AID EFFECTIVENESS, DEBT CAPACITY AND DEBT MANAGEMENT IN THE ECONOMY OF PAKISTAN

By

MOHAMMAD ISHFAQ

A THESIS SUBMITTED TO THE QUAID-I-AZAM UNIVERSITY, ISLAMABAD IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN ECONOMICS.

SUPERVISOR

Dr. EATZAZ AHMAD
PROFESSOR & CHAIRMAN
DEPARTMENT OF ECONOMICS
QUAID-I-AZAM UNIVERSITY, ISLAMABAD.

DEPARTMENT OF ECONOMICS
QUAID-I-AZAM UNIVERSITY, ISLAMABAD.
2004

CERTIFICATE

This is to certify that this dissertation by Mr. **Mohammad Ishfaq**, is accepted in its present form by the **Department of Economics**, Quaid-i-Azam University, Islamabad as satisfying the dissertation requirements for the degree of Doctor of Philosophy.

Professor Dr. Eatzaz Ahmad
Chairman/Supervisor

External Examiner

(Dr. Rauf Butt)

External Examiner

(Dr. Abdus Salam)

Tables

Figures

ABSTRACT

This thesis analyzes the role of foreign aid in the economy of Pakistan in terms of its effects on economic growth, income equality, poverty and the debt burden. It also evaluates Pakistan's debt servicing and debt retirement capacities and its debt management practices. The thesis finds that foreign aid has not contributed favorably to GDP growth and income equality, though it has been effective, in a limited way, in reducing the extent of poverty. The ineffectiveness of aid can be attributed to indirect diversion of aid funds to non-productive activities and inefficiency in resource allocation especially in the public sector associated with the easy availability of foreign aid. However, the study argues that foreign aid has been instrumental in supporting the growth rate in consumption that otherwise would not have been possible. Furthermore foreign aid and external borrowing made it easier to avoid hard policy choices such as heavy taxation of income and consumption.

The thesis finds that Pakistan's long-run debt-servicing capacity is extremely low, primarily due to low savings and productivity. It is further observed that with the current state of savings and productivity, Pakistan has to choose between sacrificing growth and prolonging the unsustainable position of continuously growing debt burden.

The thesis concludes that the practice of reliance on foreign aid is unsustainable unless efforts are made, on continuous basis, to overcome the basic weaknesses in the economy. Pakistan must improve its saving rate by continuing and even further refining the ongoing process of tax reforms, downsizing of the public sector and privatization of public sector enterprises. Pakistan needs to improve its overall productivity in the economy, especially in the public sector. The privatization process needs to be accelerated for the sake of minimizing the cost of losses in the public sector and improving productivity rather than revenue generation. Pakistan also needs to manage its debt in a better way. There is utmost need for enrichment of the intellectual capacity in the public sector institutions responsible for debt management. These institutions also need to be reformed thoroughly and given sufficient autonomy.

Finally, the thesis concludes that Pakistan has to be selective in choosing among the alternative aid and loan packages. External borrowing has to be target specific and the targets have to be specified in the light of a social welfare function that assigns due weight to social as well as economic considerations such as growth enhancement, promotion of equity and social justice and eradication of poverty. External borrowing must be undertaken within the framework of economic plans rather than making the planning exercise contingent on the availability of external resources.

Acknowledgement

Any acknowledgment would be too inadequate unless I express my gratitude to my supervisor Dr. Eatzaz Ahmad, Professor & Chairman of the Department of Economics, Quaid-i-Azam University, Islamabad. I am in great debt to him as he has helped to make the effort worthwhile-in particular during the time when I needed help. I pay distinct thanks to my supervisor, Dr.Eatzaz Ahmad.

Innumerable gratefulness to my Allah, who blessed me with loving brothers and sister and the friends; my well wishers, the nicest of the juniors Shabib Haider and Badar, the best of the classmates, Idrees, and my colleagues Farzana and Dr. Nawaz Hakro who remained a permanent source of motivation for me.

