
1979-80	81.2	28.6	21.6
1980-81	82.6	27.1	21.2
1981-82	80.8	28.8	21.1
1982-83	80.5	29.8	19.5
1983-84	80.8	29.5	19.9
1984-85	80.6	29.9	19.6
1985-86	78.3	32.8	21.0
1986-87	79.6	32.3	21.6
1987-88	79.4	33.1	20.2
1988-89**	77.4	34.4	21.2

Notes: * Values are at current prices.
** Quick Estimates.

Source: National Accounts Statistics, C.S.O., Government of India, Various Issues.

As is evident from table 3.1, despite rapid growth in foreign debt, total consumption as a proportion of GDP at current

market prices declined. However, the government final consumption expenditure showed an increasing trend. Besides, gross domestic savings as a proportion of GDP was rising between the 1970s and mid 1980s and since then has stabilised around the level attained in 1985-86.

In addition to the above, in the Indian context, the government exercises almost complete control over the allocation of foreign resources between sectors and industries. Because of this strict supervision, the magnitude of diversion of resources to uses other than designated ones appears to be relatively low.

It is against this background that India's external commercial borrowing strategy has to be assessed from a long run perspective.

Stray attempts[4] have been made in the Asian context to examine the long-run aspects of using controlled inflow of commercial resources to promote development. This is despite the fact that the developing economies in this continent have produced rich and varied results through prudent use of foreign resources over a fairly long period of time. In the Indian context, there has been a complete absence of any such analysis even though a significant phenomenon of post independence development process has been dependence on external resources, though on a low level. Most often, it has been found that in the plan formulations, the projected inflow of resources had been determined largely on an historical and political basis rather than through a systematic evaluation of plausible alternatives.

Keeping in mind the aforesaid lacuna, this chapter would attempt to assess the impact of the plausible commercial borrowing strategies compatible with India's attainment of 5.5 percent growth rate as stipulated in the Approach Paper to the Eighth Five-Year Plan. Attempt would be made here to trace out the development in time path of debt/output ratio over a finite horizon based on historic trend as well as assumed behaviour of macro variables, such as investment, capital - output ratio, savings, exports, etc. The time path would be derived based on the notion that any economy in making present decision to borrow aims at reaching the stage of self-sustained growth within a finite time period.

Underlying the above objective is the concept of external resource requirements which is assumed to facilitate the development process of an economy in future. Let us assume that a country's net foreign debt depends on the resource gap (+) or surplus (-) and interest on existing debt stock. Then the dynamics of foreign indebtedness can be described in the following way. Assuming the interest rate as a constant and treating resource gap as a decreasing function of time, the three phases of the capital inflow - cum - debt cycle can be explained. Phase one is that of positive resource gaps, when debt grows faster than interest rates. In phase two, the country acquires resource surpluses, but these are not sufficient enough to offset interest payments. Hence, debt continues to expand although at a rate of growth below the interest rate. Finally, in phase three the resource surpluses grow at a pace to surpass the burden of interest payments, and the nominal debt declines until it is paid

off.[5] The above is the description of the debt cycle which a country passes through in the transitional process from a young debtor to a mature creditor stage.

The fundamental question in connection with the above is how to obtain the projections of resource inflow requirements. Such requirements can be conceived alternatively as related to a savings gap or to a foreign exchange gap. There are two distinct lines of approach in the context of this problem: the two-gap model[6], and the Harrod-Domar model[7].

In the tradition of the two-gap model, growth rate formula can be derived from considerations of either internal (saving-investment) or external (export-import) balance. Since foreign resources can add both to the availability of saving and to the availability of foreign exchange, and since in a two-gap disequilibrium situation only one of the two constraints is likely to be binding at any particular time, the requirement of resource inflow depends critically on which constraint is, in fact, binding.

The significance of trade constraint as an independent limit on development process is seriously subject to questions in the context of India which had trade surplus, though very infrequently. Moreover, based on several econometric studies[8], it may be concluded that India comes under the category consisting of those countries for which saving constraint, both quantitatively as well as qualitatively, limits the development process[9].

Thus, the projections of required resource inflows would be worked out based on Harrod - Domar model of saving - investment gap and the country borrows in order to cover the difference between investment and saving. It is assumed in the framework that the external balance would adjust in accordance with the postulated behaviour of savings and investment.

The outcomes, as will be discussed, assume certain features of the growth pattern of the Indian economy. These are briefly narrated below.

1. It has been assumed that a 5.5 percent output growth rate per annum would be attained over the period.

2. Import - export gap has been assumed, by implication, equal to the saving - investment gap. Consequently, the resource gap to be covered through net capital inflow may be treated as equivalent to the saving shortage to cover the required investment. This has the advantage in avoiding any problem that may arise in deriving the values of resource gap through current account deficit net of direct foreign investment (which has not been included in our definition of external liabilities related to debt due to conceptual issue as well as non-availability of appropriate data).

In order to identify the volume of borrowing to supplement the domestically mobilisable resources we have used the term net resource inflow which has been defined as equal to the difference between investment and domestic savings. Net resource inflows

indicate the net volume of resources transferred into an economy during a particular period of time. Thus, these are indicative of the net contribution of the foreign borrowing into the development process through supplementing domestic resources. However, this definition implies that the net resource inflow does not accommodate the debt service obligations, i.e., amortisation and interest payments. But borrowing on commercial terms is accompanied by high amount of interest charges and amortisation obligations to be fulfilled within a short duration. To obtain the net amount borrowed to supplement resources and interest charges on the net debt amount of the previous year, the debt stock ,we have used the concept of net borrowing. Thus, net borrowing has been defined as equal to net resource inflow plus interest on the net debt of the previous year. Net borrowing helps in isolating the impact of borrowing on current account side of the balance of payments since this implicit ly represents the interest rate structure of the loan contracted. Besides, this, commercial loans involve initiation of amortisation within a very short span of time after contracting loans since the element of grace period is either very short or there does not exist any grace period at all. Moreover, during the grace period the country has to incur heavy expenses on account of interest payments. Thus, the repayment process starts quickly. Thus, gross borrowing is equal to net borrowing plus total amount of amortisation incurred during a particular year. Gross borrowing represents the impact of borrowing on capital account side of the balance of payments, as this depends on the terms of repayment.

As enunciated earlier, the analysis has assumed that the output growth depends on saving parameters and capital-output ratios as in the Harrod - Domar framework. Within this framework, the conditions which must be met in order to escape the risk of explosive debt situation are discussed below.

1. The marginal rate of savings is higher than the initial average rate of savings. We have also assumed that marginal rate of savings is an increasing function of the increase in GDP in the current year. Based on the above, if any particular reference year is sufficiently distant, then for zero debt level to be attained the rate of growth of savings can be assumed to exceed the rate of growth of GDP and investment. Hence for the cumulative debt burden reducing to the zero level, the rate of growth of savings must exceed the rate of growth of GDP and investment (proof given in appendix III-A).

2. Besides the above, another condition must be satisfied to escape the viciously cumulated debt problem. The marginal savings rate must exceed the product of the capital- output ratio and the GDP growth rate (proof in appendix III-A).

A point to be mentioned here is about the saving-investment gap. Usually, in a saving - investment gap framework of analysing debt cycles over a long run, both the average and marginal savings are defined in relation to the base year income[10]. But in the present chapter, both the magnitudes have been defined in relation to the previous year's national income. The justification lies in the fact that under the former

specification the economy tends to save much more than appears reasonable in view of the observed trend in the behaviour of the domestic savings.

The chapter has been structured along the following lines. Section one analyses the development-cum-debt process based on historic trends in the relevant macro economic variables. The result, logically, is an extremely high level of resource gap that exceeds the possibilities for financing through external borrowings, a major component of which is obviously commercial borrowings. In section two, a greater domestic effort has been assumed designed primarily to reduce the resource gap in net terms. It is also assumed that average conditions of external commercial borrowings will be maintained at levels similar to those prevailing in recent years. Finally, section three, using the same projection of the gap in resources, as in section two, assumes that external indebtedness will worsen in future as a result of larger proportion of commercial borrowings in total debt as well as worsening in the terms of external commercial borrowings. Consequently, both net as well as gross borrowings will increase rapidly and debt service will eventually absorb an excessively larger share of foreign exchange available.

SECTION ONE

In Indian context, it is sometimes asserted that foreign resources are more important as a source of foreign exchange than as a source supplementing total investible resources. These resources, mainly by financing the import content of the investment projects, have enabled the economy to sustain a higher level of investment.

However, enough evidence has never been adduced to show that domestic savings and foreign capital inflows are really non-substitutable in the Indian case. Thus, we presume that even if there is an independent foreign exchange constraint, apart from the constraint of total savings in which inflow of capital is a perfect substitute for domestic savings, the former aspect may be ignored. We may thus generalise that India borrows abroad mainly to bridge the saving - investment gap.

The preceding statement may also be established with reference to the trend in India's important macro economic variables (table 3.2).

Table 3.2:

India's Important Macro Economic Variables, 1969-70 to 1987-88

(Rs.Crores at current prices)

Years	Gross Domestic Product at Market Prices	Gross Domestic Investment	Gross Domestic Savings	Saving-Iinvestment Differential as a % of GDP Mp	Net inflow* of all Resource as a % of GDP Mp	Exports of goods	Exports of Services
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1969-70	40387	6285	6044	0.6	0.5	1413	428
1970-71	43168	7177	6783	0.9	0.9	1535	366
1971-72	46257	7986	7508	1.1	1.2	1608	488
1972-73	51005	8130	7833	0.5	0.4	1971	451
1973-74	62007	11824	11432	0.7	-0.1	2523	420
1974-75	73235	13379	12726	0.9	0.7	3331	748
1975-76	78761	14811	14928	-0.2	0.2	4043	1744
1976-77	84894	16721	18030	-1.5	-1.8	5146	2136
1977-78	96067	18765	20230	-1.6	-2.1	5404	2831
1978-79	104109	24266	24138	0.1	-0.8	5726	2950
1979-80	114356	25278	24698	0.5	0.2	6459	4291
1980-81	135812	30867	28773	1.5	2.1	6711	5766
1981-82	159420	36279	33668	1.7	1.9	7803	5775
1982-83	177588	37236	34670	1.5	1.1	9137	6102
1983-84	206681	43558	41041	1.2	1.5	10168	6893
1984-85	230591	48493	45201	1.4	1.3	11959	8243
1985-86	262507	61384	55150	2.4	2.2	11577	7876
1986-87	293408	68521	63426	1.8	2.2	13315	8274
1987-88	330465	73090	66650	1.9	2.4	16396	9279

Notes: Figures in columns (5) and (6) are obtained as a percentage of Gross Domestic Product at Market Prices

* Based on current account deficit.

Sources:1.National Accounts Statistics,C.S.O.,various issues; 2.Reserve Bank of India Bulletin, various issues

We may conclude from table 3.2, the trend in India's macro economic variables over the years 1969-70 through 1987-88. The aim here is to compare the trend in saving - investment differential with that of net inflow of foreign resources over the years under consideration. As is evident, the main reason for contracting foreign loans abroad was to bridge the gap between saving and investment. The conclusion may be arrived at by comparing the two columns, (5) and (6). Of the two, the former has been obtained as saving - investment differential as a ratio (in percentage terms) of Gross Domestic Product at current market prices; while the latter has been arrived at current account balance (adjusted for official transfer payments, and errors and ommissions) as a ratio of the Gross Domestic Product at current market prices. The near identity between the two serii establishes that the need to raise foreign funds was mainly motivated to finance the excess of investment over domestically mobilisable resources. However, the discrepancies encountered between these two serii indicate that under certain circumstances India sought refuge to foreign resources for smoothing consumption, though these are the contingencies caused by exogenous shocks which the country has to meet with non-recurringly.

Against this backdrop, let us now turn to the aspects of India's external indebtedness (and more specifically the indebtedness due to commercial loans) vis-a-vis her external resource requirements and the debt servicing capacity within a long-run perspective based primarily on the continuity of historical trends in the context of investments compatible with

achieving an output growth of 5.5 percent per annum, as well as savings and exports.

The key assumptions, with regard to the coefficient of savings, the capital-output ratio and the rate of export expansion, underlying the exercise in this section are described in detail in methodology (appendix III-B). Based on these assumptions, the projected resource gap, and hence the net resource inflow for a period of twenty-five years have been obtained (table 3.3 in the appendix). The projected resource gap corresponding to certain selected years are given below.

Table 3.4:
Requirements of Net Commercial Resource Inflow*
(Rs. Crores)

Year	GDP at 1987-88 Market Prices	Gross Invest-ment	Gross Domestic Savings	Net Resource Inflow	Col.5 as % of Col (2)	Col.5 as % of Total Exports
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1987-88	330464	73090	66650	298	0.1	1.2
1991-92	409388	108077	99231	2654	0.6	7.7
1996-97	535053	155968	151058	1473	0.3	3.1
2001-02	699293	223074	211221	3556	0.5	5.5
2006-07	913948	301602	271281	9096	1.0	10.9
2012-13	1260190	415860	327437	26527	2.1	24.3
Compd. Growth Rate(%)	5.5	7.2	6.6	19.7	-	-

Notes: Figures for 1987-88 are actuals.
* At 1987-88 Market Prices.

Source: Based on table 3.3

The projections on resource gap prepared in accordance with the parameters observed in the past indicate an execessive rise in the amount of resources required to attain and maintain an output growth rate of 5.5 percent per annum.

It may be seen from data presented in table 3.4, that if GDP grows at a target rate of 5.5 percent, and the economy invests and saves at the annual compound rates of 7.2 percent and 6.6 percent respectively, then India's dependence on net commercial resource inflow will substantially come down from a level of 0.6 percent of GDP in 1991-92 to 0.3 percent of GDP in 1996-97. However, the requirements of net commercial resource inflow would take a sharp increasing turn thereafter and as a proportion of GDP would assume an explosive path. The same trend would follow in case of net resource inflow as a proportion of export earnings.

The projections for resource gap has been integrated with projections of financial flows abroad. In other words, consideration has been given to payments of interest and amortization on the external commercial debt existing at the end of the preceding year.

The estimates of net resource inflow that have been presented in table 3.3 (in the appendix) give an idea only of the magnitude of the net commercial resource inflow required over the years under consideration. However, these estimates alone does not represent the magnitude of indebtedness. For as foreign resources come in the form of loans, interest and amortisation charges must be paid on the accumulated debt. Since debt service liabilities must be met for a considerable period of time by new borrowings, the estimates of net resource inflow are considerably less than India's total requirements of commercial borrowings. This necessitates the estimates of net and gross commercial

borrowings and net commercial debt. These estimates have been generated within the framework of the model adopted for the purpose. Net resource gaps combined with the amounts required for interest payments give the net external borrowings on commercial terms. While gross borrowings have been arrived at by adding amortization on existing debt stock in the previous year to the amount of net borrowings. Under the assumptions that historic trend continues to prevail, the distinction between net addition to resources and financing requirements is particularly relevant, since the economy is likely to be in the market for external funds for a long time to come. In this case, the build-up of interest payments and external debt is so rapid that gross capital inflow is a continuing phenomenon and never ceases. In order to estimate the volumes of total net and gross financing requirement, it has been assumed that the conditions of these new financing would continue to be similar to those observed in the recent past (see appendix III-B).

The period after which net borrowings and consequently net debt will actually decline depends on the rate of interest, despite the fact that the two essential conditions of decline in net and gross borrowings and consequently in the net debt are, (1) marginal savings rate > the average savings rate, and (2) the marginal savings rate> the product of capital- output ratio and the output growth rate. This is also evident from our estimates detailed out in table 3.3, when the net borrowings as well as net debt experience an explosive path.

The estimates of India's requirements for net and gross borrowings for a period from 1988-89 through 2012-13, are presented below (table 3.5).

Table 3.5:
Requirements of Net and Gross Commercial Borrowings
(Rs. Crores)

Years	Net Borrow-ings	Net Borrowing As % of GDP	Net Borr. As % of Exports	Gross Borrowings
(1)	(2)	(3)	(4)	(5)
1987-88*	1266	0.4	4.9	1946
1991-92	4863	1.2	14.2	7072
1996-97	5706	1.1	11.8	9937
2001-02	10639	1.5	16.4	17722
2006-07	22179	2.4	26.6	35262
2012-13	55651	4.4	51.0	84775
Compound) Growth) Rate %)	16.4	-	-	16.4

Notes: *Actuals

Source: Based on table 3.3.

Data above show that India's requirements of net borrowing would increase from Rs.1,266 crores in 1987-88 to Rs. 55,651 crores in 2012-13. Thus, India's domestic saving would need to be supplemented by external commercial resources to the extent of 4.5 percent of GDP by 2012-13. Consequently, India's balance of payments would have to bear an increasing burden of debt service payments when it is estimated that net commercial borrowing as a proportion of export earnings would reach as much as 51.0 percent of the latter. It may also be pointed out that net borrowings would grow at a compound rate of 16.4 percent vis-a-vis a growth of 5.5 percent in GDP. This reflects a greater burden of debt service payments on the economy.

If repayment obligation is taken into account, it would appear that the situation will turn worse. The estimates of the gross borrowing given earlier show that given the terms of repayment, India would have to borrow in 2012-13, to the extent of Rs.84,775 crores in order to ensure that Rs.55,651 crores worth of foreign resources do, in fact, flow in to sustain the stipulated rate of growth of GDP and to pay the interest charges on net debt.

Thus even on the existing terms, given the level that would be reached by the resource gap, the growth of financing requirements would exceed the possibilities of any conceivable financial scheme for the next twenty five years.

The increase in debt-service payments would also increase India's net debt; and complete independence from foreign commercial resources would be achieved only when the entire outstanding debt is repaid. This requires an analysis of the trend in net debt over the years (table 3.6).

Table 3.6:
Estimates of Net Indebtedness and the Burden of Commercial Debt
(Rs.Crores)

Years	Net Indebtedness	As % of GDP	As % of Exports
(1)	(2)	(3)	(4)
1987-88*	13543	4.1	52.7
1991-92	32476	7.9	94.5
1996-97	58618	11.0	121.3
2001-02	99172	14.2	153.3
2006-07	185712	20.3	222.7
2012-12	419703	33.3	385.0

Notes: * Actuals

Source: Based on table 3.3

The estimates show that India would accumulate a large net debt by 2012-13. This implies not only an increase in the absolute net debt but also the net burden of foreign debt (net debt as a percentage of GDP as also exports by 2012-13: from 4.1 percent of GDP to 33.3 percent of GDP, and from 52.7 percent of export earnings to 385.0 percent of export earnings. This large increase in the proportion of net debt would occur because of a compound growth rate of about 14.7 percent per annum in net indebtedness vis-a-vis 5.5 percent compound growth rate of GDP.

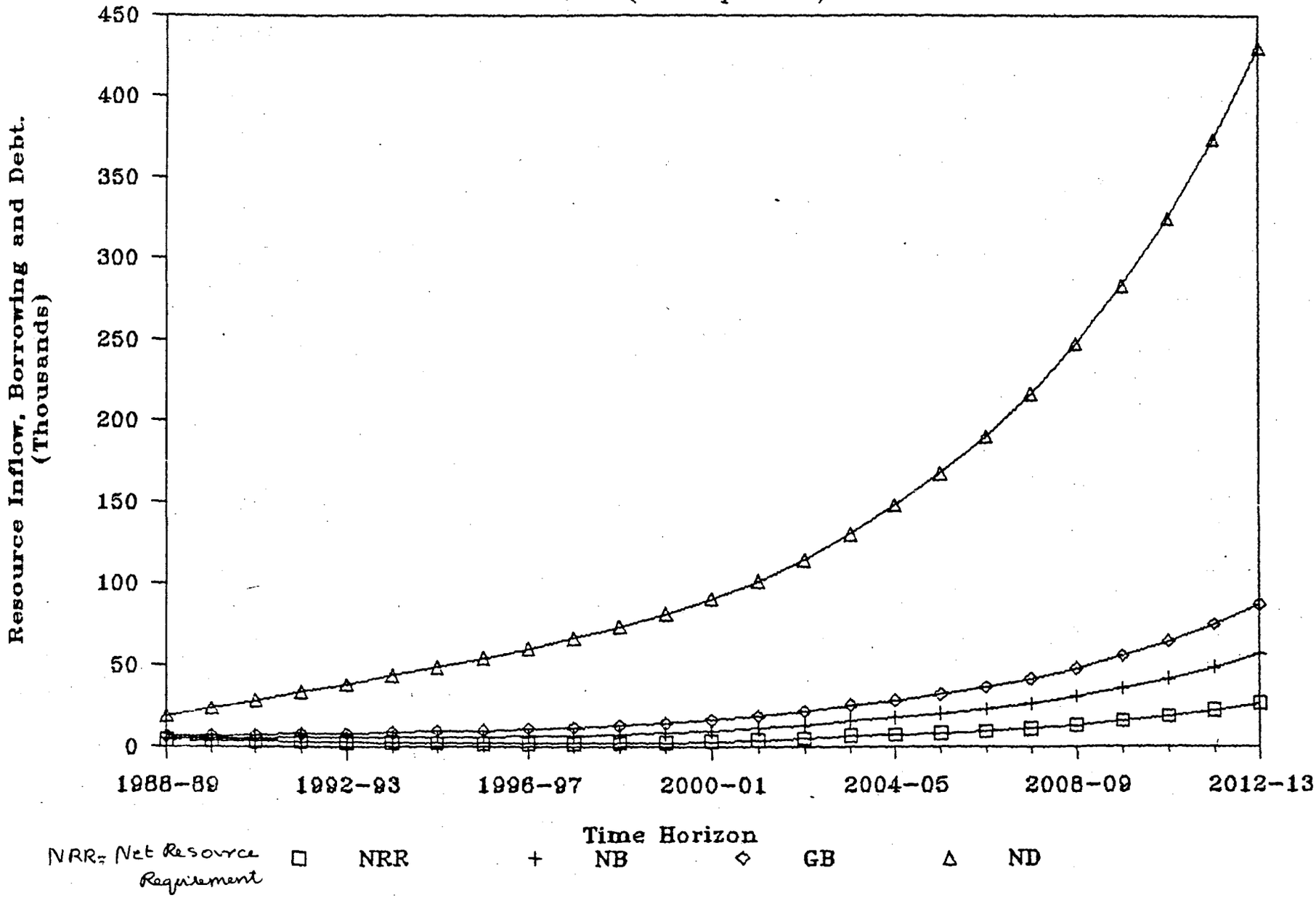
It may also be interesting to see the relationship between net resource inflow, net borrowing, and net debt over the period under consideration. It can be clearly seen from figure 3.1.1 that net resource required to supplement domestic savings moves upwards as the saving - investment gap gradually increases. Also the net as well as gross borrowings and net debt would continue to move upwards thereby indicating an explosive debt path for the economy.