I am also thankful to my teachers Dr. M. Ali Chaudhary, Dr. Abid Aman Burki, Dr. Tariq Javed, Dr. Aliya H. Khan, Dr. Asalm Chaudhary and Dr. Mushtaq A Khan for valuable research assistance at various stages of the work.

In addition, I am indebted to officials of the United States Educational Foundation, Pakistan and Fulbright Commission of USA who provided me the opportunity to carry out my research in the University of Illinois at Chicago (UIC), USA. The guidance and help of Dr. Paul Pieper, Head Economics Department, UIC, USA and co-operation of Dr. Warren Jones, Western Illinois University, USA has made it possible to penetrate well beyond the generalities that usually surround foreign aid discussion. I am really grateful to the Institute of International Education, New York, USA, which have provided me the prestigious Fulbright Research Fellowship, financial support and the encouragement essential to the performance of this task. A final word of thanks goes to my wife, Uzma for her generous assistance during the period of my research work.

Untold indebtedness to my Allah, who endowed me with well-wishing people; though not named, but assisted, encouraged, helped and prayed for me. May Allah help me to return all the favors of my affectionate....Aameen.

Contents

Chapter 1

INTRODUCTION

In capital-starved countries like Pakistan, foreign aid has variously been considered as an important source of financing, implementing and completing different socio-economic development programs. However, the accessible external aid has not always been utilized in formulation and implementation of effective programs. While a judicious use of external assistance has been instrumental in achieving accelerated development of many less developed countries of the world, many nations have failed to use it aptly and optimally. As a result, such countries have accumulated significant amounts of debt with not many benefits in terms of economic growth and living standards for the poor.

Although the inability of many countries to effectively use the available external resources is attributed to various factors, the inadequate absorptive capacity in less developed countries has often been pointed out as a major binding constraint on the efficient utilization of aid flows.

The earlier research evidence reveals the existence of a distinct dichotomy of views regarding the role and effectiveness of foreign aid in the development of the recipient countries of the world. Certain economists hold that external assistance has alleviated considerably the financial and technical bottlenecks to development of many developing countries, even if it has not served as an entirely unmitigated blessing for them (e.g. Papanek 1972, Cassen 1994). The opponents argue that foreign aid has caused adverse effect or, at least no worthwhile effect on the development of the recipient countries (e.g. Lucas 1990, Pack and Pack 1990, Mosley and Hudson 1995, Boone 1994).

As such, how and to what extent has the foreign aid been beneficial or detrimental to the recipient countries cannot be inferred conclusively in the presence of widely contradictory evidences. The recent surge of literature on the macroeconomic analysis of aid does not produce any better picture and the question of aid effectiveness remains an issue to be analyzed on case-to-case basis for the specific countries and for specific periods of time.

In this study, we analyze foreign aid in terms of its productive role and as an engine of growth. The main objective is to evaluate the effectiveness of foreign aid in Pakistan and we seek to discover whether the additional resources associated with aid have actually resulted in faster GDP growth. We also consider the effectiveness of aid in promoting equitable distribution of income and eradicating poverty. Thus our analytical interest initially centers on one aspect i.e. aid effectiveness.

We also intend to study the position of external debt burden on Pakistan, with special emphasis on Pakistan's capacity in debt servicing and debt retirement. The thesis also highlights the major issues in debt management practices in Pakistan.

There are cogent reasons for making Pakistan a focal point of discussion. In the first place, Pakistan has a virtually unbroken record of large-scale and varied economic assistance from abroad. Secondly, Pakistan provides a vivid illustration of economic growth in the face of serious economic, social and political obstacles, and with acute problems still to be solved. In addition, it has shown a high degree of political instability during the years associated with its most rapid economic development. Pakistan has a long tradition of overall planning based on a mix of private enterprise and state initiative.

Furthermore pertinent statistical and other economic data are comparatively abundant and reliable.

One of the most remarkable features of Pakistani economic development has been the significant GDP growth rate of the country, which at the time of independence in 1947 had practically no industry worth mentioning. Both the private and public sectors played key positive role in the development of the country since its independence. However, both the sectors, by the same token, bear a considerable responsibility for shortfalls in Pakistan's economic performance and achievements. It is worth noting that the foreign resource inflows, whether in the form of pure aid, concessional loans or commercial borrowing, have played significant roles in accelerating economic growth and at the same time in putting the country in precarious positions at many critical occasions. Thus, how and how far foreign aid has affected Pakistan's growth performance is the fundamental question for this study. The task is by no means simple as there are difficult conceptual problems: defining foreign assistance, distinguishing it from other kinds of international resource transfers, determining its effect on economic growth and deriving meaningful criteria for appraising foreign aid results. And there are parallel difficulties of measurement and statistical testing.

Subject to such constraints as mentioned above, the analysis proceeds in Chapter 2 in the form of the review of selected past studies on the aid definition, aid effectiveness and debt repayment capacity. Chapter 3 then presents the overview of Pakistan economy in terms of history of economic growth and aid flows, the interaction of foreign aid with economic growth and the role of foreign aid in the balance of payments and budget deficit.

In Chapter 4 an attempt is made to examine the effectiveness of external resources received in Pakistan during the past three decades. The effectiveness of foreign aid is analyzed by studying its impact on GDP growth rate, the extent of poverty and income inequality in Pakistan. The analysis of aid effectiveness in acceleration of growth is based on a theoretical model of public sector behaviour developed on the lines suggested in Heller (1975) and Mosley & Hudson (1995).

Since the practice of reliance on foreign aid can lead to growing burden of external debt, the role of foreign aid cannot be completely understood without studying the patterns of debt burden on the country under consideration. Thus, in Chapter 5 we analyze the pattern of debt and the associated burden on the economy of Pakistan in terms of various ratios. Various debt-burden and debt-service indicators are examined to highlight features of Pakistan's external debt obligations. Further we evaluate the debt-servicing capacity of Pakistan by using the method of comparing benefits and costs of external loans in the growth process. In this context we use the method of finding the critical interest rate (CIR) to compare costs and benefits of external loans.

Keeping in view pattern of debt indicators and debt-servicing capacity of the country using the CIR approach, it has in reality become increasingly difficult for the country to negotiate any substantial debt and aid from its richer partners. Thus, the policy of debt management and some recommendations regarding debt management are also discussed at some length in Chapter 5.

Finally in Chapter 6, we use simple algebraic formulation of growth models to analyze how the need for additional external borrowing may be eliminated from the

economy over the long run. This model is an alternative of the earlier models developed in Chenry & Strout (1966), Chenry & Carter (1973) and Healey (1971).

To sum up, the thesis revolves around the following specific objectives.

- Overview of the economy of Pakistan with reference to growth performance and trends and structure of aid inflows in Pakistan;
- Determination of the effectiveness of aid in promoting economic growth in Pakistan on the basis of informal and formal (theory based) econometric analyses;
- Determination of aid effectiveness in promoting income equality;
- Examining the role of aid in poverty alleviation or poverty elevation;
- Understanding of the size and dimensions of external debt;
- Assessment of the debt servicing capacity of Pakistan;
- Analysis of the issues in debt management practices in Pakistan;
- Evaluation of the debt retirement capacity of Pakistan;

Various issues relating to aid and debt in Pakistan, as mentioned above, are analyzed on the basis of annual time series data over the period 1972-73 to 1999-2000. We have chosen this period for most of our statistical analysis because during this period many significant changes in the development of Pakistan's economic policies with regard to foreign aid have taken place.

Chapter 2

REVIEW OF SELECTED PAST STUDIES

2.1: AID DEFINITION

The fundamental idea of aid is transfer of resources on concessional terms i.e. on terms more generous or "softer" than loans obtainable in the world's capital markets (Nafziger, 1990). For our analysis the word aid is used in the strict sense of official development assistance (ODA). The money volume of official development assistance includes bilateral grants, loans, and technical assistance as well as the multilateral flows. Foreign aid qualifies as ODA on three criteria; it has to be undertaken by official agencies: it has to seek promotion of economic development and welfare as its main objective; and it has to have a grant element of twenty five percent or more. The grant element measures the degree of concessionality of an aid transfer compared with market terms, which are normally taken to include a rate of interest on foreign aid.