The preceding paragraphs describe the development in commercial debt build ups over the period under consideration. Against this background let us now turn to the evolution of debt service ratio.

Based on the assumptions of the framework of analysis, it may be asserted that the debt service ratios: debt service to GDP, debt service to savings and debt service to exports, continue to increase throughout the period of analysis.

Fig: 3.1.1

Net Resource Inflow, Net Borrowing and Net Debt (Assumption 1).



NRR = Net Resource Requirement

NB = Net Borrowing

GB = Gross Borrowing

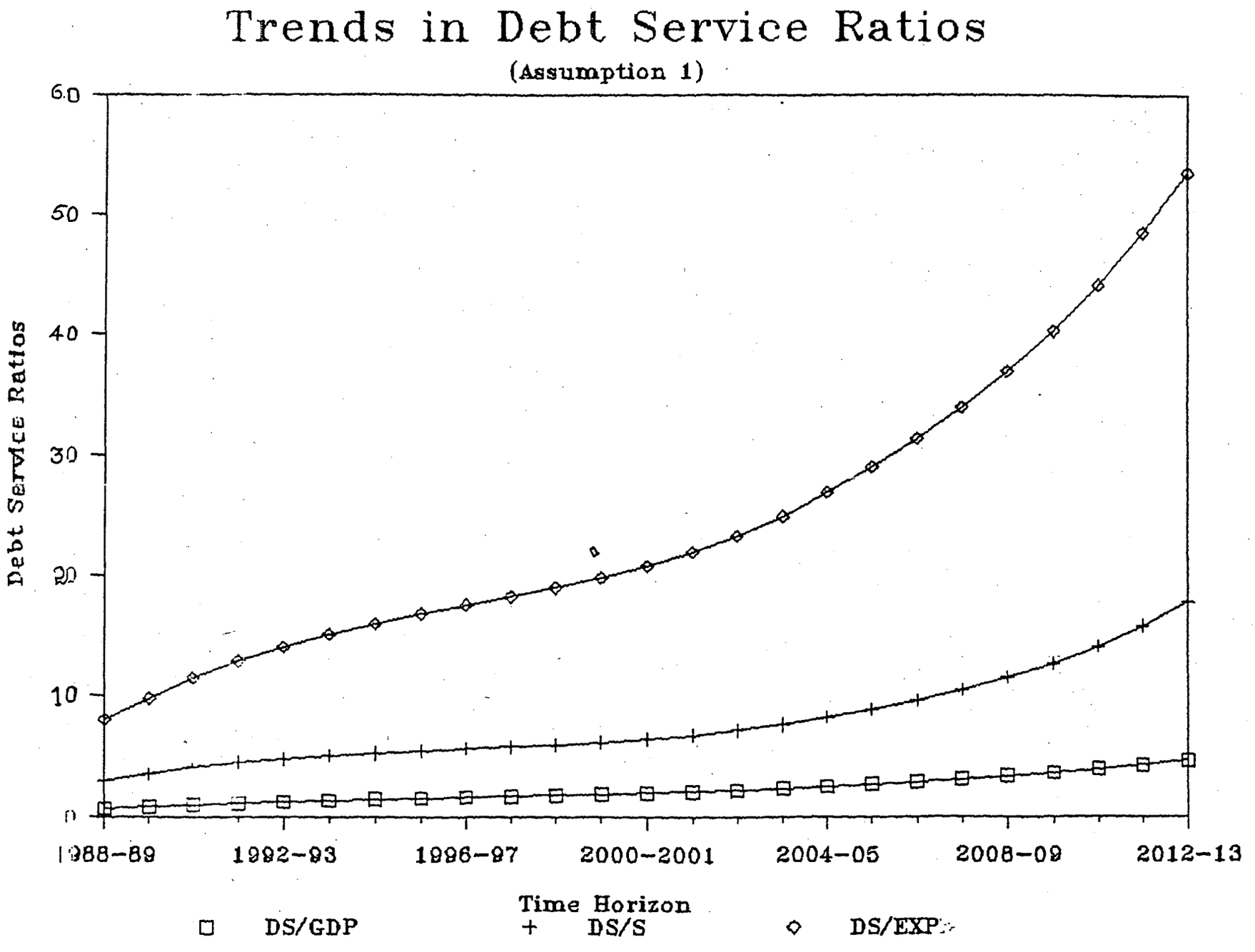
ND = Net Debt

However, the ratios of debt service to savings and debt service to exports would always be higher than the ratio of debt service to GDP. This is true whatever be the rates of growth of exports and savings since exports are only a fraction of GDP and savings are always lower than the magnitude of GDP (figure 3.1.2).

Debt service to GDP would grow from a level of 0.5 percent of GDP in 1987-88 to 4.6 percent of GDP in 2012-13. During the same period, debt service to savings would rise from 2.5 percent to 17.8 percent of total domestic savings; while debt service to exports would increase from 6.4 percent to 53.4 percent of total export earnings. This trend in the debt service ratios indicates increased constraints on the balance of payments situation of the economy.

In examining the evolution of the main variables, the individual projections for which are presented in table 3.3 in the appendix, it is apparent that the continued development within the framework of historic trends would make it difficult to achieve economic growth goal adopted, either because of the improbability of procuring the volume of financing resources required and/or because debt service would create intolerable balance of payments difficulties. Assuming that, at least, the country would be in a position to acquire the required financing externally, the result would be an explosive debt path, when both the net as well as gross commercial borrowings would continue to grow forever.

Fig: 3.1.2


Trends in Debt Service Ratios
(Assumption 1)
60
50
40
30
20
10
0
Debt Service Ratios
1988-89
1992-93
1996-97
2000-2001
2004-05
2008-09
2012-13
Time Horizon
DS/GDP
DS/S
DS/EXP

The foregoing analysis indicates that if the proposed growth is to be attained, alternative course of action must be devised from the standpoint of resource gaps.

SECTION TWO

The preceding section has shown that the projection of net resource flows, net borrowings, and gross borrowings based on historic behaviour results in a nonfinanciable situation because of the heavy volumes of capital required and the possible balance of payments problems entailed. Consequently, policies must be designed to reduce both the resources and financing gaps. This section proposes policies aimed at reducing the resource gaps resorting to increased domestic effort and quantifies their possible effects.

The analysis is based on the assumptions as narrated below in estimating the magnitude of net resource inflow upto 2012-13, and obtaining the resulting net and gross borrowings as well as net indebtedness of the economy (details regarding assumptions have been provided in the appendix III-B.).

1. Gross Domestic Product grows at an annual compound rate of 5.5 percent per annum.
2. The capital- output ratio (gross) is anticipated to grow at a compound rate of 5.8 percent per annum.
3. The base year average savings coefficient is 22.2 percent of the Gross Domestic Product.

4. The marginal rate of savings grows at a compound rate of 39.2 percent from an initial level of 27.5 percent of the Gross Domestic Product. This leads to a growth in the average savings rate which attains a growth of 34.4 percent of the GDP in the terminal year, i.e., 2012-13.

It may be noted that these assumptions are, in fact, based on the trend of assumptions of India's Seventh plan exercises. We have assumed along these lines as these assumptions are in the nature of policy directives. Furthermore, we have made our calculations on the basis of the GDP at 1987-88 market prices values.

Based on the above assumptions, India's requirements of net resource inflow as well as other macro variables and the debt-service ratios have been obtained (table 3.7 in the appendix). The main features are discussed below.

Table 3.8:

Requirements of Net Resource Inflow*

(Rs. Crores)

Years	GDP	Gross Investment	Gross Domestic Savings	Net Commercial Resource Inflow	Column (5) as a % of Col.(2)	(5)a % of Exports
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1987-88	330464	73090	66650	298	0.2	1.2
1991-92	409388	108677	95119	3887	0.9	9.8
1996-97	535053	155968	134504	6439	1.2	8.8
2001-02	699293	223074	195290	8335	1.2	5.6
2006-07	913948	301602	289215	3716	0.4	1.1
2012-13	1260190	415860	468964	-15931	-1.3	-1.6
Compd) Growth) Rate %)	5.5	7.2	8.1	9.3**	-	

Notes: Figures for 1987-88 are actuals.
* At 1987-88 market prices.
** Only upto 2007-08.
Source: Based on table 3.7.

Data presented in table 3.8 reveal that if the GDP grows at the target rate of 5.5 percent, and the economy succeeds in saving 39 percent of additional income and the capital- output ratio is 5.8:1, then India's dependence on net resource inflow can be substantially reduced from 0.4 percent of GDP in 1991-92 to -1.3 percent of GDP in 2012-13. The compound growth rate would be 7.2 and 8.1 percent respectively for gross investment and gross domestic saving over the period under consideration. Consequently, domestic investment would increase from a level of 22.1 percent of GDP in 1987-88 to 33.0 percent in 2012-13. While domestic saving would become 37.2 percent of GDP from a level of 20.2 percent in 1987-88.

The projection results in a significant increase in the coefficient of savings, as compared to that projected according to historic trends in section one. Assuming that India succeeds in making the larger effort programmed, the over-all gap in real resources would be considerably diminished. It is apparent that the resource gap would gradually decline from Rs.1,920 crores in 2007-08 to -15,931 crores in 2012-13. As a ratio of the export earnings, the net resource gap would drop down from 9.8 percent in 1991-92 to -1.6 percent in 2012-13.

The estimates of net resource inflow presented earlier have been integrated with a projection of net as well as gross financing requirements that would be necessary to cover the shortages of domestic funds. It has also been assumed, as in the first projection, that the conditions of the new financing would be the same as those recently obtained by India from

international financing agencies as well as from interenational capital markets.

Table 3.9:

Requirements of Net and Gross Borrowings

(Rs. Crores)

Years	Net Comm. Borrowings	Gross Commercial Borrowings	Column (2) as a % of GDP	Col.(2) as % of Export Earnings
(1)	(2)	(3)	(4)	(5)
1987-88*	1266	1946	0.4	4.9
1991-92	5984	8081	0.9	15.0
1996-97	11789	17139	1.1	16.0
2001-02	19582	30829	1.6	13.2
2006-07	23883	44050	1.5	7.1
2012-13	14484	44899	1.4	1.4
Compound) Growth) Rate %)	10.2	13.4	-	-

Notes: *Actuals.

Source: Based on table 3.7.

As shown in data above, the reduction in resource gaps would lead to a significant decline in net borrowings; these requirements would amount to Rs.14484 crores in 2012-13, 74 percent less than those derived from the first projection.

However, despite the size of the domestic effort programmed, which would result in declining resource gaps throughout the period cumulatively totalling 59 percent less than the original figure, India would continue to require net external financing in rapidly increasing volumes (at a compound rate of 10.2 percent between 1987-88 and 2012-13). This would also lead to a continuing excessive increase in the coefficient of external debt service rising from 0.4 percent in 1987-88 to 1.4 percent towards the end of the period.

The estimates of gross borrowings show that given the terms of repayment, India would have to borrow in 2012-13 Rs.44899 crores in order to ensure continuance in the achievement of the growth goal stipulated in the Approach Paper to the Eighth Five Year Plan without defaulting in the context of debt service obligations. Data also reveal that, the gross borrowing would increase at a compound rate of 13.4 percent. Thus, India would have to borrow in gross terms more in 2012-13 than in 1987-88 in order to ensure the required amount of net borrowing.

The increase in debt-service payments would also increase India's net debt. This is reflected in the following table 3.10.

Table 3.10:

Estimates of Net Indebtedness

(Rs. Crores)

Year	Net Indebtedness	Column (2) as % of GDP	Column (2) as % of Exports
(1)	(2)	(3)	(4)
1987-88*	13543	4.1	38.0
1991-92	32198	7.9	80.8
1996-97	76678	14.3	104.3
2001-02	160168	22.9	107.4
2006-07	275971	30.2	82.4
2012-13	394673	31.3	38.6

Notes: * Actuals

Source: Based on table 3.7.

The estimates show that India would accumulate a large net debt by 2012-13. Not only would the absolute net debt increase, but the net burden of foreign debt (net debt as a percentage of GDP) would also increase from 4.1 percent of GDP in 1987-88 to 31.3 percent of GDP in 2012-13. The same trend holds good in case of net debt as a proportion of export earnings, when it

would rise from 38 percent of total export earnings in 1987-88 to 107.4 percent in 2001-02, and thereafter decline. The large increase in the proportion of net debt would occur because it has grown at a higher annual compound rate vis-a-vis the growth rates witnessed in the GDP as well as in the export earnings.

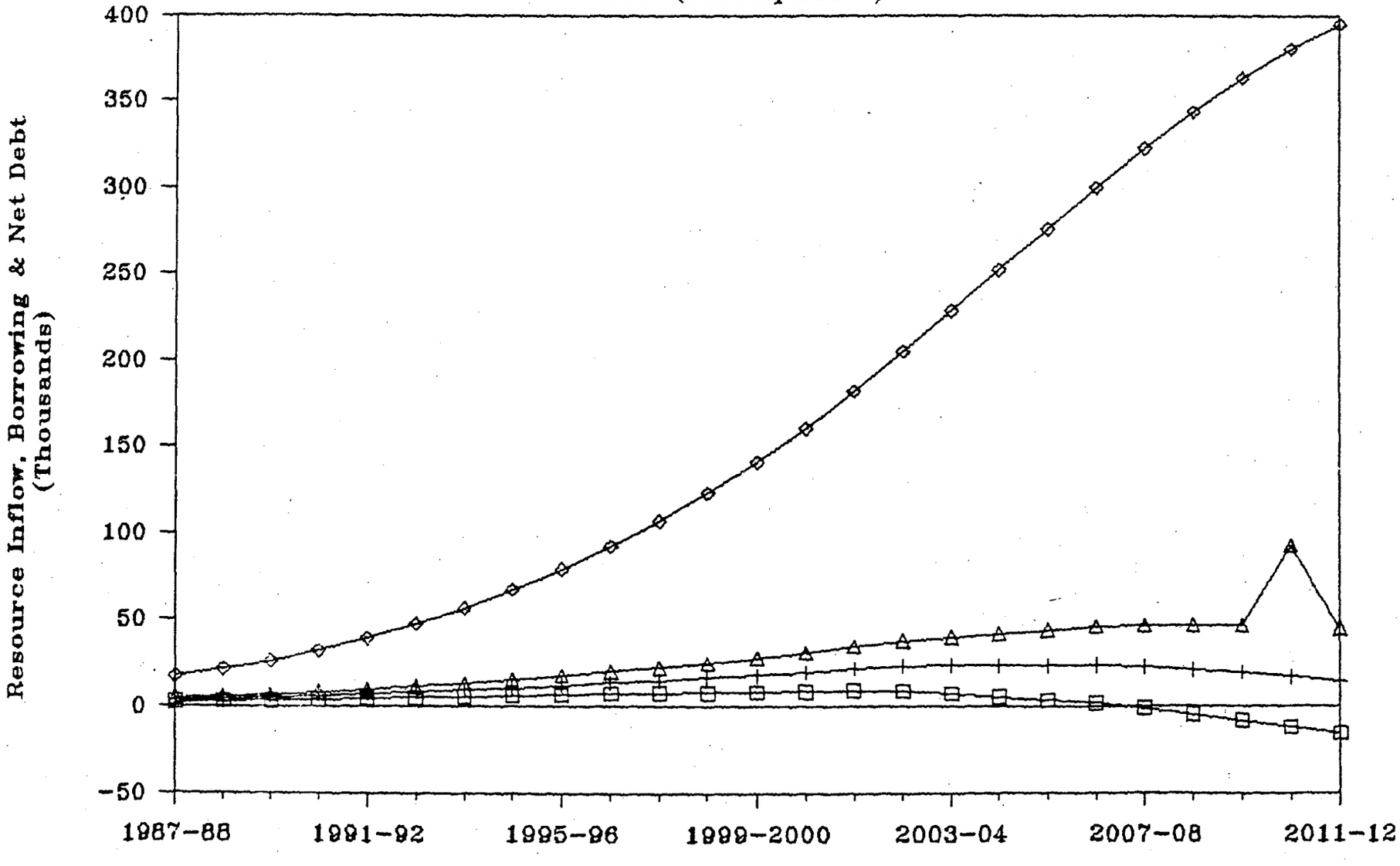
Let us now look into the relationship between net resource inflow, net borrowing, and net debt of India over the period 1987-88 through 2012-13 (figure 3.2.1). It can be clearly seen from the graphical presentation that net resource required to supplement domestic savings approaches the horizontal axis as the saving - investment gap gradually narrows down and becomes negative when the economy starts generating surplus savings. However, net borrowing continues for a longer period of time in order to cover interest charges on accumulated debt, and crosses the X-axis when the savings surplus becomes large enough to pay all the interest charges. Net indebtedness continues until the debt is repaid. Figure 3.2.2 shows the trends in debt-service ratios.

SECTION THREE

Domestic efforts to effect reduction in the requirement of net resources, while a necessary condition, are not by themselves sufficient to influence the external indebtedness. As stated in the previous section, the term structure of the foreign loans also influences the state of indebtedness. This section proposes alternative conditions for the new debt contracts that call for a hardening of current interest rates together with shorter grace periods and worsening in amortisation terms (table 3.11) in the appendix.

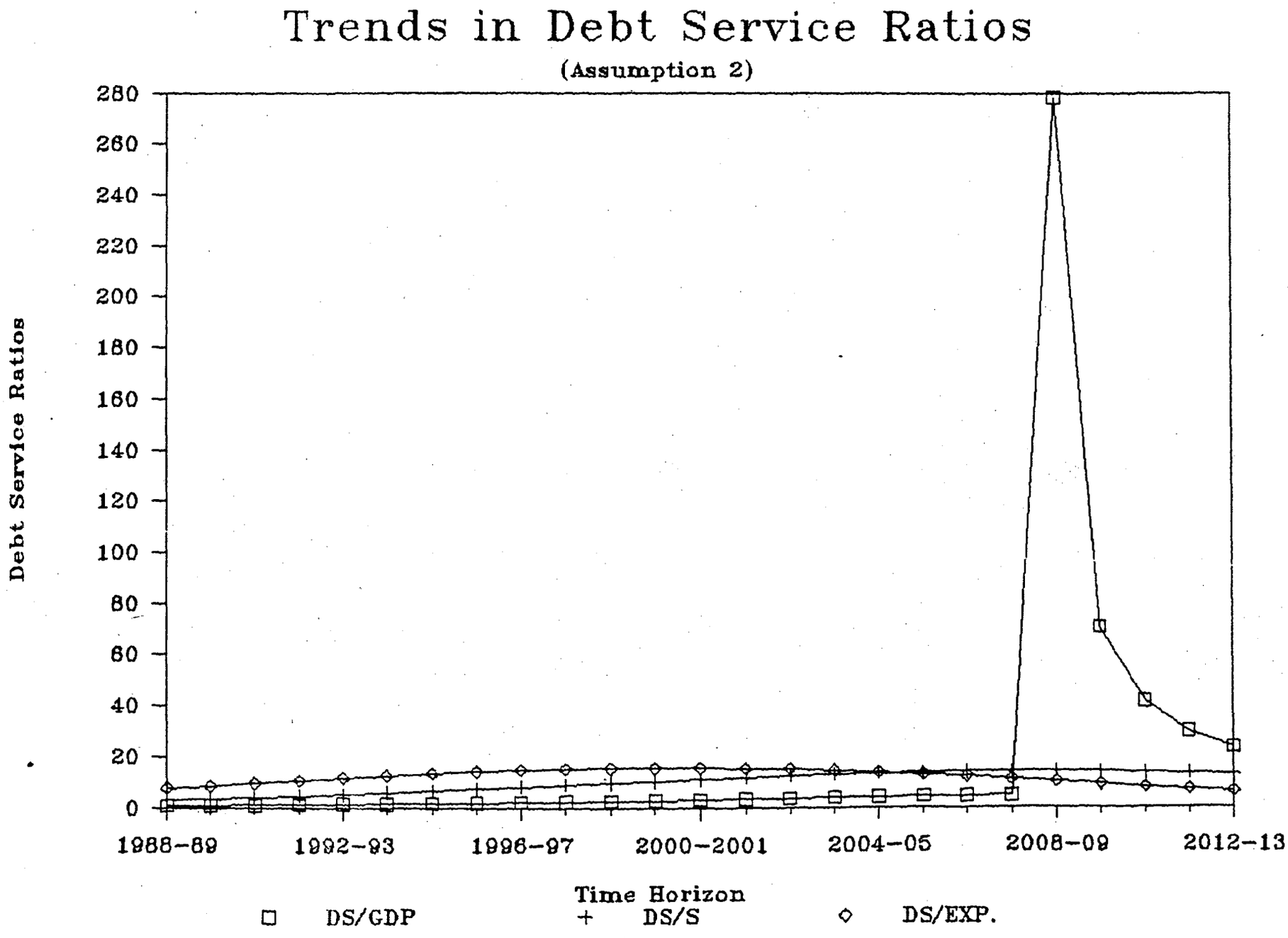
Fig: 3.2.1

Net Resource Inflow, Net Borrowing and Net Debt (Assumption 2)



NRR = Net Resource Requirement
NB = Net Borrowing
ND = Net Debt
GB = Gross Borrowing

Fig:3.2.2


Trends in Debt Service Ratios
(Assumption 2)
Debt Service Ratios
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
1988-89
1992-93
1996-97
2000-2001
2004-05
2008-09
2012-13
Time Horizon
DS/GDP
DS/S
DS/EXP.