Thus, an outright grant of aid has a 100 percent grant element; a loan at some interest rate has a zero grant element; a soft loan will lie somewhere in between. The maturity of a loan (the number of years over which it is repaid) and its grace period (the interval before repayment starts) also affect the measured grant element. This definition of aid excludes some concessional flows, namely those of the private voluntary agencies (Meir, 1990).

In principle, the definition of foreign aid should include all government resource transfers from one country to another. However this is not the case. Many resource transfers can take a disguised form like granting of preferential tariffs by developed countries to Third World exports of manufactured goods. This permits less developed

countries to sell their manufactured products in the markets of developed countries at prices higher than would otherwise be possible. Consequently less developed countries enjoy net gain which amounts to a real resource transfer to them. Such implicit capital transfers, or disguised flows, should be counted in quantifying foreign aid flows. Normally, however, they are not included in foreign aid. In any case, economists have defined any flow of capital to LDCs that meets the above-mentioned three criteria as foreign aid (Adelman and Chenry, 1966; Pack and Pack, 1990; Mosley et.al; 1995).

The above definition of aid, however, may not be appropriate as it could include military aid, which is both non-commercial and concessional. In general, military aid is not normally included in international economic measurement of foreign aid flows (Meir, 1990; Cassen, 1994). However, now widely used and accepted concept of foreign aid is the one that includes all official grants and concessional loans that are broadly aimed at transferring resources from developed to less developed nations on grounds of development or income distribution. Just as there are conceptual problems associated with the definition of foreign aid, so too there are problems of calculating actual development assistance flows (White, 1992; Mosley et.al; 1995). In this study aid refers conclusively to the long-term development assistance and not to emergency or relief aid, although official contributions for such purposes are included in the overall figures of aid. Thus official financial flows are traditionally classified as concessional on the basis of the Organisation of Economic Co-operation and Development (OECD`s) Official Development Assistance (ODA) classification, and aid flows are traditionally measured by the corresponding net ODA statistics.

According to Chang, Arias and Serven (1999), the methodology underlying net ODA aggregates suffers from a number of shortcomings. They argue that conventional measures of aid are not designed to estimate the overall aid content of financial flows. Furthermore, they typically overstate the grant elements of concessional loans, thus understating relative aid flows to recipients getting mostly grants and from donors also giving mostly grants (and loans in high-yield currencies). Chang, Fernández-Arias, and Servén analyze the methodological shortcomings of conventional measures of aid and propose a new approach, which measures official aid flows as the sum of grants and the grant-equivalents of official loans (in a new aggregate they call Effective Development Assistance (EDA).

Consequently, the analysis of aid flows needs to be revisited in the light of more satisfactory measures based on improved methodologies. Chang, Arias and Serven (1999) analyzed the nature of the improvements in aid measurement and illustrated the new approach with a comparative assessment of the overall trends in aid flows to 133 developing economies. However, as World Bank's *Global Development Finance* uses Net ODA information to analyze trends in aid flows over time as well as across recipients and donors, so we also use the traditional methodology to measure aid flows for our analysis. Also the official data available on foreign aid is given using the traditional counting, so we follow the traditional World Bank's measures of aid flow.[1]

2.2: AID EFFECTIVENESS

The concept of effectiveness of foreign aid is concerned in essence with its effectiveness in development and not with other motives of donors or recipients. There

[1] A new approach to measuring aid flows—Effective Development Assistance—focuses on the overall grant equivalent of official financial flows and allows meaningful comparisons of recipients or donors.

are two different, if overlapping reasons for wanting to know the effectiveness of aid. One is for reaching the judgements as to how worthwhile is the given aid: governments, masses and aid agencies all need to know whether and how far aid succeeds in its objectives and therefore deserves support. The other is to assist aid management.

Since its origin half a century ago, overseas aid has been subjected to numerous reviews with often mutually contradictory results. A summary of the trend of this debate leads us to explain the focus and methodology of our own inquiry with reference to Pakistan's economy.