The net resource requirements will be taken as obtained in section two. However, the terms and conditions of debt servicing will be assumed to have worsened. This appears reasonable in view of the anticipation of India's increasing resort to commercial borrowings in the coming years for the reasons analysed in chapter two. Moreover, the international credit ratings for India have plummeted recently. This is definitely expected to exert influence on the terms and conditions on which India will be borrowing in future. An expected unfavourable change in the interest rate structure as well as the amortisation schedule will change the net borrowing as well as gross borrowing requirements (appendix III-B).

1. Estimates of Net Borrowing.

As defined earlier net borrowing comprises of net resource inflows and interest charges on existing level of outstanding debt. The following data (table 3.12) present the estimates of net borrowing with the assumption that interest rate structure has worsened.

Table 3.12:
Requirements of Net Borrowings During 1987-88 to 2012-13
(Rs. Crores)

Years	Net Borrowings	Column (2) as % of GDP	Column (2) as % of Exports
(1)	(2)	(3)	(4)
1987-88*	1266	0.4	4.9
1991-92	8583	2.1	21.6
1996-97	18013	3.4	24.5
2001-02	30911	4.4	20.8
2006-07	39752	4.3	11.9
2012-13	30189	2.4	3.0

Notes: * Actuals
Source: Based on table 3.11.

Data reveal that India's requirements of net borrowing would increase from Rs.1,266 crores in 1987-88 to Rs.30,189 crores in 2012-13, at a compound rate of 13.5 percent per annum over the twenty five-year period. Even though requirement for supplementing India's domestic saving ceases by 2012-13, the balance of payments would have to bear an increasing burden of debt-service payments for a considerably larger period compared to the time span required for the debt servicing as envisaged under section two. It may be noted here that the net borrowing, as percentage of GDP, would increase gradually from 0.4 percent in 1987-88 to 2.4 percent in 2012-13. However, the upward trend would have been a subdued one had the term structure been maintained at the observed level during 1976-77 to 1987-88 (as in section two). This, however, does not imply the absence of resilience in the economy to take the burden of debt service payments. It reflects the increasing intensity in the debt service liabilities due to increase in interest charges as well as worsening in repayment schedule of the newly contracted loans.

Table 3.13:
Estimates of Net Indebtedness and the Burden of Debt during 1987-88 to 2012-13

(Rs. Crores)

Years	Net Indebtedness	Column (2) as a % of GDP	Column (2) as % of Exports
(1)	(2)	(3)	(4)
1987-88*	13543	4.0	52.7
1991-92	39854	9.7	100.1
1996-97	112944	21.1	153.7
2001-02	240096	34.3	161.3
2006-07	428143	46.8	127.9
2012-13	644807	51.2	63.1

Notes: * Actuals

Source: Based on table 3.11.

2. Estimates of Net Debt.

The increase in debt service payments would also increase India's net debt. The estimates of net debt have been presented as above.

The estimates show that India would accumulate a larger net debt over the years under consideration. Not only would the absolute net debt increase, but the net burden of foreign debt would also worsen: from a level of 4.0 percent of GDP, net debt would grow to 51.2 percent of GDP in 2012-13. This large increase in the proportion of net debt would occurr because of the differential in the compound growth rate in the net debt and the GDP growth, net debt increasing at a compound rate of 16.7 percent vis-a-vis 5.5 percent growth in GDP. Moreover, the magnitude of net debt would become higher than those witnessed in section two. This would be mainly because of the differential between the interest rate structures that has been assumed as well as a growing share of commercial resources in the total debt stock.

3. Estimates of Gross Borrowing.

We have assumed that the amortisation schedule has worsened. This implies increased amortisation payments. Consequently, the volume of required gross borrowing would increase over the years under consideration. The estimates of gross borrowings are reproduced below (table 3.14).

Table 3.14:
Estimates of Gross Borrowings During 1987-88 to 2012-13
(Rs. Crores)

Years	Gross Borrowings	Net Borrowings
(1)	(2)	(3)
1987-88*	1946	1266
1991-92	11335	8583
1996-97	26367	18013
2001-02	49319	30911
2006-07	73930	39752
2012-13	84275	30189
Compound Rate of growth (%)	16.3	16.7

Notes: * Actuals

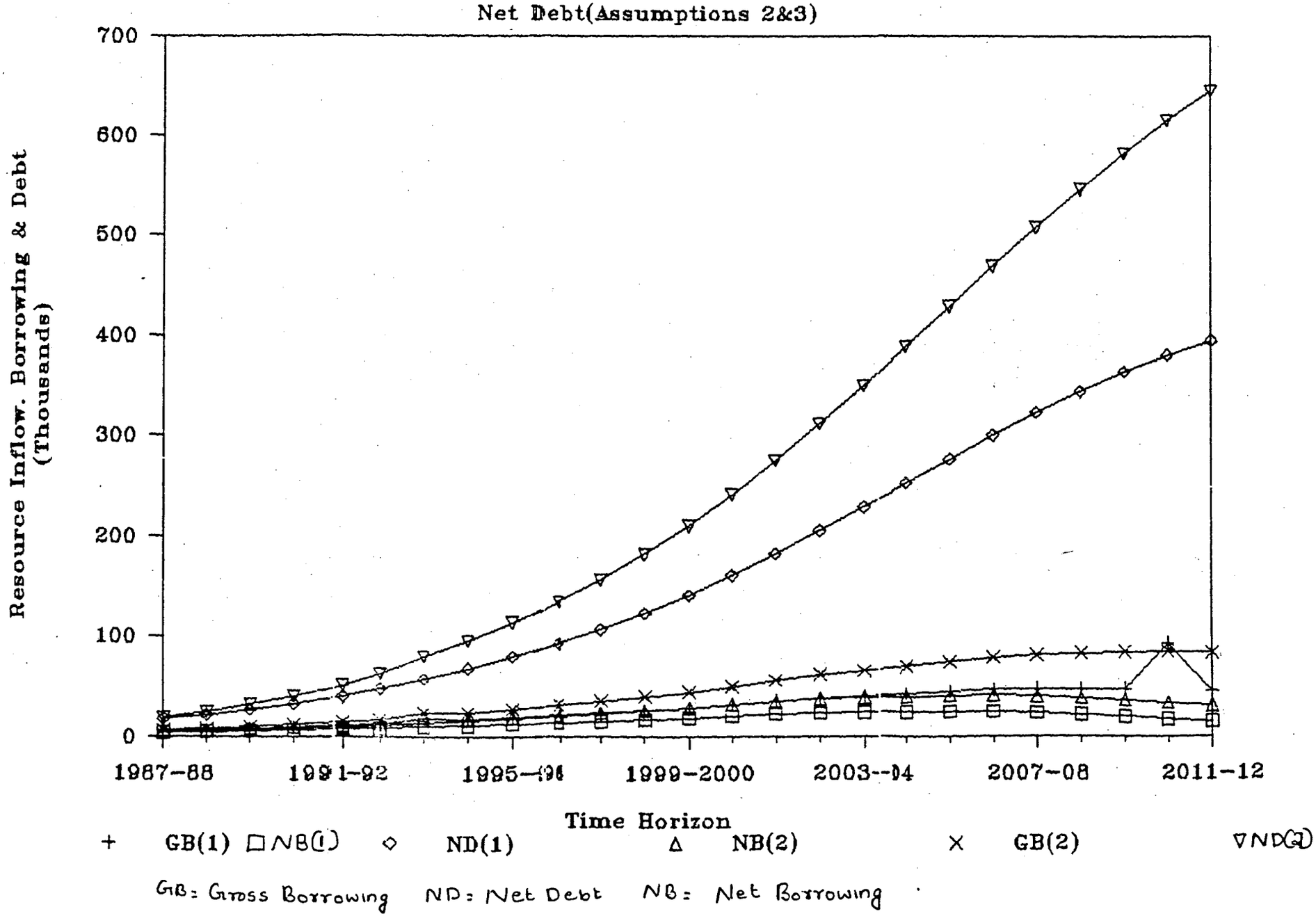
Source: Based on table 3.11.

These estimates show that given the terms of repayment, India would have to borrow in 2012-13 Rs.84,275 crores for sustaining stipulated growth goal over the twenty five-year period. While net borrowings would grow at a compound rate of 16.7 percent per annum, gross borrowings would grow at a compound rate of 16.3 percent per annum. Thus, India would have to borrow in gross terms more in 2012-13 as compared to gross borrowing under previous terms and conditions (section two).

Let us now trace out the relationship between net borrowing, net debt, and gross borrowings under the two term structures as have been envisaged in sections two and three. It can be clearly seen from figure 3.3.1 that all the three curves for changed term structure (as per assumptions of section three) are lying over those in the former case. This is inevitable as the changed condition would undoubtedly impose more debt burden on the economy. Consequently, both the net as well as gross borrowings would take longer time period to decline. Net indebtedness would

Fig: 3.3.1

Net Resource Inflow, Net Borrowing and



also stretch over a longer time span before it reduces to zero debt level. It may also be noted that the change in the term structure would lead to a requirement of higher and increasing amounts of financing, resulting in an evolution of the debt service coefficient undoubtedly entailing serious balance of payments difficulties.

CONCLUSION

In order to appreciate the scope of future external commercial financing requirements as well as the conditions on which such resources must be acquired, we have presented projections of savings gaps, net resource inflows, net as well as gross borrowings, and net debt for India.

In the initial approximation (section one) these projections resulted in an explosive debt path over the long run. The net resoure requirements increased to an unsustainable level. Both net and gross borrowings alongwith net debt followed suit. Consequently, it is anticipated that India would face difficulty in achieving, during the next few decades, a self-sustained minimum growth rate proposed in the Approach Paper to the Eighth Five-Year plan when continuity in the behaviour of existing macro variables, especially savings, is assumed.

The initial approximation referred to in the preceding paragraph also indicates that in order to achieve the growth rate, domestic effort must be intensified appreciably so as to generate sufficient investible resource out of savings and also

mobilising them towards desired directions. Otherwise the external financing required would be extremely high and the amount would increase rapidly throughout the entire period. The same trend would be witnessed in external commercial financing requirements also. These amounts would reach much higher levels than can be expected to be available, as well as prudent to be contracted, even under the best of international circumstances during the next few decades.

Consequently, a second approximation (section two) projected that a sizeable reduction in the external resources and hence external commercial resources required generated a reasonably sustainable debt path. Nevertheless, these requirements were still too high, given prevailing conditions with regard to interest rate, grace and amortisation periods. Hence, it has been maintained that to ensure that debt service burden would not in the future create serious liquidity problems in the balance of payments, acute caution should be exercised.

Moreover, the country would have to limit significantly her external indebtedness on hard conditions. In subsequent years, overall net external commercial resource requirements would gradually decline, although gross financing should remain at high levels in order to meet payments of amortisation and interest on the previous debt.

The analysis on inflow of resources-cum-debt process with worsening in the term structure of debt as well as increased share of these resources in total debt revealed that such a

situation would result in a prolonged debt cycle. The net resource requirements would not be very high and country would be in a position to achieve a gradually declining position of net resource requirements within a short time. But, the process of complete retirement of debt will be delayed due to large scale net as well as gross borrowings and consequently an expanding net debt situation.

The essential feature of this entire exercise is that there would be a need for intensification of domestic efforts towards generation as well as mobilisation of resources, which would make it possible in near future to decrease gradually dependence on external resources.

The quantitative aspects of the projections presented in this chapter are aimed solely at illustrating the conditions if India is to maintain during the next decade and thereafter, the minimum 5.5 percent output growth goal proposed in the Approach paper given the external financing conditions or a worsening thereof. These quantitative aspects may vary because of several circumstances that cannot be anticipated in an exercise of this kind. However, the basic elements of the strategy proposed here would remain valid within the framework of the estimates included in this chapter. Besides the above, these quantitative aspects are subject to inherent limitations applicable to a Harrod-Domar framework as delineated in chapter one. Despite this, given the objective and the choices, the adopted framework alongwith the derived outcomes seem appropriate.

NOTES

1. International indebtedness as reflected by debt service burdens due to the borrowing community.

2. See Avramovic, D., (1958): Debt Servicing capacity and Postwar Growth in International Indebtedness, The John Hopkins Press.

3. Unsustainability generally implies a situation characterised by the absence of those conditions which help in perpetuating the prevalent desirable situation undettered.

4. Mention may be made about the following study:

   Syed Nawab Haider Naqvi (1970): "The Foreign Capital Requirements and External Indebtedness of a Developing Country: A Case Study of Pakistan" in E.A.G. Robinson and M. Kidron (eds.), Economic Development in South Asia, Proceedings of a Conference held by the International Economic Association at Candy, Ceylon.

5. See Simonsen, M.H., (1984): "The Developing Country Debt Problem", P.103. Paper presented at a Conference on International Debt and the Developing Countries, IBRD, Washington, DC.

6. Seminal works on two-gap model are:

   Chenery, H.B. & M. Bruno (1962): "Development Alternatives in an Open Economy", Economic Journal, (March).

   Chenery, H.B. & J. Eckstein (1970): "Development Alternative for Latin America", Journal of Political Economy (July).

Chenery, H.B. & A.M. Strout (1966): "Foreign Assistance and Economic Development", American Economic Review (Sept).

Mackinnon, R. (1964): "Foreign Exchange Constraints in Economic Development and Efficient Aid Allocation", Economic Journal (June).

7. Pertinent works are:

Av ramovic, D. (1964).: Economic Growth and External Debt, John Hopkins Press.

Bardhan,P. (1967): Optimal Foreign Borrowing", in: K. Shell (ed) Essays on the Theory of Optimal Economic Growth (MIT Press, Cambridge, MA).

Op.cit., Simonsen, M.H., (1984).

8. Weisskopf, T.E. (1972): "An Econometric Test of Alternative Constraints on the Growth of underdeveloped countries", Review of Economics and Statistics, pp.67-78, (February).

Blomquist A.G., (1976): "Empirical Evidence on the Two-Gap Hypothesis", Journal of Development Economics, pp.181-193.

9. There exists a large set of literature on the issue of savings as one constraint on development. This particular set questions the view of savings shortage as a constraint particularly in view of dramatic rise in savings rate in 1970s and thereafter, and low growth rate of the Indian economy.

10. Op.cit., Avramovic, D.et.al (1964).

Mikesell, R. (1968): The Economics of Foreign Aid, Weidenfeld and Nicolson.

Table 3.3:

Foreign Resource Requirements For INDIA's Long-term Growth
Based On Historic Data
(The Saving-Investment Gap Approach)

(Rs. Crores)

Years	GDPmp at '87-88 Prices (Y_t)	$Y_{t+1}-Y_t$	Investment (I_t)	Total Savings (S_t)	Net Resource Inflows	Net Commercial Resource Inflows*	Interest**	Net Commercial Borrowings	Amortisation**	Gross Commercial Borrowings	Net Commercial Debt	Total Exports at at'87-88 Prices***
(1)	(2)	(3)	(4)	(5)	(6)=(4)-(5)	(7)	(8)	(9)=(7)+(8)	(10)	(11)=(9)+(10)	(12)	(13)
1987-88‡	330464	18176	-	-	-	-	-	-	-	-	13543@	25675
1988-89	348640	19175	86288	74035	12253	3676	1083	4459	1083	5542	18002	27113
1989-90	367815	20230	93058	81905	11153	3346	1440	4786	1440	6226	22788	29431
1990-91	388045	21343	100312	90306	10006	3002	1823	4825	1823	6648	27613	31845
1991-92	409388	22516	108077	99231	8846	2654	2209	4863	2209	7072	32476	34354
1992-93	431904	23755	116400	108668	7732	2320	2598	4918	2598	7516	37394	36957
1993-94	455659	25061	125305	118597	6708	2012	2992	5004	2992	7996	42398	39656
1994-95	480720	26439	134839	128995	5844	1753	3392	5145	3392	8537	47543	42451
1995-96	507159	27894	145049	139830	5219	1566	3803	5369	3803	9172	52912	45340
1996-97	535053	29428	155968	151058	4910	1473	4233	5706	4233	9939	58618	48325
1997-98	564481	31046	167648	162636	5012	1504	4689	6193	4689	10882	64811	51405
1998-99	595527	32755	180151	174505	5648	1694	5185	6879	5185	12064	71690	54580
1999-2000	628282	34555	193508	186607	6901	2070	5735	7805	5735	13540	79495	57850
2000-01	662837	36456	207799	198871	8928	2678	6360	9038	6360	15398	88533	61216
2001-02	699293	38461	223074	211221	11853	3556	7083	10639	7083	17722	99172	64676
2002-03	737754	40576	239398	223577	15821	4746	7934	12680	7934	20614	111852	68232
2003-04	778330	42809	256854	235852	21002	6301	8948	15249	8948	24197	127101	71883
2004-05	821139	45162	270972	247957	23015	6905	10168	17073	10168	27241	144174	75630
2005-06	866301	47647	285882	259798	26084	7825	11534	19359	11534	30893	163533	79471
2006-07	913948	50267	301602	271281	30321	9096	13083	22179	13083	35262	185712	83408
2007-08	964215	53032	318192	282313	35879	10764	14857	25621	14857	40478	211333	87440
2008-09	1017247	55948	335688	292793	42895	12869	16907	29776	16907	46683	241109	91567
2009-10	1073195	59026	354156	302634	51522	15457	19288	34745	19288	54033	275854	95789
2010-11	1132221	62272	373632	311742	61890	18567	22068	40635	22068	62703	316489	100107
2011-12	1194493	65697	394182	320036	74146	22244	25319	47563	25319	72882	364052	104519
2012-13	1260190	69310	415860	327437	88423	26527	29124	55651	29124	84775	419703	109027

Notes: ‡ Actuals; @ Outstanding Debt at end - March 1988; * 30 percent of amounts as given in column (6);
** At 8.00 percent; *** Total exports consist of exports of goods and services.

Source: National Accounts Statistics, Various Issues.

Table 3.7:

Foreign Resource Requirements for India's Long-term Growth
(Based on Assumptions in Section two).

(Rs.Crores)

Years	GDP_{mp} at 1987-88 prices (Y_t)	Y_{t_1}-Yt	Yt-Y_{t-1}	Investment $I_t = K(Y_{t_1} - Y_t)$	Gross Domestic Savings Ratio x Y_{t-1}	Marginal Savings Ratio x (4)	Total Savings	Net Resources	Net* Commercial Resource Inflows	Interest**	Net Commercial Borrowings	Amortisation**	Gross Commercial Borrowings	Net Commercial Debt	Total*** Exports at 1987-88 prices
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) (6+7)	(9)= (5-8)	(10)	(11)	(12)= (10+11)	(13)	(14) = (12+13)	(15)	(16)
1987-88‡	330464	18176	-		-	-	-	-	-	-	-	-	-	13543@	25675
1988-89	348640	19175	18176	86288	73363	4998	78361	7927	2378	1083	3461	1083	4544	17004	28653
1989-90	367815	20230	19175	93058	78374	5273	83647	9411	2823	1360	4183	1360	5543	21187	31977
1990-91	388045	21343	20230	100312	83641	5563	89204	11108	3332	1695	5027	1695	6722	26214	35686
1991-92	409388	22516	21343	108077	89250	5869	95119	12958	3887	2097	5984	2097	8081	32198	39826
1992-93	431904	23755	22516	116400	95100	6192	101292	15108	4532	2576	7108	2576	9684	39306	44446
1993-94	455659	25061	23755	125305	101281	7649	108930	16375	4913	3145	8058	3145	11203	47364	50402
1994-95	480720	26439	25061	134839	108948	8070	117018	17821	5346	3789	9135	3789	12924	56499	57156
1995-96	507159	27894	26439	145049	117007	8513	125520	19529	5859	4520	10379	4520	14899	66878	64815
1996-97	535053	29428	27894	155968	125522	8982	134504	21464	6439	5350	11789	5350	17139	78667	73500
1997-98	564481	31046	29428	167648	134512	9475	143987	23661	7098	6293	13391	6293	19684	92058	83349
1998-99	595527	32755	31046	180151	143999	11813	155812	24339	7302	7365	14667	7365	22032	106725	96351
1999-2000	628282	34555	32755	193508	155790	12463	168253	25255	7577	8538	16115	8538	24653	122840	111381
2000-01	662837	36456	34555	207799	168954	8928	181402	26397	7919	9827	17746	9827	27573	140586	128756
2001-02	699293	38461	36456	223074	181418	11853	195290	27784	8335	11247	19582	11247	30829	160168	148842
2002-03	737754	40576	38461	239398	195313	15821	209947	29451	8835	12813	21648	12813	34461	181816	172061
2003-04	778330	42809	40576	256854	209965	21002	228224	28630	8589	14545	23134	14545	37679	204950	203204
2004-05	821139	45162	42809	270972	228206	23015	247470	23502	7050	16396	23446	16396	39842	228396	239984
2005-06	866301	47647	45162	285882	247491	26084	267814	18068	5420	18272	23692	18272	41964	252088	283421
2006-07	913948	50267	47647	301602	267774	30321	289215	12387	3716	20167	23883	20167	44050	275971	334720
2007-08	964215	53032	50267	318192	289173	35879	311793	6399	1920	22078	23998	22078	46076	299969	395304
2008-09	017247	55948	53062	335688	311827	42895	339987	-4299	-1290	23998	22708	23998	46706	322677	477923
2009-10	073195	59026	55948	354156	339964	51522	369672	-15516	-4655	25814	21159	25814	46973	343836	577809
2010-11	132221	62272	59026	373632	369716	61890	401059	-27427	-8228	27507	19279	27507	46786	363115	698571
2011-12	194493	65697	62272	394182	401033	74146	434099	-39917	-11975	29049	17074	29049	92909	380189	844572
2012-13	260190	69310	65697	415860	434079	88423	468964	-53104	-15931	30415	14484	30415	44899	394673	1021088

Notes: ‡ Actuals; @ Outstanding Debt at end - March 1988; * 30 percent of amounts as given in column (6);
** At 8.00 percent; *** Total exports consist of exports of goods and services.

Source: National Accounts Statistics, Various Issues.

Table 3.11:

Foreign Resource Requirements for India's Long-tera Growth
(Based on Assumptions in Section three).

(Rs. Crores)

Years	GDP Mp at 1987-88 Prices (Y_t)	Net Resource Inflows	Net Commer-* cial Resource Inflows	Interest**	Net Comm-ercial Borrow-ings	Amortisa-** tion	Gross Commercial Borrowings	Net Commer-cial Debt	Total Exports at*** 1987-88 prices
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1987-88♯	330464	-	-	-	-	-	-	-	25675
1988-89	348640	7927	3567	1192	4759	1192	5951	13543@	28653
1989-90	367815	9411	4235	1610	5845	1610	7455	18302	31977
1990-91	388045	11108	4999	2125	7124	2125	9249	24147	35686
1991-92	409388	12958	5831	2752	8583	2752	11335	31271	39826
1992-93	431904	15108	6799	3507	10306	3507	13813	39854	44446
1993-94	455659	16375	7369	4414	11783	4414	16197	50160	50402
1994-95	480720	17821	8019	5450	17233	5450	22683	61943	57156
1995-96	507159	19529	8788	6967	15755	6967	22722	79176	64815
1996-97	535053	21464	9659	8354	18013	8354	26367	94931	73500
1997-98	564481	23661	10647	9939	20586	9939	30525	112944	83349
1998-99	595527	24339	10953	11750	22703	11750	34453	133530	96351
1999-2000	628282	25255	11365	13749	25114	13749	38863	156233	111381
2000-01	662837	26397	11879	15959	27838	15959	43797	181347	128756
2001-02	699293	27784	12503	18408	30911	18408	49319	209185	148842
2002-03	737754	29451	13253	21128	34381	21128	55509	240096	172061
2003-04	778330	28630	12884	24154	37038	24154	61192	274477	203204
2004-05	821139	23502	10576	27413	37989	27413	65402	311515	239984
2005-06	866301	18068	8131	30756	38887	30756	69643	349504	283421
2006-07	913948	12387	5574	34178	39752	34178	73930	428143	334720
2007-08	964215	6399	2880	37677	40557	37677	78234	468700	395304
2008-09	1017247	-4299	-1935	41245	39310	41245	80555	508010	477923
2009-10	1073195	-15516	-6982	44705	37723	44705	82428	545733	577809
2010-11	1132221	-27427	-12342	48025	35683	48025	83708	581416	698571
2011-12	1194493	-39917	-17963	51165	33202	51165	84367	614618	844572
2012-13	1260190	-53104	-23897	54086	30189	54086	84275	644807	1021088

Notes: ♯ Actuals; @ Outstanding Debt at end - March 1988; * 45 percent of amounts as given in column (6);
** At 8.80 percent; *** Total exports consist of exports of goods and services.

Source: National Accounts Statistics, Various Issues.

APPENDIX III - A

This appendix aims at obtaining the implicit features of the framework adopted which ensure a gradual decline in the foreign resource requirements. The purpose has been served by establishing certain conditions.

Proof of the conditions as given in (2), (3), and (4) have been adopted from Source:

Syed Nawab Haider Naqvi (1970): "The Foreign Capital Requirements and External Indebtedness of a Developing Country: A Case Study of Pakistan" in E.A.G. Robinson and M. Kidron (eds.), Economic Development in South Asia, Proceedings of a Conference held by the International Economic Association at Candy, Ceylon.

Proof (1) has been derived based on the framework and terminology as used in the above cited study.

1. Proof of the condition that Marginal Savings Rate is higher than the Average Savings Rate.

We have

$$R_1 = Y_1 Kr - Y_o \ [S_o + s'r]$$

and $R_2 = Y_2 Kr - Y_1 \ [S_o + s'r]$

The capital inflow - debt model assumes that requirement for net foreign resource inflow will decline. Thus,

$$R_2 < R_1$$

$$= Y_2 Kr - Y_1 (S_o + s'r) < Y_1 Kr - Y_o \ (S_o + s'r)$$

$$= Y_2 Kr - Y_1 Kr < Y_1 \ (S_o + s'r) - Y_o (S_o + s'r)$$

$$= Kr \ (Y_2 - Y_1) < (S_o + s'r)(Y_1 - Y_o)$$

$= S_o (Y_2 - Y_1) < (S_o + s'r)(Y_1 - Y_o)$

$= S_o r Y_o \ (1+r) < S_o r Y_o + s'r^2 Y_o$

$= S_o r^2 Y_o < s'r^2 Y_o$

$S_o < s'$

2. Proof of the condition for net resource inflow to decline

Given that:

$R_1 = Y_1 Kr - Y_o \ [S_o + s'r]$

and $R_2 = Y_2 Kr - Y_o \ [S_o + s'r]$

If net resource inflow to decline, then $R_2 < R_1$, Thus,

$Y_2 Kr - Y_o \ [S_o + s'r] < Y_1 Kr - Y_o \ [S_o + s'r]$

$Kr \ (Y_2 - Y_1) < (S_o + s'r)$

$Kr^2 Y_o (1+r) < Y_o r (S_o + s'r)$

$Kr \ (1+r) < S_o + s'r$

$K + Kr < S_o / r + s'$

$K + Kr < K + s'$

$Kr < s'$

3. Proof of the condition for net borrowing to decline.

Given that

$R_o = I_o - S_o$

$= KrY_o - Y_{-1} \ (S_o + s'r)$

$= Y_{-1} Kr \ (1+r)^2 - Y_{-1} \ (S_o + s'r)$

and, $R_1 = I_1 - S_1 + i(R_o)$

$= Kr \ Y_{-1} (1+r) - Y_{-1} (1+r)(S_o + s'r) + \{KrY_{-1} \ (1+r) - Y_{-1} (S_o + s'r)\}$

If net borrowing to decline, then $R_1 < R_o$. Thus,

$R_1 < R_o$

$= Kr(1+r)^2 - (1+r)(S_o + s'r) + iKr(1+r) - i(S_o + s'r) < Kr(1+r) - (S_o + s'r)$

$= Kr(1+r)(1+r+i-1) < (S_o + s'r)(1+r+i-1)$

$= > Kr(1+r) < S_0 + s'r$

$= > K + Kr < S_0/r + s'$

$= K + Kr < K + s'$

$= Kr < s'$

4. Proof of the condition for gross borrowing to decline.

Given that:

$G_0 = KrY_0 - Y_{-1}(S_0 + s'r) = KrY_{-1}(1+r) - Y_{-1}(S_0 + s'r)$

and $G_1 = KrY_1 - Y_0(S_0 + s'r) + (a+i)R_0$

$= KrY_{-1}(1+r)^2 - Y_{-1}(1+r)(S_0 + s'r) + (a+i)\{Y_{-1}Kr(1+r) - Y_{-1}(S_0 + s'r)\}$

If gross borrowing to decline, then $G_1 < G_0$. Thus

$G_1 < G_0$

$= KrY_{-1}(1+r)^2 - Y_{-1}(1+r)(S_0 + s'r) + (a+i)\{Y_{-1}Kr(1+r) - Y <$

$KrY_{-1}(1+r) - Y_{-1}(S_0 + s'r)$

$= Kr(1+r)^2 - (1+r)(S_0 + s'r) + (a+i)\{Kr(1+r) - (S_0 + s'r)\} < Kr(1+r) - (S_0 + s'r)$

$= Kr(1+r)(1+r-a+i-1) < (S_0 + s'r)(1+r-a+i-1)$

$= K + Kr < S_0/r + s'$

$= K + Kr < K + s'$

$= Kr < s'$

APPENDIX III-B: METHODOLOGY

1. Conceptual framework.

1.1: Net Resource Inflow:

Net Resource inflow has been defined, in the year t, As

$$R_t = I_t - S_t \quad \ldots\ldots \quad (1)$$

$$= K\,(Y_{t+1} - Y_t) - [S_o Y_{t-1} + s'\,(Y_t - Y_{t-1})]$$

$$= KrY_t - [S_o Y_{t-1} + s' Y_{t-1} r]$$

Where, Y = GDP

R = Net Resource Inflow

S = Domestic Investment

K = Marginal Capital - output Ratio

r = The Rate of Growth of GDP

S_o = Gross Domestic Savings Ratio

s' = Marginal Savings Ratio.

We have used a little deviation in the saving - investment model from the usual approach. Usually, the saving-investment gap in year `t' is used as

$$K(Y_{t+1} - Y_t) - [S_o Y_o + s'\,(Y_t - Y_o)]$$

Where both the average and marginal savings are defined in relation to the base year income (Y_o). However, we have defined both these magnitudes in relation to the previous year's GDP (Y_{t-1}). The reason for this deviation is that, on the former definition, the economy tends to save more than is reasonable to expect in the case of a developing country. As a result, the saving - investment gap closes much too early.

1.2: Net Borrowings.

Net resource inflow plus interest on net debt on the previous year gives net borrowing. Thus

$$R_t = I_t - S_t + i \sum_{j=1}^{t-1} F_j \quad .....(2)$$

Where, ΣF_j is the net debt of the previous year and i is the average rate of interest.

1.3: Gross Borrowings.

Loans must also be repaid, which means that total gross borrowing is equal to net borrowing plus amortisation charges on the net debt of the previous year. Thus,

$$G_t = F_t + a \sum_{j=1}^{t-1} Fj \quad ....(3)$$

Where, 'G' and 'a' stand for gross borrowings and the rate of amortisation respectively.

1.3: Net Debt.

Net Debt has been obtained using the following definition.

$$F_t = \dot{R} + \sum_{j=1}^{t-1} F_j \ (i+1) \quad ..... \ (4)$$

where, $\dot{R}$, increase in net debt in year t.

2. Methodology for Section one, Section two and Section three.

2.1: Derivation of External Borrowing Conditions.

We have used the average of terms and conditions prevalent during 1980-81 to 1987-88, as also the trend in annual percentage change witnessed.

2.1.1: For Section One and Section Two.

For interest charges we have based our calculation on time series of the weighted average of the fixed interest rate for the period 1983-84 to 1987-88 (weighted with actual drawal during respective year). The overall average works out to be 8.75 percent during the same reference period. However, in view of the recent declining trend as witnessed in the yearly weighted averages of fixed interest rate, we have used 8.0 percent for the purpose of our calculation. (Table III.1)

Table III.1:

Weighted Average of Fixed Interest Rates

Years	Weighted Average
1983-84	9.6
1984-85	8.9
1985-86	9.4
1986-87	8.9
1987-88	7.4
Overall Weighted Average	8.75

We have estimated requirements for gross borrowing using the rate equal to the average rate of interest. Thus, an amortisation rate of 8.0 percent has been assumed. The reason is the following. It has been witnessed that, of the total debt service payments made so far, payments for interest and amortisation charges share an approximately equal amount. Of late, the interest payments have been capturing a significant portion. However, for the sake of simplicity, we have ignored this aspect.

2.1.2: For Section Three,

For Section three we have used an interest rate as well as amortisation rate equal to 8.8 percent. Even though the trend in fixed interest rate has been a declining one, we have assumed a 10 percent rise in the interest rate. This may be justified in view of the declining credit rating for India.

2.2: Estimaton of the Share of Net Commercial Resource Requirements.

We have estimated net as well as gross borrowing, and net debt only for external commercial resources, even though we have arrived at total net resource gap during any particular year using the adopted framework of saving - investment gap. The procedure that has been followed in apportioning the share of external resources is as under.

For Sections one and two, we have apportioned a 30 percent of total net resource inflow under commercial resources. This is in accordance with the average of trend observed in the context of external commercial resource inflow as a proportion of total foreign resource flow during 1985-86 to 1988-89.

However, in case of section three we have used 45 percent of total resource inflow contracted through commercial sources. This has been obtained using average of the annual percentage change in share of external commercial resources witnessed since mid-1980s.

2.3: Estimation of Major Macro Variables.

The time series for major macro variables have been obtained using the following methods.

2.3.1: Estimation for Section One.

Estimate underlying section one has been based on historical trends. Initially, we started with a targetted growth rate of GDP which is a compound growth rate of 5.5 percent per annum as stipulated in the Approach Paper to the Eighth Plan. We have also used a capital-output ratio of 5.8:1. The capital-output ratio has been assumed to be slightly higher than the trend value of 5.5:1. The justification is as under.

Leaving aside the noneconomic reasons, it has been observed that Indian economy has witnessed a rise in capital- output ratio over the years (Raj, K.N. EPW, October, 1984). One of the factors is definitely the shift in the pattern of industrial development in recent years towards more capital intensive industries. In addition to this, the recent thrust of industrial policy on modernisation, upgradation of existing technology, etc is expected to raise capital- output ratio in near future. Integrating GDP growth rate with capital-output ratio, we have obtained the domestic investment required to sustain an output growth of 5.5 percent (this derivation is according to Harrod-Domar specification).

The trend values for gross domestic savings have been obtained by fitting a log-quaratic equation (for 1988-89 to 2012-13) to the actual observations (1969-70 to 1987-88),

$\ln Y = a+bt+ct^2$.

The log-quadratic equation yielded the best fit for the actual observations with adjusted R^2 (0.99) and DW statistic(1.70).

Growth in exports of goods has been obtained by fitting a linear quadratic equation

$Y = a+bt+ct^2$

to the observed values over the period 1969-70 to 1986-87. The values for adjusted R^2 and DW statistic are respectively 0.98 and 1.68. While projected values for exports of services have been obtained by fitting a polynomial of order three

$Y = a+bt+ct^2+dt^3$

to the observed values over the period 1969-70 to 1986-87 which yielded the best fit with adjusted R^2 (0.98) and DW statistic(2.17)

From data obtained for gross investment and gross domestic savings, following the method as narrated earlier, we could derive the values of net resource inflow over 1988-89 to 2012-13.

3.2: Estimation for Section Two and Section Three

The estimation of net resource requirement underlying ions two and three has been obtained using the assumptions as neated under.

e have been obtained using the growth trend observed in plan cises. Growth in exports has been obtained assuming a ound growth in volume of 15.7 percent per annum. The initial

value has been taken as 10.0 percent as has been witnessed during 1987-89. The assumed compound growth rate has been worked out incorporating the growth rate as projected for volume growth for exports of goods in seventh plan exercises alongwith the recent trend in international trade situation.

Table III.2:

Key Assumptions for Projections of Net Resource Inflow Requirements for 1988-89 to 2012-13*

Items	Upto 1987-88	Upto 1992-93	Upto 1997-98	Upto 2002-03	Upto 2007-08	Upto 2012-13	Compound Growth Rate 1988-89 to 2012-13
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. GDP Growth	5.34	5.50	5.50	5.50	5.50	5.50	5.50
2. Marginal Savings rate	19.61	27.50	32.20	38.05	45.00	53.10	39.17
3. Average savings rate	22.20	22.73	24.32	26.75	30.10	34.40	27.66
4. Capital-output ratio (Gross)	4.5	4.95	5.50	6.00	6.30	6.30	5.80
5. Exports	10.00	11.6	13.4	15.6	18.1	20.9	15.7

Notes:- * Figures have been arrived at based on 1987-88 prices.
** In the preceding five years.
*** In the preceding two years.
**** At constant prices.
Based on 'Seventh Five Year Plan', 1985-90, Vol.1, Planning Commission Government of India.

CHAPTER FOUR

ALLOCATION AND IMPACT OF EXTERNAL COMMERCIAL RESOURCES ON INDUSTRIAL PERFORMANCE

As we have seen in chapter three, the evolution in debt-servicing capacity emphasises that the borrower must witness a rise in their export growth rate. However, majority of the present day borrowers, the developing economies, find import saving through the pursuance of import substituion policy[1] as more feasible and pragmatic an alternative than an export promotion policy.[2] Consequently, it may be observed that the sectoral allocation of foreign resources in these developing economies is biased in favour of industries catering to the needs of the domestic market. A point to be mentioned here is that we are referring to those cases where domestic market acts as a suitable substitute for international market, for providing impetus to growth, as well as foreign exchange savings for additional foreign exchange earnings.

It is, however, evident that any structural shift within the economy, consequent on pursuing a preferred economic policy in the context of industrialisation strategy will have its effect on the composition and growth of exports. Domestic industrial expansion, resulting from an import-substitution policy, will normally lead to an expansion of industrial exports sooner or later. However, the pace of such expansion will depend on the nature of activities undertaken and the intensity of their linkage effect.[3]

Any detailed analysis of sectoral allocation of foreign resources thus assumes importance within the long run perspective of debt-servicing capacity. This is more so, especially when borrowing is contracted on commercial terms. Borrowing involves a contractual obligation of repayment in future. Hence, any such act must be evaluated within the framework of cost-benefit analysis. While cost-benefit analysis at sectoral level emphasises matching costs of borrowings with generation of return flow from utilisation of the borrowed sum, at global level this involves obtaining the evolutionary time path of margin between debt-servicing obligation and debt-servicing capacity. It appears contradictory that while the latter emphasises growth in foreign exchange earnings, the former may imply foreign exchange savings or foreign exchange earnings depending on how the borrower visualises the industrialisation strategy vis-a-vis the world economic set up and national priorities.

Within this perspective it is intended to analyse the trends in the sectoral allocation of external commercial resources in Indian industries over the period 1976-77 to 1987-88.

The 1980s have witnessed India's borrowings on a large scale from international capital markets mainly on commercial terms. However, in the domestic front, there has also been the emergence of a new era of industrial growth during the 1980s. A quantum jump in industrial output coupled with a new accent on modern technology formed the very basis of the scenario. With a reasonable structural change within the manufacturing sector, the base of Indian industry has widened considerably with the public

sector playing the pivotal role in the core sectors of the economy. The private sector has also revealed its potential for massive investment in the context of industrialisation. Large investments in the industries like, consumer and capital goods to a certain extent and mainly intermediate goods, have accelerated the pace of industrial expansion.

Against this backdrop of developments in the 1980s,the attempt is mainly motivated by the fact that commercial resources are injected into the economy through the import of capital goods. Thus, it is an exercise towards decisions regarding effective sectoral allocation of resources in order to achieve the desired result in so far as sustainability in India's international indebtedness in future is concerned.

The chapter has been designed along the following lines. Section one analyses the trend in output and in investment growth in the industrial sector. Section two aim s at discussion on the composition of investment. The main purpose here would be to identify the growth of external commercial resource flows in industrial sector and their direction by industrial activity and within the particular industrial activity, the purpose of using such resources. Finally, section three concentrates on the decomposition of the sources of growth in manufacturing output based on two points of time.

SECTION ONE

The era of accelerated industrial growth of the late 1970s and 1980s has been possible through easing infrastructural constraints, liberalisation of industrial licensing policy and provision of incentives for rapid growth in the capital and stock market alongwith lenient policies pursued in licensing fresh capacity and encouraging new entrepreneurial participation in new ventures. The industrial scene has brightened considerably in the 1980s. **Table 4.1** provides details about trends in subsectoral growth witnessed during 1976-77 to 1987-88 at two digit level of industry groups.

As may be seen from the table (4.1), the subsectors providing the impetus to industrial growth are mainly intermediate and capital goods industries. More specifically, the industries which have major contribution in the growth of the manufacturing sector during the period 1976-77 to 1987-88 are chemicals, (8.92%), non-me tallic mineral products (6.47%), basic metal industries,(4.64%), machinery of all kinds including electrical machinery (10.20%). Besides this, paper (6.26%), rubber (5.64%), leather (5.43%) and food products (4.98%), contributed significantly in the growth rate during the same reference period. The same scenario prevailed between 1980-81 to 1987-88 with almost all the aforesaid industries maintaining the average pace of growth unabated. Exception in this context is basic metal industries (4.07%) which have witnessed an overall decline in the output growth rate during the 1980s. However, none of these industries other than chemicals, electrical machinery, and transport equipment registered a steady positive trend in the growth rate in the 1980s.

The average annual percentage growth rate in the indices of industrial production as depicted by table 4.1 reveals that high growth sectors include some consumer goods and capital goods, and a large proportion of intermediate goods industries.

Let us now look into the degree of industrialisation witnessed over the period under consideration. In terms of composition of manufacturing value added (gross), the intermediate and capital goods industries contributed the major portion over the period 1980-81 to 1987-88 (table 4.2). At the subsectoral level, chemicals and chemical products accounted for 16.02 percent of the value added during the period under consideration.This subsector emerged as a leading contributor with an accelerating trend in its share in value added in the 1980s. The significant upward trend of chemicals and chemical products in the 1980s has been mainly on account of a boom in the performance on all fronts since late 1970s. The spurt in activities in the basic chemicals (i.e. inorganic and organic), the tremendous growth in the performance of the petro chemical industries and increased, near optimum level efficiency and high operating ratios of the oil refineries in refining as well as in other diversified areas of production, all have contributed to a rising trend in its share in manufacturing value added in the 1980s.

Besides chemicals and chemical products,industries which accounted for 10,00 percent or more in the manufacturing value added are textiles and basic metal industries. Textiles has been contributing significantly in the manufacturing value added. On

an average, textiles contributed 14.64 percent over the period under consideration. This trend persisted mainly because of the thriving trade in textiles (as has been witnessed in a significant rise in exports of fabrics, yarns and garments), and the improved performance of the decentralised sector, i.e., powerloom and handloom. However, the contribution of textiles has been steadily declining in the 1980s (barring 1984-86 and 1987-88 when it witnessed marginal increase). The continued decline in the share of the textiles in manufacturing value added in the 1980s has been the resultant of the downward pull generated from the poor performance of the organised sector which has continuously been infested by industrial sickness. The basic metal industries witnessed a decelerating trend during the period under consideration except for the year 1981-82 when it experienced an upward trend in the manufacturing value added. The average contribution of this subsector stood at 10.28 percent over the period 1980-81 to 1987-88. The decelerating trend in the share was mainly because of the performance on the front of ferrous metal which witnessed a negative annual average growth rate upto mid 1980s. However, it may be pointed out here that the share of non-ferrous metal in the value added remained more or less constant over 1980-81 to 1987-88. Besides these, the industries which contributed on an important scale in the manufacturing value added are food products (an average of 8.60 percent) and machinery of all kinds including electrical machinery and transport equipment(7.80 percent) also have contributed on a significant scale. The continued large percentage shares of both machineries and food processing industries in the manufacturing value added were mainly due to

the improved performance of both the subsectors following the incentives provided by the government as well as the steps taken to upgrade technology, implement modernisation scheme and diversify in different directions[4].

The picture that emerges from data on the composition of manufacturing value added during 1980-81 to 1987-88 reveals that there has been an identical growth trend witnessed by a number of subsectors. For example, textiles and basic metal industries together form a group, while food processing and machineries fall into the same category. This, however, has precluded the emergence of a clear shift of structural arrangement within the manufacturing sector during the first half of the 1980s. Despite this, the well established pattern of structural change, as a country witnesses while traversing along the path of industrialisation, is exhibited by the changing shares of end-use products[5]. As India is approaching into a phase of higher degree of industrialisation, the share of capital and intermediate goods in manufacturing value added has tended to grow while that of consumer goods decline **(table 4.2)**.

A noteworthy feature of this industrialisation process has been the key role of the public sector. This is keeping in line with the planned public sector dominance in a number of key industries which is an integral part of India's development strategy in the post independence era. These industries comprise of mainly certain key intermediate inputs industries, such as steel and fertiliser, and capital goods industries such as heavy engineering, electrical equipment, transport equipment and machine tools.

Table 4.3:

Growth of Value Added by Public Sector

Years	Value Added (at Current Prices) (%)	Value Added (at Constant Prices) (%)
(1)	(2)	(3)
1976-77	17.57	10.50
1977-78	9.63	5.10
1978-79	11.16	7.29
1979-80	15.16	4.30
1980-81	19.59	7.91
1981-82	23.52	3.64
1982-83	21.14	10.26
1983-84	16.56	6.48
1984-85	16.35	8.21
1985-86	18.68	9.42
1986-87	18.12	9.41
Average Growth Rate	17.04	7.50

Source: National Accounts Statistics, 1990.

Value added by the public sector enterprises, based on National Accounts Statistics (NAS) data, grew on an average of 17.04 percent during 1976-77 to 1986-87 at current prices; while at constant prices (1980-81 prices), the average growth rate stood at 7.50 percent (table 4.3). Let us now look into the contribution of different constituents of the public sector enterprises over the same reference period. It may be mentioned here that due to non-availability of data at sub sectoral level in National Accounts Statistics, we have collected data from Bureau of Public Enterprises (Ministry of Finance). As these data pertain to central government undertakings only, the total value added statistics in table 4.4 are not comparable with total value added implicit in table 4.3. Of the constituents in the total value added, the contributions that came from steel, chemicals and pharmaceuticals, engineering and transport

equipment, on an average, amounted to more than 35 per cent. This subsectoral contribution, however, continued to decline (except for 1984-86 when it witnessed marginal increase) in the overall manufacturing value during the same reference period. The point to be noted here is that the major share in investment went to steel and the performance of this subsector definitely influenced the performance of the public sector (table 4.4).

Given the fact that during 1976-77 to 1986-87, the public sector contributed 43.05 percent of the total amount invested (data based on National Accounts Statistics); while 44.02 percent of the total amount invested in the manufcturing sector,it does not emerge as a sector holding excessive share in total investment. However, an important feature emerges from the data published by the Bureau of Public Enterprises that of the total investment made by the public enterprises during the period under consideration, steel (18.29 percent), engineering (9.05 percent), and chemicals and pharmaceuticals (13.93 percent) accounted for 41.27 percent of the total. Thus, the basic and infrastructure services accounted for a very large share of the cumulated investment in public sector projects (table 4.5).

Underlying this substantial industrial expansion in the late 1970s and the 1980s was the increased amount of investment. This was inescapable since the basic thrust was on modernisation and upgradation of technology. Moreover, the nature of industries which facilitated this industrial recovery during this phase, as explained earlier, also required investment on a large scale. Keeping in tune with the requirements, the volume of investment in the manufacturing sector increased substantially over the period as has been shown in table 4.6. Of the capital goods

industries, chemical and chemical products accounted for the maximum growth in share (11.59 percent) in total investments into the manufacturing sector followed by machineries of all kinds. The compound growth rate in investments in machineries of all kinds including electrical machineries was 9.21 percent over the years 1979-80 to 1986-87. Metal and metal products grew at a compound rate of 5.73 percent. The subsectors which contributed maximum in the growth of machineries group are electrical machineries and transport equipment.

Table 4.6:
Gross Capital Formation in Manufacturing Sector, 1979-80-1986-87

(Rs. Crores)

Industry Group	1979-80	1986-87	
	Amount	Amount	Growth*(%)
(1)	(2)	(3)	(4)
Food Beverages, etc.	225.09	1099.31	25.43
Textiles	460.46	543.13	2.39
Chemicals and chemical Prod.	1122.49	2418.79	11.59
Metal and Metal products	1180.22	1743.16	5.73
Machinery and machine tools	348.97	546.72	6.62
Electrical Goods and Machinery	273.25	565.72	10.96
Transport Equipment	386.56	756.16	10.06
Miscellaneous	3256.71	6164.37	9.54
Total in Manufacturing	7253.75	13837.36	9.67

Notes: * Based on compound growth rate.
Source: Annual Survey of Industries, Summary Results for the Factory Sector, various Issues.

Besides the above, food and beverages, etc accounted for a large growth in the share of investible resources that were channelled into the manufacturing sector. The compound growth rate in investment in this subsector stood at 25.43 percent over the years.

The growing investment requirements could not be met through internal resources during the period under consideration. The required levels of investments over the period exceeded the mobilisable domestic resources. Consequently, there had been increasing resort to foreign resources on commercial terms, as foreign aid did not increase significantly due to several factors discussed in chapter two. This has substantially changed the character of investment and hence the concern over investment pattern, more specifically of the portion financed by commercial resources, exhibited since late 1970s and particularly in the 1980s.

SECTION TWO

The acceleration in industrial growth, as manifested by a rapid expansion in industrial output in the late 1970s and the 1980s has also been matched by an upward trend in the level of investment within the manufacturing sector. Evidently, such huge volume of investment, as has been witnessed, would not have been possible from internal sources alone in view of an apparently slow growth rate in domestic savings. Moreover, this period of augmented investment had coincided with an escalation in India's international indebtedness, especially those on commercial terms.

As has been shown in chapter three, India's external borrowing is mainly for meeting the import requirement of the targetted investment. True, occasionally the country borrowed for consumption smoothing purposes in the past. But these were only to meet contingencies and were absolutely transitory in nature. The balance of payments transactions indicate that India has mostly been a recipient on capital account, and in recent years, especially in the 1980s, a significant portion of these capital account transactions could be attributed to external commercial resources. However, the inevitability is that external borrowing has helped India to maintain a higher level of investments (vital for sustaining a higher growth rate), than what would have been possible had the country resorted only to domestic savings. This is true both quantitatively as well as qualitatively.

External commercial resources are injected into the economy in the form of physical investible resources, like capital goods, etc. Consequently, it would be worthwhile to have a quick glance at the growth of external commercial resources vis-a-vis that of total investment in the manufacturing sector at the outset. Table 4.7 details out the composition of investment at subsectoral level within the manufacturing sector over the period 1979-80 to 1986-87. It may be pointed out here that due to lack of adequate comparability, data on total investment in the manufacturing sector have been taken for the period 1979-80 to 1986-87 instead of 1976-77 to 1986-87. However, the industrial classification that has been followed in the context of commercial resources is different from the NIC classification. It is based on an entirely different classification devised

within the Reserve Bank of India for serving the purpose of collecting industrywise information. Hence there exists definitional ambiguity.

The industries chosen for table 4.7 at the subsectoral level are in order to maintain comparability with the type of industries into which external resources borrowed on commercial terms, have been invested.

As may be seen from the table 4.7, the magnitude of overall investment increased over the years in the manufacturing sector. Following the same trend, the volume invested from resources borrowed commercially also maintained a steady accelerating pace barring 1983-84 and 1985-86 when the volume invested declined sharply. The decline in 1983-84 kept pace with the decline in net transfer of external commercial resources into the country (net transfer equals gross inflow adjusted for debt servicing payments).

At the aggregate level, external commercial resources formed only a negligible portion till 1980-81, but thereafter took a sharp leap forward when the proportion of the commercial resources to total resources invested reached 7.0 percent and above. This is quite contradictory a situation if viewed in the context that external commercial resources, by principle, form only a component of the residual needed to bridge the gap between required investment and the available investible resources.

Among the industries, at the subsectoral level, the major recipients had been the heavy industries, like transport equipment building units, metal and metal products, and machinery and machine tools. Textiles had been the prominent industry

within the light industries category which received a significant portion of the external commercial resources. The trend in investment points towards the fact that permissions for raising external commercial resources had been mainly granted in those cases which were thought conducive to the fulfillment of the twin broad objectives of industrial policy in India, viz, import substitution and export expansion.

Against this backdrop, let us now look into the sectoral destination of the flow of external commercial resources for the period 1976-77 to 1987-88. Since the industrial policy stance is influenced by the objectives of growth with social justice, an analysis of sectoral distribution assumes importance. As has been emphasised earlier, few borrowers in India can expect to borrow abroad without payment guarantees which are controlled by the government. Thus through the guarantee system, coupled with prior approval etc., the government regulates access to international capital markets, the sectoral destination of external commercial resources, and the type of investment projects to be financed by such resources.

The table (4.8) brings to the fore the anticipated result in so far as the sectoral distribution of resources in concerned. The public sector accounted for a significant portion of the total inflow of external commercial resources. Its share in total utilisation went up from 63 percent during the fifth plan period to 79 percent during the sixth plan period and subsequently came down to 70 percent during the first three years of the seventh plan period. This has been keeping in line with the government policy to channel foreign resources towards priority sectors or

to divert such resources to fill the foreign exchange gaps which would have created key shortages. These public sector enterprises are mainly active in the areas of import substitution, and cater to the needs of providing basic services; hence they are within the priority sectors.

Table 4.8:
Composition of External Commercial Resources by Sector
(In %)

Period	Public Sector	Private Sector	Total
(1)	(2)	(3)	(4)
Fifth Plan	63.43	36.57	100.00
Sixth Plan	79.49	20.51	100.00
1985-86	66.52	33.48	100.00
1986-87	82.91	17.09	100.00
1987-88	61.56	38.44	100.00

Source:- 1. Materials collected for articles "India's International Investment Position".
2. Reserve Bank of India, FCL returns.

However, the decline in the share of the public sector in the later phase coincides with the changed scenario in the loan raising practice in international financial markets and chacterised by the emergence of the financial institutions' dominance in contracting loans in the international capital markets which has been swept over by the securitisation of the loan market in the 1980s from a phase of syndication of the loans during the period immediately following the first oil crisis. The enhanced facilities through the OGL - system may also be held responsible for this. It may be mentioned here that this group of financial institutions cater to the requirements of the private sector manufacturing units who are in need of foreign resources and lend the resources borrowed mostly to the subborrowers comprising of units operating in the private sector. This also explains the growing share of the private sector in

recent years. Now let us turn to the industrial groupwise breakup of external resources over the period 1980-81 to 1987-88 as depicted by the table 4.9.

Due to non-availability of data at disaggregated level, we have not considered the subsectoral analysis for the period 1976-77 to 1979-80.

The table 4.9 reveals the fact that the public sector had been the major recipient of external commercial resources in respect of all the broad categories such as mining, oil exploration, manufacturing, and services, over the years 1980-81 to 1987-88. However, there are variations within the categories. While this sector virtually swept over the allocation of external resources in mining (98 percent) and oil exploration (94 percent) areas, its share was considerably less in the manufacturing (60 percent) and services (52 percent) sectors where private sector competed well in providing a lucrative outlet for investments. However, it may be asserted here that the particular scenario has been the resultant of the preferred industrial policy that has been pursued in an effort to achieve rapid industrialisation through the adequate provision of basic services and intermediate inputs to the private sector and hence to attain the goal of self-sustained economic development.

At the subsectoral level within the manufacturing sector, public sector captured the place of prominence in respect of the areas providing heavy capital intensive goods and intermediate inputs industries, such as basic metal industries, machineries of all kinds, etc. This particular pattern can be explained with reference to the fact that the objectives underlying the creation of a public sector as a provider of basic and infrastructural

services had influenced the resources rationing by the government. Besides this, the late 1970s and the 1980s have coincided with a phase of enhanced activities in the areas of metal and metal products, heavy engineering, electronics, etc especially. Consequently, a very heavy share of the total investment went to the above types of industries. However, light and heavy industries categories, whether catering to import substitution or export expansion, in which market signals play a determining role, the private sector outcompeted the public sector in capturing the share of the external commercial resources. This has happened despite the strict applicability of credit rationing over these resources. Perhaps the criterion of profitability prevailed over other considerations.

Table 4.10 (a):
Gross Inflow of Resources, Industry-wise Distribution, 1976-77 to 1979-80

(In percent)

Industry	1976-77	1977-78	1978-79	1979-80
(1)	(2)	(3)	(4)	(5)
1. Oil Exploration and Power	3.5	4.0	76.9	-
2. Other Manufacturing	31.9	28.2	5.9	1.0
3. Transportation	52.8	55.8	14.2	73.9
4. Services and Financial Institutions	11.8	12.0	3.2	25.1

Note: 1. Figures are expressed as percentages of total flow during the year.

Source: Information based on materials collected for the article, "India's International Investment Position 1977-78 to 1979-80", RBI Bulletin, April 1985.

Now let us turn to the industrywise direction of the flow of external commercial resources during the period 1976-77 to 1987-

88. Table 4.10 (a) presents the direction of the flow over the period 1976-77 to 1979-80.[6]

It may be observed from table 4.10 (a) that the services sector including transportation and financial institutions, and more specifically, the social overhead capital, received the major portion of commercial loans over the years though their share had declined steadily. The heavy share of the services was mainly on account of loans contracted by air transport and shipping companies, the latter was permitted to contract loans on a large scale to invigorate the dwindling industry through modernisation, replacement of the existing capacities, and in certain cases expansion of the existing capacity etc. Next in importance was the manufacturing sector, though its share declined over the period. It may be mentioned that within the manufacturing sector, heavy industries like chemicals, machinery and machine tools, metal and metal products, and transport equipment had received a growing share over the years. This was mainly to finance the import content of manufacturing investment under the aegis of the new emphasis on modernisation, etc. as well as of facilities like continually expanding open general licence. The share of oil exploration fluctuated despite the fact that it is highly dependent on foreign resources.

The breakdown of the sectoral destination of external commercial resources during the period 1980-81 to 1987-88 has been presented in the table 4.10(b).

The table 4.10(b) delineates the pattern as had been witnessed over the period 1980-81 to 1987-88. Services and manufacturing sectors continued to occupy the place of prominence in so far as the share in external commercial resources is concerned. The former's importance, however, declined further in the 1980s when its average share came down from a height of 70 percent in the late 1970s to 39 percent in the 1980s. But the manufacturing sector's average share increased during the 1980s vis-a-vis its share in the period 1976-77 to 1979-80. However, this sector witnessed the maximum yearly fluctuations in its share in total external commercial resources. The particular pattern emerged not due to the fact that social overhead capital lost its importance. But it conceded its share to the growing needs to meet the import requirements of the manufacturing sector in the 1980s given the fact that investment requirements must not be financed out of exceptional finance. One noteworthy feature of the sectoral destination of external commercial resources during the 1980s had been the emergence of the oil exploration sector as a major contender with the services and manufacturing sectors for a share in external commercial resources. From a virtually insignificant sector in the 1970s, oil exploration came to occupy an average share of 24 percent during the 1980s. However, since the mid-1980s, its share started dwindling. The emergence of the oil exploration sector took place in the wake of the oil crunch of 1979. Faced with severe oil crisis and uncomfortable balance of payments constraints due to very heavy import bill coupled with an unimpressive growth in export earnings - even though foreign exchange receipts did not witness a downfall due to comendable performance on invisibles accounts, especially the

inflow through private unrequitted transfers., effective steps were adopted to increase the indigenous oil output. Since this is dependent heavily on imported equipment and technology, a large portion of foreign exchange was required for the purpose. Consequently, there had been a very heavy credit allocation in favour of oil exploration purpose, since this was treated on a maximum priority basis,especially in the early 1980s. The sector which suffered a set back in its share in the external commercial resources due to the emergence of oil exploration was the manufacturing sector. This is further corroborated by the regaining of its position since mid-1980s coincidentally with a decline in the share of the oil exploration sector.

The continuance of the services sector as a major factor in the allocation process is in keeping with the basic thrust of the industrial strategy in providing the infrastructural facilities by the state for industrial growth. The share of the public sector in the external commercial resources as delineated earlier further corrborate this fact.

At the disaggregated level within the manufacturing sector, the basic metal industries and machinery of all kinds, except electrical machinery, received the major share of external commercial resources. This had been the result of exccessive demand due to from imports of plant and machineries which had been made possible through the expanded open general licence scheme. Other heavy industries, like chemicals and fertiliser also accounted for a significant portion of the resources. This was mainly because of the requirement of import content on a

large scale in these industries. Of the light industries, textile is the only subsector which accounted for a significant share in the commercial resources allocated to the manufacturing sector. This was mainly on account of the modernisation process which this subsector has been undergoing in recent years.

The pattern of subsectoral allocation of external commercial resources reflects broadly the industrial policy stance. As has been mentioned earlier, the government completely controls the sectoral allocation of foreign resources. Evidently, in practice, the government approved any contracting of external commercial resources on the basis of investment priority as well as profitability. In an effort to restructure the manufacturing sector of the economy through emphasis on capital intensive heavy and chemical industries, the government assigned excessive priority to those subsectors. This got reflected in allocation of growing share of resources towards these industries through credit rationing. This was equally true in case of allocation of foreign resources which by itself explains the emergence of the pattern of the sectoral destination of these external commercial resources.

The direction of the flow of external commercial resources at the broad sectoral as well as subsectoral level within the manufacturing sector followed a definite purposewise allocational pattern over the years 1980-81 to 1987-88(table4.11). Since details regarding the purposewise allocation prior to the 1980s are not reliable, the analysis has been confined to 1980s.

To begin with it may be asserted that the purposewise pattern in investment within the manufacturing sector in the 1980s has to be visualised in the context of the new emphasis that has been placed on the industrial policy stance since late 1970s in order to facilitate significant rapid industrial growth.

The main thrust of the process of industrial restructuring has been on enhancing the performance of the private sector. Consequently, the liberalisation has implied not only easier access to imports but also provision of greater flexibility to the private sector in respect of its performance. Evidently, the salient features of this process of lending to rapid industrial expansion referred to the following aspects.

1. Enlarging the sphere of operation accessible to the private sector as also increasing flexibility in that sphere through reduction of cumbersome processes.

2. Provision of profitability enhancing stimulus to the private sector such that these will increase the investment and hence speed up the process of overall industrial expansion.

3. Facilitating the process of industrial restructuring through modernisation and upgradation of technology.

A sequence of measures comprising of the system of broadbanding of licences, reendorsement of licensed capacities on the basis of highest levels of production, provision of automatic expansion of manufacturing facilities, the delicensing of certain

selected industries, less rigorous provisions of the MRTP Act, etc. have been adopted. All these measures help the new strategy of industrial growth through (i) enhancing the degree and speed of diversification that can be undertaken by the industries, (ii) increasing the capacity to expand, and (iii) improving the degree of flexibility in the context of proceedures relating to modernisation, upgradation of existing technologies as well as adoption of new ones in an effort to increase the original capacity.

However, the process of industrial expansion through measures of liberalisation has been felt in the areas of increased imports of components, intermediate and capital goods. Consequently, in the 1980s, we have witnessed a rapid growth on the capital account transactions and more specifically in the tremendous growth in the commercial borrowings. It is against this backdrop that the purposewise allocational pattern of the external commercial resources has to be assessed in India's industrial framework.

This new phase definitely has been the result of enhancement of the capacity, modernisation and upgradation of the existing production technology. However, the overall picture (table 4.11) emphasises that modernisation did not receive any priority in so far as the use of external commercial resources is concerned in any of the major sectors. Maximum resources had been invested for expansion of existing activities in the services sector which comprises of construction, utility, transportation, health and other services; while in mining, major share went for

diversification of the activities. Starting of new activity accounted for maximum share in the manufacturing sector. While in oil exploration major investment could be attributed to the other unspecified activities.

Visualising the impact of this new emphasis on industrial policy at the subsectoral level will definitely call for a sector specific analysis. Within the manufacturing sector, the trend at the subsectoral level was as under. The industries which concentrated mostly on expansion of existing activity were machineries of all kinds, and rubber and rubber products. However, industries such as textiles, printing and publishing, food manufacturing, and fertiliser did not lag behind too much when these industries invested almost a-third to a-quarter of the resources for this purpose. Modernisation was undertaken with maximum priority by textiles, and printing and publishing; while diversification of activity was of prime importance in the context of cement industry. Heavy industries like, chemicals and chemical products, metal and metal products, and machineries of all kinds used external commercial resources to the maximum extent for starting of new activity. However, light industries, like textiles also accorded some preferences for starting of new activity. Industries, such as rubber and rubber products, printing and publishing, and fertiliser did not diversify at all by resorting to external commercial resources. Perhaps the nature of the industry explains this phenomenon. Moreover, fertiliser alongwith cement also forms the group which did not opt for modernisation of the industrial activity. Almost all subsectors earmarked a significant portion of these resources for

miscellaneous purposes. Exceptions in this regard were the subgroups textiles, and chemicals and chemical products which invested only a negligible portion for other unspecified purposes.

The preceding analysis unearths the fact that though the magnitudinal impact of external commercial resources is not very prominent, these resources have penetrated into almost all spheres of the industrial activity. More so, the penetration has taken place into those areas which are treated as sectors emanating the growth impulse for the industrial as well as for the entire development process that has taken place in recent years. Inevitably an impact analysis in the context of such resource flows vis-a-vis India's industrialisation process would be of some help. As has been mentioned, the magnitude of such resource flow has been very low, and hence any analysis involving these resources directly will not produce any significant outcome. Hence we have attempted an indirect way of analysis. External resources are required for financing the import content of manufacturing investment. The twin broad objectives of India's industrial policy, i.e., import substitution and export expansion, ultimately imply a shift within the sector leading to increased foreign exchange saving and/or foreign exchange earnings. The impact analysis will involve a decomposition of the output growth of the industries into which external commercial resources have been invested. This will help in analysing how efficently these industries have performed with a view to attain the broad goals of the industrial policy.

SECTION THREE

To visualise the impact of a preferred industrial strategy in terms of the attainment of broad aims of the development policy in the context of the manufacturing sector, it is necessary to analyse the relationship between the observed overall performance of the manufacturing sector as well as the subsectoral growth and the changing pattern of such growth. This implies, within the perspective of the preceding analysis, explanation of the growth in manufacturing sector as witnessed as well as at the subsectoral level over the period 1976-77 to 1985-86 in terms of whether it is caused by growth in (a) domestic final demand (including accumulation of inventory) and intermediate demand; (b) import substitution; and (c) export expansion.

Traditionally, the ideology of industrialisation in India has been strongly attuned to import substitution. However, the presently prevalent thrust in the manufacturing sector is towards achieving a judicious combination of import substitution and export expansion. Essentially, external commercial resources have been borrowed with a view to achieve the broad aims of industrial policy by providing the required imports and thereby helping the path of maintaining a high level of targetted investment. The assessment of the activities undertaken, within a perspective as above, would require isolating the contributory factors of growth. An understanding of the extent to which subsectoral growth in manufacturing output has contributed in furthering the goal of industrialisation, it would be required to derive the contribution of domestic and export demand in output

growth, vis-a-vis an increase in respective manufacturing output. Attempt has been made to explain the growth in manufacturing output using the method presented by H.B. Chenery.[7] The method permits decomposition of the witnessed growth in subsectoral manufacturing output into domestic demand, external demand, and import substitution. This gives three elements in the subsectoral growth equation and hence shows the relative importance of each source of growth over the period under consideration.

The change in gross domestic output of a subsector of manufacturing during a given period is ΔGO. It is calculated using the following formula.

$$\Delta GO = [\Delta GO + \Delta M - \Delta X] \; {}^{GO_1}/_{GO_1 + M_1} + \Delta X \; {}^{GO_1}/_{GO_1 + M_1} + GO_2 - {}^{GO_1}/_{GO_1 + M_1} [GO_2 + M_2] \ldots\ldots\ldots \quad (4.1)$$

Where,

ΔM = change in imports

ΔX = change in exports

GO_1 = gross output in period1, (i.e., the reference year)

GO_2 = gross output in period$_2$ (i.e., the terminal year)

M_1 = Imports in period^1

M_2 = Imports in period$_2$

$GO_1 + M_1$ = Total supply in period$_1$

$GO_2 + M_2$ = Total supply in period$_2$.

Thus, it is a two-time point analysis. The equation above has been used to isolate the changing structure of industrial output both at aggregated manufacturing sector as well as disaggregated subsectoral level. Table 4.12 summarises the results of the decomposition exercise.

Within the manufacturing sector, it appears that growth in

domestic demand, both intermediate as well as final demand, accounted for major part of the total expansion of output over the period. While the trade adjustement, i.e., export expansion plus the import substitution, caused mere change in the output. Of the total trade adjustment, the share of export expansion had been outweighed by negative impact of import substitution. This implies that over the period under consideration imports rose faster than domestic production of the related industry. However, this overall impact of import substitution has to be assessed in the context of specific subsector of the manufacturing industries.At the disaggregated subsectoral level, even though the decomposition exercise led to the same broad generalisation,there existed variation in the impact of trade adjustment. External demand was the main source of the portion of rapid growth, caused by the trade adjustment, in case of light manufacturing industry. In the expansion of heavy industry, negative impact of the trade adjustment, due to negative import substitution, was prominent.

The table (4.12) suggests that seven subsectors of manufacturing experienced negative import substitution; of which five belong to the heavy industry group, such as rubber and rubber products, chemicals, cement, basic metal industries, and manufacture of machinery of all kinds. Besides, these are also the subsectors with very insignificant impact exerted by the growth in external demand; and in two cases; paper and paper products, basic metal industries, external demand had negative impact. However, it may be mentioned here that these industries have not been earmarked for the purpose of export promotion. Rather they are identified for import substitution. The

excessive growth in the final demand in respect of paper and paper products which include printing and publishing also had been responsible for the particular result; while growth in intermediate demand coupled with poor performance in respect of ferrous metals might be attributed to the typical characteristic of the sources of growth in case of basic metal industries.

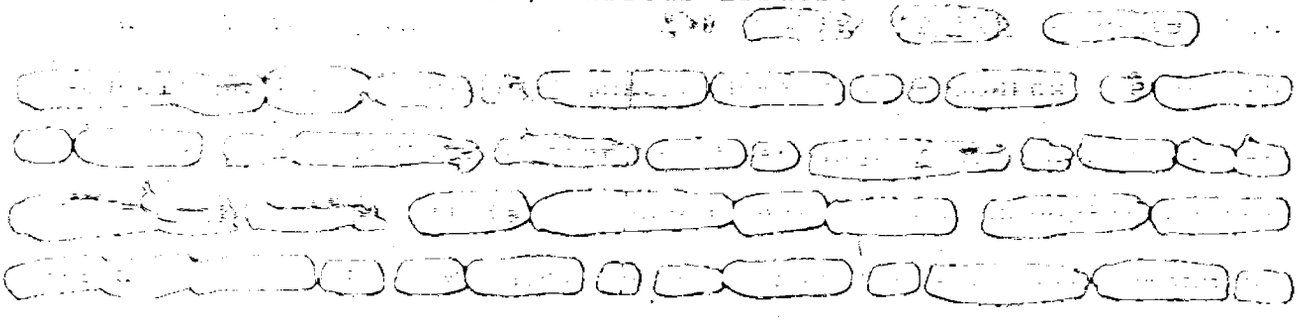
Table 4.12:
Decomposition of Growth in Output of Manufacturing Subsectors, 1976/77 - 1985/86

(Percentage)

	Relative Contribution of:			
Industry Subsector	Domestic Demand	External Demand	Import Substitution	Statistical@ Discrpancy
(1)	(2)	(3)	(4)	(5)
Light Industry Food Products	73.11	10.79	16.10	15.79
Textiles	84.17	14.26	1.56	14.42
Paper and Paper Prod.	109.88	-0.003	-9.88	17.83
Leather and Leather Prod.	43.34	58.21	-1.58	130.30
Rubber and Rubber Prod.	100.11	0.43	-0.54	1.52
Chemicals	107.01	2.11	-9.12	18.30
Fertiliser	82.11	-0.20	18.10	1.34
Cement	114.90	0.94	-15.85	13.36
Basic Metal Industries	106.91	-0.57	-6.34	19 90
Electrical Machinery	97.13	1.41	1.46	5.89
Manufacture of Machinery of All Kinds	107.32	1.59	-8.91	53.2

Notes: @ Statistical discrepancy in matching ASI gross output data with D.G.C.I.& S trade data

Source: 1. Annual Survey of Industries, Various issues
2. D.G.C.I. & S., various issues.



A quick glance into the table (4.12) reveals the overwhelming importance of domestic demand as a source of growth in Indian manufacturing sector, [illegible] It is contended that strong domestic market pull has caused the low level of the impact of external demand on output expansion. The pressure of domestic demand improves the relative profitability of sales in the domestic market as compared to exports and reduces the surplus available for export[8].

Despite their individual differences, the following generalisations apply to the manufacturing subsectors.

Leather and leather products, textiles and food products are the examples catering to the objectives of export promotion. Domestic demand lagged behind to a certain extent, while export demand was an important source of a modest continued expansion.

Similarly, machinery, chemicals, and basic metal industries provide the examples of industries identified for import substitution. They owed almost fully to the growth in domestic demand for their expansion. However, despite continuous emphasis, as manifested through the industrial policy decisions, these industries exhibited negative impact of import substitution in the late 1970s and the 1980s.

Thus, it may be asserted that the negligible impact of trade adjustment vis-a-vis the effect of the domestic demand expansion in the manufacturing sector has been mostly the result of

negative import substitution, which in certain cases assumed important proportion thus nullifying the effect of significant export expansion impact, witnessed especially in the context of consumer goods and light industries categories.

CONCLUSION

External commercial resources has entered into the industrial sector in the form of physical resources (capital goods, components, intermediates). Of course, in certain instances these resources have been used to import technical know-how. However, the incidence of such cases are very low.

External resources are sought, in the Indian context, to finance the import content of the investment projects. The motive behind raising commercial resources has not been any different than this. The trend analysis shows that these resources have flown into services sectors mostly in shipping and aviation in the 1970s and 1980s. However, the overwhelming importance of the services sector has declined steadily, particularly markedly in the 1980s. On the other hand, manufacturing sector which received relatively less importance in the allocational matter in the initial phase has assumed importance in the 1980s. This has been inescapable, if viewed in the context that the recent thrust in the industrial restructuring process has been to revitalise the slowly progressing industrial sector by means of invigorating the manufacturing sector through creaton of space for modernisation, upgradation of the existing technology and, if necessary,

abandonment of the existing obsolete technologies. This initiative, coupled with import liberalisation, have led to the increased import demand for components, and capital goods. Besides these two sectors, mining had also been a source of investment in the 1970s. However, in the 1980s it has faded almost totally. One major feature of the resource distribution according to major category in the 1980s has been the emergence of the oil exploration sector as a major contender for external commercial resources. This was an outcome of the second oil crunch, as an aftermath of which the country faced with either a continued unfavourable balance of payments position due to heavy import bill or to reduce the growth rate of the economy as the feasible alternative. As neither of the alternatives seemed palatable, the country instead went ahead with the plans for creating a larger base for indigenous oil output. Since this oil exploration sector is dependent heavily on imported technology and equipment, a large portion of the external commercial resources was naturally allocated to that sector over the early 1980s. This allocational trend, however, has been facing a declin ing trend since mid 1980s.

The trend analysis also revealed that the lion's share in the external commercial resources has gone to the public sector. This has been keeping in line with the policy stance that permissions for borrowing abroad be granted especially in the cases which are in priority areas, the shortage of foreign exchange in which cases will jeopardise the growth process either through reduction in supply of basic and infrastructural facilities or through uncomfortable balance of payments positions

due to rising import bill. Moreover, it has also been the policy stance that large private sector units in the manufacturing sector having export promotion potential must also be provided with the supply of foreign exchanges. However, in recent years, the share of the private sector in the external commercial resources have been increasing steadily. This is anticipated in view of the new emphasis on industrialisation process.

External commercial resources have penetrated into almost all the subsectors of the manufacturing sector. Resources have been invested into the heavy engineering, intermediate inputs, light and medium engineering, and consumer goods in that sequence of importance. The pattern is not an unanticipated one.

Regarding the purposewise allocation, a point deserves special mention. The recent phase of industrialisation has been one which is characterised by emphasis on modernisation, diversification, and expansion of the existing activity. However, at the level of major categories, such as mining, manufacture, oil exploration, and services, none has considered modernisation with major importance while resorting to external commercial resources. At the subsectoral level within the manufacturing only light and medium engineering industries, like textiles, printing and publishing, accorded highest priority to the modernisation activities. At the aggregated level, the maximum share was allocated for miscellaneous activities, while expansion of the existing activities as well as starting of new activity accounted for 21 percent each. Diversification assumed the next importance when 15 percent of the resources was

attributed to it. At the disaggregated level, expansion of the existing activity and starting of the new activity were taken with the maximum priority when 29 percent and 26 percent of the total resources were spent on these activities respectively. Almost a quarter of the resources at the subsectoral level had been spent on other unspecified activities.

The degree of penetration of external commercial resources within the manufacturing sector has reached to such an extent that curiosity about the impact of such resources on the performance of these industries seems natural. With this end in view, a decomposition of the sources of output growth has been attempted. The result reveals that the major source of expansion in output in respect of all these industries has been the pull of domestic demand and not the favourable effect of trade adjustment. The only industry which witnessed a positive trade adjustment effect (either export promotion or import substitution or both) larger than the domestic demand pull is the leather and leather products. Besides this, food products and textiles experienced a relatively large effect on account of trade adjustment. A disquieting feature resulting from the decomposition analysis is that most of the heavy capital goods and intermediate inputs industries had negative import substitution effect.

It may be contended here that inflow of external commercial resources is linked up with large amount of debt service obligations. Hence, prudence in the utilisation of such resources demands that the use of these resources must generate

sufficient foreign exchange either through savings by way of reducing import bill or through earning additional resources by promoting the exports. No doubt external commercial resources have been utilised along the desired directions keeping in line with the priorities as envisaged in the industrial policy stance. But viewed in the context of generating debt servicing capacity, the method of utilisation or the thrust on enhancement of performance of the industries leaves much to be desired.

NOTES

1. Import substitution consists in replacing an imort by local production of the same type of goods, for a homogenous sector or product. There is import substitution if the import coefficient of this product diminishes.

   (i) In relative value, import substitution is the variation of the import coefficient of the product; or
   (ii) in absolute value, import substitution is the decrease of imports which is a result of that lower coefficient.

   At global level, import substitution in relative terms, is the difference between the value of the average import coefficient which would have prevailed if the import coefficients by product had been unchanged and the actual value of import coefficient; and in absolute value, import substitution is the difference between the value of the imports which would have prevailed if the import coefficients by product had been unchanged and the actual value of imports.

2. Export promotion implies adoption of promotional policies for expanding trade, especially, manufactured trade.

3. A linkage or linkage effect was originally defined as a characteristic, more or less compelling sequence of investment decisions occurring in the course of industrialisation and more generally, of economic development.

   Linkage effect may be of two types: backward and forward. When an industry within the economic system buys inputs that can be made by other domestic industries instead of being imported, the effect that this inducement has on other domestic industries is called backward linkage.

   When an industry sells some or all of its output to other domestic industries for use in production instead of exporting it or selling it as a finished product, the effect that this inducement has on other domestic industries is called forward linkage.

See 1. A.O. Hirschman (1958): The Strategy of Economic Development, Yale University Press, N.H., Conn.

2. B. Higgins (1968): Economic Development, W.W. Norton & Co. Inc., N.Y.

4. UNIDO (1990): India New Dimensions of Industrial Growth, Basil Blackwell, Oxford, U K pp.45,66-79.

5. Ibid., UNIDO (1990), p.19.

6. Due to non-availability of comparable classification of the industries, data have been presented separately for the period 1976-77 to 1987-88 (1976-77 to 1979-80, and 1980-81 to 1987-88).

7. See H.B. Chenery (1960): "Patterns of Industrial Growth", AER (Sept).

8. See, Op.cit, UNIDO, (1990).

Table 4.1:

Subsectoral Growth Trends, Selected Manufactures, 1976-77 to 1987-88

(In percentage)

Industry Group	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	Average Annual Growth%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Manufacturing	9.19	4.10	7.65	-2.13	3.73	7.90	1.39	5.67	7.96	9.70	9.35	8.22	6.06
Food Products	4.74	10.12	12.97	-11.77	8.46	13.50	14.10	-6.49	-0.91	4.67	6.05	4.28	4.98
Beverages & Tobacco	30.69	12.38	7.17	-13.48	12.11	4.30	3.36	-3.06	6.89	0.36	-12.13	-13.81	2.90
Textiles	4.22	1.38	3.41	9.08	3.16	-2.63	-3.59	4.83	5.76	2.63	-6.84	-0.74	1.72
Leather and Leather Prod.	-9.50	-8.36	-18.98	10.73	18.20	28.10	-21.94	16.30	20.12	21.12	5.02	4.39	5.43
Wood & Wood Products	13.00	10.31	-5.25	15.73	-29.58	53.20	-0.13	9.48	29.25	3.09	10.26	-34.30	6.26
Paper & Paper Products	4.22	1.19	5.65	2.56	8.70	8.30	-2.59	3.60	20.68	12.59	9.76	2.02	6.39
Rubber & Rubber Products	4.51	5.24	8.31	0.82	1.42	19.20	-0.17	14.37	8.16	3.94	-2.35	4.28	5.64
Chemicals & Chemical Prod.	16.80	7.13	8.19	-1.31	2.25	16.90	3.68	8.09	9.01	8.05	13.74	14.47	8.92
Non Metallic Mineral Prod.	16.64	3.48	3.58	1.68	3.09	6.70	-2.81	18.12	12.98	13.66	1.91	-1.37	6.47
Basic Metal industries	19.68	33.17	-25.20	-4.48	-0.10	-	4.20	-8.73	12.83	9.04	8.38	6.94	4.64
Metal Products	6.12	5.76	12.05	2.06	-8.34	-5.40	-4.97	-2.00	19.18	9.24	9.24	4.10	3.92
Machinery except Electrical	7.22	6.23	15.28	-1.48	7.64	11.10	0.81	6.79	6.69	2.04	8.91	-1.83	5.78
Electrical Mach.	2.14	3.22	14.61	-0.98	10.01	3.90	11.55	23.47	3.98	34.81	26.97	31.61	14.61
Transport Equip.	1.38	-1.15	3.93	-1.02	3.20	8.10	2.96	10.87	6.65	3.19	6.70	5.11	4.61
Misce.	4.62	24.63	12.43	-3.96	-10.31	49.20	3.89	-32.52	17.40	24.35	54.16	15.59	15.04

Note: Growth rates are based on indices of industrial production (1980-81 = 100).

Source: Reserve Bank of India Bulletin, various issues.

Table 4.2:

Composition of Manufacturing Gross Value Added (1980-81 prices) 1980-81 to 1987-88

(In percent)

Industry Group	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Manufacturing	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Food Products	6.69	8.16	10.02	9.76	9.09	8.83	8.25	8.05
Beverges and Tobacco	1.95	1.91	1.80	2.89	2.25	2.09	1.95	1.57
Textiles	19.51	16.87	15.01	9.27	13.80	14.23	14.65	13.78
Wood and Wood Products	0.56	0.52	0.48	0.53	0.47	0.45	0.45	0.28
Paper and Printing etc.	4.16	4.20	3.53	3.55	3.84	3.44	3.87	3.69
Leather & Leather Prod.	0.61	0.69	0.69	0.73	0.79	0.73	0.68	0.66
Rubber & Rubber Prod.	4.86	4.22	5.86	5.41	5.77	7.84	7.32	7.13
Chemical & Chemical Prod.	14.67	16.10	15.18	16.33	15.67	15.15	16.94	18.14
Non Metallic Mineral Prod.	3.75	3.71	4.23	4.20	4.90	4.83	4.51	4.15
Basic Metal Indus.	12.31	12.68	10.65	10.09	9.30	9.48	8.85	8.85
Metal Prod	2.87	2.69	2.48	2.42	2.39	2.38	2.40	2.34
Machinery of all kinds except Ele.	7.79	7.70	7.50	7.38	8.25	7.78	7.26	6.67
Electrical Mach.	7.26	6.89	8.06	7.42	8.63	8.00	7.46	9.19
Transport Equip.	7.97	8.33	8.54	8.15	8.31	7.70	8.00	7.85
Miscellaneous	5.05	5.34	5.96	6.05	6.54	7.08	7.41	7.64
Total@ Manufacturing (in Rs.Crores)	12640	13683	15026	17197	18627	20100	21528	23019

Note: Total may not add up due to rounding off. @ Gross Value Added including Bank charges.

Source:National Accounts Statistics, C.S.O., Government of India, various issues.

Table 4.4 :

Value Added by Public Sector Enterprises (Producing goods), 1976/77 to 1986-87

(In percent)

Industry Group	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87
1	2	3	4	5	6	7	8	9	10	11	12
Steel	20.29	15.71	12.64	11.15	10.93	8.97	7.54	7.38	8.95	12.49	9.61
Minerals and Metals	5.12	5.17	5.57	4.84	5.42	4.01	3.88	3.91	3.97	4.15	4.26
Coal	15.27	12.77	16.56	19.76	23.15	20.24	19.39	17.07	19.31	10.65	11.89
Petroleum	17.10	26.28	25.28	23.35	23.22	32.13	37.32	39.33	36.79	38.77	40.00
Chemicals and Pharmaceuticals	6.85	6.85	8.41	9.74	9.71	9.19	8.81	8.47	8.04	8.35	8.44
Heavy Engineering	15.25	13.08	14.59	10.73	10.45	8.84	7.73	7.99	7.25	7.50	7.37
Medium and Light Engineering	7.86	7.76	5.71	7.60	6.70	6.71	6.07	5.81	5.46	5.92	6.14
Transport Equipment	7.28	6.53	6.37	6.27	5.40	5.32	5.17	5.62	5.90	6.23	6.54
Consumer Goods	0.89	0.90	0.47	0.74	0.77	0.98	0.91	0.89	1.06	1.06	1.10
Agro Based	-	-	-	-	0.22	0.39	0.30	0.36	0.32	-	0.003
Textiles	-	2.48	4.05	4.08	5.27	3.33	2.39	2.11	1.87	2.13	1.73
Total Value added in Public Sector Producing goods (Rs.Crores)	2514	2820 (12.17)	3086 (9.43)	3730 (20.87)	4346 (16.51)	6430 (47.95)	8379 (30.31)	10043 (19.86)	12505 (24.51)	13117 (4.89)	15160 (15.58)

Note: 1. Total value added in public sector enterprises (producing goods) will not tally with the total value added given in National Accounts Statistics, as the former set has been collected from Public Enterprises Survey (which contain data on central government undertakings only).

2. Figures in brackets in total value added row indicate annual percentage growth in value added.

Source: Public Enterprises Survey, Bureau of Public Enterprises, Ministry of Finance, various issues.

Table 4.5:

Sub Sectoral Share of Investment in the Public Sector, 1976-77 to 1986-87

(In percent)

Industry Group	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87
1	2	3	4	5	6	7	8	9	10	11	12
Steel	25.81	23.93	19.91	19.14	20.00	19,71	17.14	16.15	14.79	13.43	11.22
Minerals and Metals	8.67	8.56	7.43	6.95	6.71	9.40	8.79	8.29	7.78	7.22	10.95
Coal	9.35	8.86	9.70	9.91	10.52	10.94	10.88	11.49	11.08	11.04	10.23
Petroleum	5.85	6.36	5.72	6.24	7.60	8.46	10.11	10.66	11.00	10.23	8.29
Chemicals and Pharmaceuticals	16.44	19.17	17.55	16.87	15.82	14.34	12.71	11.28	10.29	9.36	9.44
Engineering	12.23	11.24	10.87	10.35	10.19	9.58	9.14	9.66	5.71	5.48	5.12
Textiles	2.25	3.08	2.93	2.83	2.45	2.21	2.38	2.43	2.55	2.45	2.40
Transport Equipment	3.02	2.86	3.20	3.18	3.32	3.00	2.72	3.33	3.49	3.66	3.32
Consumer Goods	0.73	2.68	0.71	0.65	0.63	2.07	2.30	2.26	0.	2.32	2.37
Agro Based	0.10	0.11	0.10	0.11	0.10	0.10	0.11	0.10	0.09	0.09	0.09
Services	17.48	17.70	17.38	18.52	17.83	16.97	23.73	15.42	14.84	14.17	7.49
Total* (in Rs.Crores)	11097	12851 (15.81)	15602 (21.41)	18225 (16.81)	21102 (15.79)	24916 (18.07)	30038 (20.56)	35411 (17.89)	42791 (20.84)	50341 (17.64)	61603 (22.37)

Note: 1. Figures in brackets in 'total' row indicate annual percentage growth.
2. Total investment may not tally with Gross Domestic Capital Formation given in National Accounts Statistics, as the former set has been collected from Public Enterprises Survey (which contain data on central government undertakings only)
* Total investment at current prices based on Public Enterprices Survey.

Source:1. Public Enterprises Survey, Bureau of Public Enterprises, Ministry of Finance, various issues.
2. National Accounts Statistics, Various Issues.

Table 4.7:

Composition of Gross Capital into Manufacturing Sector by Source: 1979-80 to 1986-87

(Rs. Crores)

Industry	1979-80		1980-81		1981-82		1982-83		1983-84		1984-85		1985-86		1986-87	
	Total Resor. (Rs.crs)	E.C.R (%)	Total Resor. (Rs.crs)	E.C.R (%)	Total Resor. (Rs.crs)	E.C.R (%)	Total Resor. (Rs.crs)	E.C.R (%)	Total Resor. (Rs.crs)	E.C.R (%)	Total Resor. (Rscrs)	E.C.R (%)	Total Resor. (Rscrs)	E.C.R (%)	Total Resor. (Rscrs)	ECR (%)
Food,Beverages	225.09	0.02	20.43	0.03	460.99	0.08	1243.89	0.01	1187.25	0.03	29.92	0.04	623.53	0.04	1099.31	0.3
Textiles	460.46	0.06	693.48	0.18	804.09	0.25	792.82	0.21	969.24	0.12	991.30	0.04	1100.76	0.53	543.13	5.3
Chemicals & Chemical Prod.	1122.49	0.05	947.4	0.09	1065.63	0.14	842.45	0.46	1271.28	0.08	1346.40	0.38	1806.38	0.18	2418.79	4.6
Metal & Metal Products	1180.22	0.14	1469.26	0.29	2143.61	1.14	1651.92	2.12	1191.21	1.86	1750.52	6.66	2479.91	2.23	1743.16	36
Machinery and Machine tools	348.97	0.09	371.16	0.19	459.29	0.30	491.53	0.50	405.92	0.80	492.21	1.25	713.22	0.70	546.72	28
Electl. goods and Machinery	273.25	0.03	339.66	0.02	379.55	0.02	343.33	0.13	374.50	0.01	411.59	0.02	764.58	0.03	565.72	1.6
Transport Eqpt	386.56	0.35	329.68	3.26	575.97	2.10	585.61	5.76	512.90	2.37	734.30	5.65	952.80	8.56	756.16	-
Others	891.96	0.35	1446.55	0.08	1346.36	0.77	1133.91	0.81	2128.78	0.67	2158.09	0.45	2075.65	0.80	6164.37	0.9
Total	7253.75	0.02 (0.73)	7920.31	0.62 (2.93)	10060.54	2.04 (3.45)	10355.32	3.04 (6.84)	11198.42	2.61 (4.23)	11766.87	7.32 (9.79)	13770.10	3.75 (9.98)	13837.3	6.96 (7.1)

Note: ECR = External Commercial Resources. These resources have been shown as a percentage of gross capital in preceding columns. Total resource is equal to gross capital formation.

Due to non-availability of comparable data on gross capital formation at disaggregated level for the years 1976-77 to 1978-79 the table has been confined within the period 1979-80 to 1986-87.

Figures in brackets in last row indicate total resources channelled into the economy (as captured) as percentage of preceding column.

Source: 1. Annual Survey of Industries, (factory sector summary results), Various issues.

2. Article on "India's International Investment Position", Reserve Bank of India, Bulletin, April 1985.

3. Reserve Bank of India, ECL returns.

Table 4.9 :

Gross Inflow of External Commercial Resources, an Industry x Sector Distribution, 1980-81 to 1987-88

(In percent)

	1980-81			1981-82			1982-83			1983-84		
Industry	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
I Mining	-	-	-	-	-	-	100.00		100.00	95.98	4.02	100.00
II Oil Explo	100.00	-	100.00	100.00	-	100.00	100.00		100.00	100.00	-	100.00
III Manufact.	66.00	34.00	100.00	32.00	68.00	100.00	84.49	15.51	100.00	21.15	78.85	100.00
1. Food Manufact	100.00	-	100.00	28.57	71.43	100.00	37.20	62.80	100.00	1.54	98.46	100.00
2. Textiles	-	100.00	100.00	-	100.00	100.00	1.50	98.50	100.00	6.04	93.96	100.00
3. Paper and Paper Prod.	-	-	-	-	100.00	100.00	-	100.00	100.00	-	100.00	100.00
4. Printing and Publishing	-	100.00	100.00	66.36	33.64	100.00	17.30	82.70	100.00	3.67	96.38	100.00
5. Leather Products	-	-	-	-	-	-	-	-	-	-	-	-
6. Rubber and Rubber Prod	-	100.00	100.00	-	-	-	48.23	51.77	100.00	-	100.00	100.00
7. Chemical and Chemical Prod	-	100.00	100.00	-	100.00	100.00	-	100.00	100.00	0.03	99.07	100.00
8. Fertilisers	-	100.00	100.00	96.28	3.72	100.00	100.00	-	100.00	46.80	53.20	100.00
9. Cement	-	-	-	-	100.00	100.00	-	100.00	100.00	10.83	89.17	100.00
10.Basic Metal Industries	100.00	-	100.00	62.60	37.20	100.00	85.58	14.42	100.00	70.68	29.32	100.00
11.Electrical Machinery	79.07	20.93	100.00	80.90	19.10	100.00	-	100.00	100.00	100.00	-	100.00
12.Machinery of all kinds	-	100.00	100.00	1.54	98.96	100.00	37.91	61.89	100.00	55.96	44.04	100.00
13.Misc	-	-	-	-	100.00	100.00	27.87	72.13	100.00	-	100.00	100.00
IV. Services	-	100.00	100.00	-	-	-	77.20	22.80	100.00	21.15	78.12	100.00

contd/-

Table 4.9 :

Gross Inflow of External Commercial Resources, an Industry x Sector Distribution, 1980-81 to 1987-88

(In percent)

	1984-85			1985-86			1986-87			1987-88		
Industry	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
I Mining	96.45	3.55	100.00	100.00	-	100.00	100.00	-	100.00	-	-	-
II Oil Explo	100.00	-	100.00	100.00	-	100.00	98.29	1.71	100.00	54.63	45.37	100.00
III Manufact.	82.18	17.82	100.00	59.13	40.87	100.00	74.85	25.15	100.00	62.33	37.67	100.00
1. Food Manufact.	-	100.00	100.00	-	100.00	100.00	-	100.00	100.00	-	100.00	100.00
2. Textiles	31.14	68.86	100.00	-	100.00	100.00	-	-	-	-	100.00	100.00
3. Paper and Paper Prod.	19.13	80.67	100.00	-	100.00	100.00	-	100.00	100.00	-	100.00	100.00
4. Printing and Publishing	-	100.00	100.00	-	100.00	100.00	28.16	71.84	100.00	-	100.00	100.00
5. Leather Products	-	-	-	-	-	-	-	-	-	-	100.00	100.00
6. Rubber and Rubber Prod.	-	100.00	100.00	-	100.00	100.00	-	100.00	100.00	-	-	-
7. Chemical and Chemical Prod	13.42	86.58	100.00	20.67	79.33	100.00	28.58	71.42	100.00	47.75	52.25	100.00
8. Fertilisers	-	100.00	100.00	-	100.00	100.00	-	100.00	100.00	-	100.00	100.00
9. Cement	33.52	66.48	100.00	2.66	97.34	100.00	-	100.00	100.00	-	100.00	100.00
10.Basic Metal Industries	97.80	2.20	100.00	85.17	14.83	100.00	85.50	14.50	100.00	99.43	0.57	100.00
11.Electrical Machinery	1.20	98.80	100.00	7.05	41.28	100.00	94.49	5.51	100.00	81.67	18.83	100.0
12.Machinery of all kinds	64.48	35.52	100.00	81.36	18.64	100.00	87.43	12.57	100.00	2.25	97.75	100.00
13.Misc	79.50	20.50	100.00	60.94	39.06	100.00	76.58	23.42	100.00	52.42	47.58	100.00
V.Services	-	100.00										

Notes:- 1. Figures are percentages of total inflow during the year.
2. Loans for which details are not available have been excluded.
3. Private consists of private, joint, and cooperative sectors.

Source: Reserve Bank of India, FCL returns.

Table 4.10 (b) :

Gross Inflow of Resources, Industry-wise Distribution, 1980-81 to 1987-88

(In percent)

Industry	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
I Mining	-	-	0.23	2.96	1.15	0.002	1.10	-
II Oil Exploration	30.94	21.68	30.06	52.07	3.20	18.04	36.13	2.83
III Manufacturing	14.45	44.03	29.54	26.62	58.51	28.30	30.90	54.37
1. Food Manufacturing	0.06	0.08	0.04	0.24	0.67	0.26	0.11	0.41
2. Textiles	3.03	4.14	1.34	0.93	0.29	3.31	0.91	2.85
3. Paper and Paper Products	-	0.10	0.81	0.18	0.45	0.28	0.26	0.01
4. Printing and Publishing	0.13	0.49	0.05	0.20	0.18	0.94	0.21	1.12
5. Leather Products	-	-	-	-	-	-	-	-
6. Rubber and Rubber Products	0.95	-	0.12	0.38	0.02	0.03	0.01	-
7. Chemical and Chemical Products	0.14	2.23	2.84	0.60	2.49	1.13	1.95	1.27
8. Fertilisers	1.74	11.62	5.93	0.57	0.23	1.09	1.60	2.52
9. Cement	-							
10. Basic Metal Industries	4.83	18.55	13.20	13.90	43.52	13.98	19.57	37.24
11. Electrical Machinery	0.38	0.40	0.81	0.05	0.13	0.18	0.29	0.38
12. Machinery of all kinds	3.19	4.83	3.10	6.00	8.21	4.38	4.88	4.35
13. Miscellaneous	-	1.59	1.30	3.57	2.32	2.72	1.11	4.18
IV. Services	54.61	34.31	40.18	18.35	37.14	53.67	31.87	41.91

Note: 1. Loans for which details are not available have been excluded.
2. Figures are expressed as percentages of total flow during the year.
3. For manufacturing subdivision, figures are proportion of total flow into the economy.

Source: Reserve Bank of India, FCL returns.

Table 4.11:

Gross Inflow of Commercial Resources, Purposewise Distribution, 1980-81 to 1987-88

(In percent)

Years/ Purpose	Mining	Oil Exploration	Manufacturing Sector														Services
			Food Mfg	Textiles	Paper & Paper Prod.	Printing & Publishing	Leather & Leather Prod.	Rubber & Rubber Prod.	Chemical & Chemical Prod.	Fertilizers	Cement	Metal & Metal prod	Electrical machinery	Machines ofall kinds	Misc.	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1980-81																	
Expansion	-	-	-	0.39	-	-	-	-	-	-	-	-	-	100.00	-	7.05	95.80
Modernisation	-	-	-	99.61	-	100.00	-	-	-	-	-	-	-	-	-	6.94	-
Diversification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.33
Starting of New Activities	-	100.00	-	-	-	-	-	-	100.00	100.00	-	100.00	20.93	-	-	16.57	0.87
Others	-	-	100.0	-	-	-	-	100.00	-	-	-	-	79.07	-	-	69.44	-
1981-82																	
Expansion	-	9.25	71.4	50.52	-	33.64	-	-	13.15	96.28	-	0.28	79.78	78.19	8.54	30.40	87.28
Modernisation	-	0.42	-	36.80	100.00	-	-	-	-	-	-	26.37		1.82	-	10.19	
Diversification	-	1.96	-	-	-	-	-	-	2.53	-	88.52	-	19.10	9.34	-	3.18	-
Starting of New Activities	-	-	-	5.88	-	-	-	-	80.77	3.72	-	44.87	-	1.96	91.46	17.10	12.70
Others	-	88.37	28.5	6.80	-	66.36	-	—	3.55	-	11.48	28.47	1.12	8.69	-	39.13	-
1982-83																	
Expansion	-	17.52	55.8	70.70	7.65	7.69	-	51.77	7.71	87.53	13.48	1.29	2.72	45.76	44.26	42.17	52.06
Modernisation	-	-	6.9	13.27	12.40	92.31	-	-	-	-	-	8.95	26.91	35.27	7.87	25.00	36.21
Diversification	100.00	1.40	-	-	67.21	-	-	-	2.29	-	74.02	-	3.27	0.20	-	1.87	-
Starting of New Activities	-	-	-	16.03	6.34	-	-	-	79.33	12.47	-	82.90	63.29	8.19	3.83	27.13	9.67
Others	-	81.08	37.2	-	6.56	-	-	48.23	10.68	-	12.50	7.70	3.81	10.58	44.04	4.08	2.06
1983-84																	
Expansion	-	-	13.8	33.10	5.82	6.42	-	65.43	23.65	-	2.17	1.44	4.41	17.87	1.61	35.00	67.65
Modernisation	4.02	0.11	29.6	59.36	48.15	82.57	-	18.52	6.89	-	-	5.35	35.49	15.49	-	10.47	9.75
Diversification	60.06	0.51	-	6.04	1.06	-	-	-	-	-	13.59	12.29	12.08	1.68	2.50	4.84	-
Starting of New Activities	-	1.45	55.0	-	-	11.01	-	-	62.76	-	55.64	78.62	42.56	15.32	61.90	31.74	1.80
Others	35.92	97.93	1.5	1.51	44.97	-	-	16.05	6.70	100.00	28.65	2.31	5.45	49.64	33.99	18.23	20.79

Contd/- ---

Table 4.11 :

Gross Inflow of Commercial Resources, Purposewise Distribution, 1980-81 to 1987-88

(In Percent)

Years/ Purpose	Mining	Oil Explo-ration	Manufacturing Sector														Services
			Food Mfg.	Textiles	Paper & Paper Prod.	Printing & Publi-shing	Leather & Leather Prod.	Rubber & Rubber Prod.	Chemical & Chemical Prod.	Fertilizers	Cement	Metal & Metal prod	Electrical machinery	Machines of all kinds	Misc.	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1984-85																	
Expansion	-	44.04	49.33	48.86	22.63	33.49	-	100.00	25.56	-	-	0.32	78.50	11.53	7.11	10.15	15.28
Modernisa-tion	3.55	-	-	39.14	21.34	58.60	-	-	20.05	-	-	1.43	0.15	27.76	61.58	5.31	3.84
Diversi-fication	20.88	0.31	-	-	7.98	-	-	-	41.03	-	10.66	-	-	1.48	-	1.86	-
Starting of New Activities	18.06	3.01	49.73	-	1.30	7.91	-	-	13.35	-	32.26	90.92	21.35	10.83	2.11	73.02	77.18
Others	57.51	52.63	0.94	12.00	46.75	-	-	-	-	100.00	57.08	7.33	-	48.41	29.21	9.68	3.70
1985-86																	
Expansion	-	19.57	12.76	2.79	5.32	25.24	-	82.35	11.10	-	4.15	-	-	62.96	-	28.27	46.11
Modernisation	-	-	-	4.51	17.81	29.25	-	-	63.55	-	-	1.84	0.93	9.30	2.40	3.70	2.94
Diversi-fication	100.00	-	-	-	-	-	-	-	2.58	-	-	-	-	-	-	0.03	-
Starting of Activi-ties	-	2.37	64.69	92.70	-	0.44	-	-	22.77	75.14	47.53	98.16	73.02	17.30	6.89	42.57	45.80
Others	-	78.06	22.55	-	76.87	45.07	-	17.65	-	24.86	48.32	-	26.05	10.44	90.71	25.42	5.14
1986-87																	
Expansion	-	-	-	3.90	93.27	19.85	-	100.00	31.22	11.16	-	-	52.87	8.13	-	14.00	21.76
Modernisation	-	-	-	51.61	-	30.38	-	-	-	-	-	0.54	-	-	-	2.50	2.68
Diversi-fication	-	-	-	-	-	-	-	-	1.15	-	100.0	-	-	4.44	-	1.30	-
Starting of New Activi-ties	--	2.14	-	44.99	-	-	-	-	58.13	68.19	-	38.92	47.13	5.04	61.45	45.38	53.99
Others	100.00	97.86	100.00	-	6.73	49.77	-	-	9.54	20.65	-	60.54	-	82.39	38.55	36.82	21.57
1987-88																	
Expansion	-	-	-	27.48	-	100.00	100.00	-	19.02	-	100.00	-	46.05	40.94	-	13.05	19.00
Modernisation	-	-	-	14.83	-	-	-	-	-	-	-	0.56	-	1.09	-	9.14	19.22
Diversi-fication	-	-	89.3	-	-	-	-	-	-	-	-	-	-	1.95	-	0.46	-
Starting of New Activi-ties	-	50.85	-	56.08	-	-	-	-	80.98	33.46	-	4.86	53.95	47.83	-	16.79	20.60
Others	-	49.15	10.65	1.61	100.00	-	-	-	-	66.54	-	94.58	-	8.20	100.00	60.56	41.18

Note: Loans for which details are not available have been excluded. Source:-Reserve Bank of India, FCL returns.

CHAPTER FIVE

CONCLUSION

Economic development necessitates the inflow of external resources which supplement domestic resources available in a developing economy. In such an economy, development targets are, by necessity, ambitious; while the resources that can be mobilised domestically for financing development activities are scarce. Naturally, development process cannot be dissociated from long periods of foreign borrowing. An inevitable consequence of such association is that debt service liabilities assume significance automatically. This is especially so, as in a present set up concessional assistance is in less flexible supply than loans on commercial or near commercial terms and the distribution of the former is politically biased and geographically concentrated.

The genesis of the issues related to debt and debt servicing burden concerning commercial borrowing could be traced back only in the 1970s. Even though private capital flows existed in 1950s and 1960s, the global commercial debt crisis emerged alongwith the eruption of oil crisis. To cope up with the first oil shock of 1973-74, the non-oil producing countries took refuge in loans through which commercial banks recycled the surplus of the oil exporters. The crisis was aggravated following the second oil crisis in 1979 and the consequent developments in international economic scenario during 1979-82. The conglomeration of the developments led to debt crisis of 1980s mainly faced by the

Latin American and African countries. Against this backdrop naturally one becomes curious about India's indebtedness.

Let us look into India's borrowing experiences, especially commercial borrowing, within the context of historical perspective. India's experiences of commercial borrowing since 1970s has not been a significantly different one when compared with those developing economies who have maintained their indebtedness on a sustainable level. Following the first oil shock, India did not resort to commercial borrowing on a large scale. Rather, the approach was one of caution in borrowing coupled with effort to overcome the crisis through export promotion, official assistance, etc. However, the second oil shock led to the emergence of a new era in India's external commercial borrowing. There took place a sudden quantum jump in magnitude of India's borrowing from international financial markets. India emerged as a country resorting to commercial borrowing in the 1980s on an increasing scale. This resulted in shedding away excessive reliance on official loans.

This is significantly different from the scenario prevailing in 1950s (characterised by equity capital flows and official assistance) and in 1960s and major part of 1970s (characterised prominently by inflows of concessional loans).

The large scale borrowing by India in the 1980s is evident from the debt stock and also the debt service payments made by the country in the 1980s and especially since mid - 1980s. The debt stock rose to Rs. 54,853 crores as at end- March 1988 from

Rs. 13,430 crores as at end- March 1980; while debt service payments grew from a level of Rs. 981 crores during 1980-81 to Rs. 5,347 crores during 1987- 88. The dominant factor influencing the rapid pace of growth of the debt stock as well as inflow of external resources in the 1980s has been the growth in external commercial borrowing. This latter component has grown at a compound rate of 35.4 percent vis-a-vis a compound growth rate of 20.1 percent in total debt stock during same period.

This has definitely influenced the overall debt structure which has turned unfavorable over the years . The noteworthy feature in this context is that the debt structure has been affected more by the worsening amortisation pattern rather than the interest burden. The interest cost of borrowing, though increased in absolute terms, has witnessed a decelerating trend in terms of the rate of interest charged, both fixed as well as floating interest rates (the latter being represented by LIBOR). The trend in latter holds good despite the fact that no discernible direction could be seen in case of margin over the floating interest rate. Besides this, the implicit interest burden, as shown by the real interest rate as well as the effective nominal interest cost, continued to exhibit a declining trend. However, the pace of decline in the former has been more pronounced.

Over the years, there has been a rising concentration on loans with short-and medium -term maturities.This is reflected in the continually rising debt servicing indicators.

It is against this background, the following two questions

have been examined:

(a) how does the time path of debt service obligations vis-a-vis the country's debt servicing capacity evolve within a long run perspective; and

(b) what has been the impact of external commercial resource utilisation within the major sectoral as well as the sub-sectoral level (within the manufacturing sector) over the period given the framework delineated by the industrial policy stance.

An analysis of the time path of debt/output ratio based on the continuity of historic trends in major macro variables such as savings,investments,and exports resulted in an explosive debt path for India. The debt/output ratio turned to be unbounded,never converging towards a finite limit. Under such condition, the country cannot achieve minimum growth goal as stipulated without reaching an unsustainable net debt situation. The external financing requirements will be extremely high and the amounts will reach much higher level than can be expected to be available as well as pragmatic to be contracted. Consequently, this calls for an intensification of the domestic effort with regard to domestically mobilisable resources to reduce the external financing requirements.

A reduction in the external financing requirements would enable the economy traverse along a bounded path,when the debt/output ratio converges to a feasible finite level. Given such a condition, the country would pass through the transitional phase from a debtor to a mature creditor stage within a finite time horizon. However, the interest would be the major determinant in influencing the time span required for complete debt retirement.Besides this, given the international economic

scenario, a worsening in the term structure of loans would result in lengthening the phases of the debt cycle to reach a situation of the zero debt.

The salient feature of this entire exercise is that there would be a need to intensify the domestic efforts which would determine the phases of the debt cycle as well as the process of the gradual decline in dependence on the external resources.

The evolutionary path of the debt/output ratio (as examined in the chapter three) underlines the need for evaluating the contribution of external resources in developing debt-servicing capacity. This calls for a close monitoring of the utilisation of such resources. To serve this purpose, the impact of the utilisation of commercial resources on industrial performance has been examined.

An examination of the allocation of external resources over the period under consideration reveals that these resources have broadly followed the pattern of industrial policy preference. This is inevitable since Indian economy is characterised by the regulated inflow of external resources into the development process. Following the main trend in development policy stance, resources have been allocated among the major sectors, such as services, manufacturing, oil exploration, and mining. Of these, services sector's share declined gradually in the 1980s, the share of which was highly pronounced in late 1970s. On the other hand, manufacturing sector has gained importance in the 1980s following fresh impetus provided for renewed pace in industrial development as envisaged through recent thrust on

modernisation, upgradation of existing technology, etc. The trend in allocation into mining and oil exploration also underlines the character of regulated inflow of resources.

Besides the above, the sectoral destination of commercial resources has also been in line with the preferred industrial policy of catering to the needs of priority areas, suppliers of basic and infrastructural services as well as intermediate inputs. Consequently, the public sector has been the major recipient of external commercial resources. In recent years, the government has been emphasising promotion of exports. Thus, large private sector units exhibiting potential for export promotion has been given preference while contracting loans.

Commercial resources have been channelled into almost all the categories of manufacturing sub sector. However, a purpose wise sub sectoral analysis leaves much to be desired. The undertone of the recent phase of industrialisation, as discussed earlier, has been to improve industrial growth performance through modernisation, abandonment of existing obsolete technology, etc. However, the purpose wise destination reveals that only light and medium engineering industries accorded maximum priority to modernisation. Other industries, in general, resorted to commercial borrowing in order to expand the existing activity and/or starting of new activities. A significantly large portion could be attributed to unspecified activities (almost a quarter of the total resources).

A decomposition analysis of the output growth at two points of time (1976-77 and 1986-87) focusses that the forces of

industrial growth has not undergone any change despite the recent emphasis on divergent aspects of development.The analysis shows that the basic thrust on the import substitution and export promotion has not been achieved to a significant extent. Whatever result has been achieved in the context of export promotion, the magnitude appears less pronounced. The strong demand pull still continues to influence the market, and trade adjustment has continued to remain a factor of secondary importance only. However, the most uncomfortable feature brought out by the decomposition analysis has been that most of the heavy capital goods and intermediate inputs industries experienced negative import substitution effect. A negative import substitution means the economy is not saving through foreign exchange resources by means of reduced volume of imports. Rather negative impact implies spending more on import despite adoption of the preferred process.

These two aspects require careful consideration. The rapid build up of debt service obligations necessitates concomitant development of debt service capacities either th rough saving of foreign exchange or through earning of foreign exchange or through a judicious combination of the two, lest the economy would be in a liquidity crisis. However, on both the grounds, the decomposition analysis shows that the efforts in realising preferred policy leave much to be desired.

It must be mentioned that the analysis is based on two time points. Hence it does not focus light on such aspects, as emphasising change in technical coefficients, etc. Besides, a two time point analysis of this kind also cannot help in fully assessing the performance when viewed in the context of

purposewise allocation and building of debt-servicing capacity. Thus analysis based on appropriate indices leading to the measurement of modernisation, diversification, etc. would prove useful from the point of view of monitoring the flow of external resources. Moreover, while analysing the purposewise allocation of these resources it has been noticed that a large quantity of these had been diverted towards unspecified purposes. Also, utilisation of these resources had not been strictly according to basic thrust as delineated in industrial policy stance. These features necessitate close monitoring of the use of resources at the sub sectoral level.

APPENDIX I : DATA SOURCES.

This is intended to provide a detailed description of the sources which have been used to collect data for serving the purpose of the present thesis. The nature of data requirement as well as the topic under study limit any scope for resorting to primary sources.

Based on sources, data available on external debt may be broadly classified into two:

1. sources provided by international agencies; and
2. sources provided by national agencies.

At the international level, comprehensive original data on external debt are compiled and published by four international organisations. These are, the Bank for International Settlement (BIS), the International Monetary Fund (IMF), the Organisation for Economic Cooperation and Development (OECD), and the World Bank. These international agencies may be broadly divided into two sub-populations: the creditor-reporting systems and debtor-reporting systems.

The main creditor-reporting systems are those of the IMF, the OECD, and the BIS. The BIS collects data on bank claims from a reporting area of monetary authorities in eighteen industrial countries and six offshore centres (and the US reports the activities of US banks in a seventh: Panama). It publishes regularly two statistical series: a quarterly and a semi-annual. The former is based on reporting by the banks in individual reporting countries on their unconsolidated business with non-residents, including the banks' own affiliates for three

overlapping breakdown: currency, geographical, and sectoral. The semi-annual series provides data partly on a world wide consolidated balance sheet basis and partly as the same basis as that of quarterly series with two separate breakdown of asset positions vis-a-vis each country: a maturity and a sectoral breakdown. The BIS system, being based exclusively on stock data, contains no information on debt-service.

In the IMF system, data on external debt are collected by the Fund's Bureau of Statistics. The Bureau collects data on balance of payments statistics which contain comprehensive coverage of current debt service payments and of capital account transactions; government finance statistics which include information on both external and domestic debt of various levels of government. While money and banking statistics contain data on external liabilities of different classes of financial institutions. In addition to the above, the Bureau collects international banking statistics which provide information on the external debt of a country that is intermediated by banks within the country itself or by non -resident banks. Data are reported by the concerned country itself or by non-resident banks. A total of 137 countries report data. The Bureau also provides information on debt service as well as debt service projections (as appear in World Economic Outlook).

The main source of the OECD data are reports from twenty two Export Credit-Agencies. Data published by the OECD for individual borrowing country are shown in aggregative form over groups of creditors. The OECD data provide information on debt

owed by public borrowers or private sector borrowers with public sector guarantees to the OECD countries. These include:

(i) categories of indebtedness (notable exclusion being unguaranteed bank claims);

(ii) terms and conditions of external lending, especially official; and

(iii) sectoral and geographic distribution of flows.

Originally, the information used to be collected regarding flows to the developing countries only. But in 1980, the coverage was expanded to include flows to and the indebtedness of all other countries.

The special features of the OECD data are as under.

1) The OECD provides flow data both in gross and net terms for most categories of transactions (net indicates adjustment for repayment of principal).

2) The OECD reporting systems include data on debt service as well as information on the projected debt service for officially supported credits.

Some what of a hybrid between the debtor and creditor systems are the World Bank data, published in the World Debt Table (WDT). World Bank exposure is reported from the IBRD's own database, but the claims of all other creditors are reported by the debtor. The WDT is potentially a very valuable source of data, since it reports debt stocks (and some flows) by creditor.

However, the database is comprehensive for only medium-term public and publicly guaranteed debt.

The World Debt Tables (WDT) contain country tables for 111 individual countries who (with one exception) are borrowing members of the World Bank. The WDT also contain summary data pages organised on a geographic regional basis and by economic and financial criteria (e.g., middle income oil importers, major borrowers), as well as table showing totals for all countries reporting for the Debtor Reporting System (DRS).

Borrowers are grouped in the WDT according to whether they are: (a) public sector or publicly guaranteed borrowers, or (b) private borrowers without a public sector guarantee. On the creditor side, the DRS divides holders of public and publicly guaranteed debt into official creditors (international organisation, governments and government agencies) and private creditors (exporters, private banks and other financial institutions, bonds and nationalisations).

WDT also contains information on average terms for new commitments on loans contracted during the year together with memorandum items showing the proportion of public debt contracted on concessional terms and the proportion contracted at variable rates of interest. As a subset of its data on flows, the WDT publishes detailed debt service information on the basis of payments actually made during a reporting year. It also publishes projections of future debt service, and includes historic debt-service ratios.

In order to facilitate the analytical use of debt data, the

WDT includes in its country data pages several economic aggregates, together with a range of standard debt ratios and indicator charts.

In the present thesis, data published by the international agencies have been used mainly to compare the indebtedness of India vis-a-vis certain selected countries, chosen at random, who are either heavily indebted or at comparable levels of indebtedness as of India. Moreover, the purpose has been a comparative analysis of total external debt and the relevant debt-service ratios. For this purpose, debt statistics published by the World Bank have been chosen for the obvious reason that the nature of statistics provided by the other three sources has not been expected to serve the purpose of the thesis.

For the purpose of the main analysis contained within the thesis, data published by the national sources have been made use of. The sources publishing debt statistics at the national level are:

1. Department of Economic Affairs, Ministry of Finance, Government of India; and

2. Reserve Bank of India.

A detailed discussion regarding the various sources is as under.

Debt - related medium and long-term (exceeding a maturity period of 1 year) statistics include the following: (i) data on external assistance and grants; (ii) the use of fund credit; and (iii) data on external commercial borrowings.

Data on external aid is maintained and published by the Aid

Accounts and Audit Division (AAB) of the Department of Economic Affairs (DEA) which gathers and processes data covering bilateral assistance as well as multilateral aid from such institutions as IBRD, IDA, IFAD, EEC, and the IMF Trust Fund. All aid disbursements, whether taking place under the reimbursement procedure (in which case free foreign exchange is released by the government to the importers is subsequently reimbursed by the lending agency or country), or under the direct settlement method (in which case payment is made directly to foreign suppliers by the donor country or institutions) are reported directly to the AAB. In the case of reimbursements, however, the settlement advice is also forwarded by the donors to the RBI. Reporting on aid flows to RBI by AAB covers disbursement under both the direct settlement and reimbursement methods.

Data on external assistance on non-government account, as well as grants data are mainly published by the AAB of the DEA. These are annual data and appear in a brochure called "External Assistance". The nature of data is as under.

1. Country-wise details of all loans are furnished in annexure-I. The purpose as well as terms and conditions of each loan are described lucidly therein.

2. Source-wise details of authorisation and utilisation of loans on government and non-government accounts are given in appendices I and II. Similar data on grants are provided in Appendix III. Appendix IV gives most upto date account about authorisation of loans, utilisation, repayments alongwith payment of interest.

3. Historic as well as current data on utilisation of loans from bilateral and multilateral sources on government account are provided in appendix-VI. While the same details regarding interest payments and country or institution wise details regarding repayment of principal on government account are provided in appendices VIII and VII respectively.

4. Details on outstanding liability of Government of India on external loans and grants assistance are furnished in appendix IX and XI respectively. These cover historic details also.

5. Appendix X gives details about utilisation and debt servicing payments during the past ten years regarding government and non-Government account loans.

Debt statistics relating to the external assistance and grants also appear in Reserve Bank of India publications - at disaggregated level in the currency and Finance Report (Volume 2) and at aggregated level in Annual Report as well as in occasional articles in RBI bulletin. The disaggregated country and purpose wise details are based on information received from AAB of DEA. The discrepancy witnessed between the two sets of data provided by the RBI and DEA may be attributed to the following:

a. coverage; and

b. method of conversion.

Regarding debt service payments entailed by all types of past aid disbursements are settled by the RBI in accordance with

the advice and authorisations received periodically from the AAB of DEA. The repayment details are obtained through the following sources.

a) Classified payments data collected by the Department of Statistical Analysis and Computer Services (DESACS) and compiled by the Department of Economic Analysis and Policy (DEAP);

b) information received directly by the DEAP;

c) details from Indian Supply Mission at Washington and direct repayment through the RBI; and

d) details of payment through non-resident government which are collected through several departments of the RBI.

Transactions relating to the IMF are routed through the Reserve Bank of India which maintains accounts in this regard. Data relating to these transactions are mainly published by the IMF. The RBI also publishes these information at the aggregate level.

Details about external commercial borrowings at the aggregated level are published by the Reserve Bank of India. The Enternal Commercial Borrowing Division (ECB) of the Ministry of Finance also maintains accounts relating to these borrowings. Information about commercial borrowing, comprising loans, bonds, suppliers' credit and buyers' credits, is handled by the ECB. Details of commercial borrowings to be negotiated have to be submitted to ECB when administrative clearance is sought from it. Apart from loan or credit particulars, such as the grace period, maturity and interest rate, these details provide a broad

description of the relevant project, or programme including local costs or the type of imports, to be financed through commercial borrowings.

Besides administrative clearance of the ECB, approval by the RBI is necessary for all types of commercial borrowing before the loan agreement can be concluded. Thus, information is collected directly by the RBI. Within the RBI, data on commercial borrowings are handled by the Exchange Control Department (ECD), the Department of Statistical Analysis and Computer Services (DESACS), and the Department of Economic Analysis and Policy (DEAP), which are entrusted, respectively, with verification and coding, data processing, and final compilation.

For the period until September 1984 data on commitments, utilisation and service payments was gathered directly by the ECD from the borrowers. But since then a reporting system has been introduced regarding commercial borrowings. Under this system, the borrower submits the approval proforma called Foreign Currency Loan -1 (FCL-1) to the regional office of the ECD.A second proforma called Foreign Currency Loans -2 (FCL-2) are also submitted to the regional offices of ECD. These are returns for submission to the ECD regional office at the time of each drawal against the loan, or else, if and when the repayment schedule is altered. Among other things, this proforma contains data on the amount drawn, import licence and invoice particulars, and, in the case of suppliers' credits, the value of imports as well. The returns compiled from it are sent directly by the regional ECD offices to DESACS. Finally, a third proforma called Foreign

Currency Loan-3 (FCL-3) has to be submitted by the borrower to the authorised dealers(ADS) for effecting any loan related remittances such as commitment fee, interest or service charges and repayment of principal. However, in the case of suppliers' credits for deffered payment imports a once for all clearance for such remittances is recorded through proforma called Deferred Payment -1 (DP-1), which is the source for data on down payments and instalments, the latter broken down into principal repayment and interest charges. RBI uses this reporting system for proper monitoring of the external debt situation through systematic matching of the three proformae covering approval, utilisation, and service payments.

The information collected on loan-by-loan basis are consolidated and published at aggregated level by the RBI. Data regarding stock position are based on information collected through FCL system supplemented by information available from companies and financial institutions sent directly to the DEAP. The same procedure is followed in respect of inflow data for a particular year. However, regarding outflow data on account of principal repayment, the information is collected from recorded statistics on classified payments supplemented by the additional information received directly from companies and financial institutions. Regarding interest payments the same procedure is followed as in the case of compilation of outflow on repayment.

At aggregated level, data are published regarding outstanding position, gross inflow and repayment during a year. Interest amount appears in combination with the total interest

paid on foreign loans and credits (as it appears in Economic Survey of the Government of India in the section giving details about invisible transactions).

At disaggregated level data are available on a loan-by-loan basis regarding the following (which are not published):

i. type of credit and borrower;
ii. purpose of availing of the loan;
iii. sector for which loan has been contracted;
iv. industrial category;
v. name of lender;
vi. guarantee provided for securing the loan; as well as
vii. currency in which loan has been contracted.

Based on the above, the data have been consolidated regarding the following:

1. Currency, credit type, and sector wise distribution of outstanding, drawal, and repayment information;

2. Credit-type wise distribution of interest rate charged,both fixed as well as variable; and

3. industrial activity and purpose (within the industrial activity) wise distribution of resources.

The present thesis is based on details of debt statistics provided by the RBI. The reasons are mainly two:

1. to maintain uniformity and consistency in compilation procedure, and other technical details; and

2. to utilise information about external commercial

borrowings at disaggregated levels which are solely collected by the RBI on a loan - by- loan basis.

At this point, it may be worthwhile to explain the associated problems of this set of information.

1. To begin with aggregated data on outstanding, drawal, and repayment based on FCL system are available only for the period 1980 and afterwards. However, one may quite legitimately be sceptical about the quality of data for the period 1980-1984 due to problems like underreporting, improper planning regarding collection of information, etc. Hence, these have been arrived at using interpolation process and incorporating information from World Debt Tables, 1989-90. Data for the period 1976-80 have been obtained from materials collected in connection with the perparation of the articles on "India's International Investment Position" published by the RBI from time to time. Any compilation inaccurracy inherent in combining these three different sources is, however, unavoidable.

2. Details on interest payments on external commercial borrowings are not available directly in published form. We have not made use of data as appear in FCL-3 returns as these are incomplete. Rather these information have been arrived at using data published in Economic Survey under interest and service payments on foreign loans and credits. In order to arrive at interest on ECB, interest payments on EA, as appear in Economic Survey, have been deducted from the total interest payments. Hence, interest payments include interest on non-goverment account loans also. The inaccuracy may occur due to incorporating two distinct sources of information. But this was inescapable.

3. Information obtained at disaggregated level for the

period 1980-88 are based on those cases for which details are available. Loans for which details are not available have been excluded while obtaining required information. To this extent data coverage is not complete. The following shows the amount of loans captured while working out the required details.

Year	Amount captured (Rs.crs)	Amount actually published (Rs.crs)
1980-81	340	NA
1981-82	467	NA
1982-83	1065	NA
1983-84	1096	NA
1984-85	1753	1472
1985-86	1886	1827
1986-87	3827*	3115**
1987-88	1632*	1946**

*Including prepayment. ** Excluding prepayment.

However, it may be stated that this information may be accepted as providing rough ideas about the trend in flows. Disaggregate data for the period 1976-80 have been culled from information collected for preparation of the articles on "India's International Investment Position" for the said period. Data for this period are based on nearly complete coverage of the cases.

4.Besides the above, tables for section two of chapter four incorporate information on buyers' credits and suppliers' credits only. The amount withdrawn and lent to subborrowers by the financial institutions have not been taken into consideration. Thus, out of total information provided by FCL-2, 13.73 percent of the information, for the period 1981-88, have not been captured. However, practically the proportion of cases not taken into consideration would be less than 13.73 percent since the amount actually lent are not equal to what these institutions raise from international capital markets.

Apart from the above, another point deserves mention. In order to obtain details at the subsectoral level within the

public sector industries, we have used information from Survey of Public Enterpriss(BPE), as required details are not available in ASI or NAS. As BPE captures information only on central goverment undertakings, we have not covered information on departmentally run public undertakings and banking institutions.

Lastly, a brief discussion regarding the choice of the period under study deserve mention here. The period chosen for the thesis extends over a span of about twelve years from 1976-77 to 1987-88. The justification rests on the topic under consideration. Though India is not a new entrant in the field of commercial borrowings, the scale of her borrowing intensified since the second oil shock and especially in the 1980s. A magnified quantum jump witnessed during the sixth five-year plan was maintained in pace since then and heavy inflow of external commercial borrowings has taken place. The proportion which commercial borrowings forms of the total foreign resources flow during the first three years of the seventh five-year plan amounts to 28.3 percent of the total. On an average, during 1980-88, as much as 25.5 percent of total foreign resources have come in the form of external commercial borrowings. The outstanding liabilities under external commercial borrowings, which stood at Rs.1,252 crores as at end- March 1980, has reached the level of Rs.19,147 crores (P) as at end- March 1989; a growth of about sixteen times in a span of nine years. In the years ahead, it is anticipated that the magnitude of external commercial borrowings will grow progressively consequent on shrink in flow of concessional resources. This emphasises the need for a study of different aspects of external commercial resource flows confined to the very recent period.

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