A large body of literature on foreign aid (e.g. Griffin, 1970; Griffin and Enos, 1970; Tendulkar, 1971; Rana and Dowling, 1988; Synder, 1990; Richel, 1995; Mosley and Hudson, 1995), often ideological in nature, exists, which claims that foreign aid has no effects or largely harmful effects on recipient countries. This literature also reveals that it is not only the opponents but also the proponents of aid who have been troubled by the widely acknowledged theoretical possibility of aid being fungible. Although the proponents of foreign aid give its raison d`etre on multiple grounds like two-gap model, bottlenecks in the management and skill personnel, training of manpower and the acquisition of new technology, they are now coming to the conclusion that it harms recipient countries by creating debt and widening income inequalities through promotion of capital intensive and labour-conserving techniques of production in the presence of unemployment and underemployment (Nafziger, 1990; Todaro, 1991). Critics of aid, both from its proponents and opponents have emphasized the fact that aid has made the poor worse off and has increased inequalities.

It is important to note that all the past important works published on aid (Cassen et al., 1990; Riddell, 1987; Mosley, 1987; Kruger, 1989; Browne, 1990) express reservations about performance and ability of aid in alleviating poverty despite its being otherwise pro-poor. Having oscillated between extremes of optimism and pessimism, the debate over the effectiveness of foreign aid has now saddled on pragmatic views, in which it is accepted that while aid can be effective at micro level, it may not be so at the macro level. Most findings on aid effectiveness at micro-level are good whereas most of them at macro level do not favour aid. Most of the literature has considered the issue of the effectiveness of foreign aid from a project perspective.[2] The studies find that foreign aid-based projects have either ignored the poor, or in some cases have actually contributed to their poverty.

If the macro-economic benefits of foreign aid are less than the sum of its micro-economic benefits, then people who are not project beneficiaries are probably made worse off through aid because the macro-economic effects of aid, such as price increases, will adversely affect the whole population. Unless it is maintained that aid projects yield real aggregate benefits, the distributional implications of aid inflows may indicate an insignificant relationship between aid and economic growth (Pack and Pack 1990).

The impact of foreign aid on macroeconomic variables like saving and GDP growth rate are considered as the main indicators of its effectiveness. Though donors have become increasingly interested in macroeconomic environment in which their aid is being used, yet they apprise and evaluate their aid mostly at the microeconomic level. They do not ask how the aid will directly affect the recipient's macro-economy.

---

[2] White (1992) and Mosely et.al; (1995) give explanations of Macro-Micro paradox in the effectiveness of foreign aid.

Thus, a large part of literature on aid effectiveness may be classified in various ways. However, its most important classification is with reference to microeconomic evaluation of projects and macroeconomic assessment of aid's impact. On the whole, micro-economic evaluations of aid have reported its economic rates of return well in excess of market interest rates (Cassen, 1986). But these evaluations relate only to individual projects and so they do not represent the overall picture of the effectiveness of foreign aid. However, the macro-economic work on aid effectiveness, with the early exception of Papanek (1973); Stoneman (1975); Dowling and Ulrich (1982); and Gupta and Islam (1983), unanimously holds that the linkage between aid inflows and formation of physical or material capital in the recipient country is complex, in particular because of the possibility of aid inflows substituting for capital formation in the public or private sector of the recipient country (Mosley, 1986; Riddle, 1987; Adams et al, 1990; Newlyn, 1990; White, 1992). The impact of foreign aid based on the typical values of partial regression coefficient of aid on growth in some of the studies made over the past thirty years may be ascertained from the Table 2.1.

TABLE 2.1

Estimated partial impact of aid on growth, various studies, 1960-1999.

Investigator	Coefficient	t-value	Sample	Other variables in regression
Papanek, 1973	0.40 (1960s)	5.90	All LDCs	P,s,x
Voivodas, 1973	-0.01 (1960s)	0.20	All LDCs	None
Mosley , 1980	-0.01 (1970s)	1.85	All LDCs	S,x,I
Mosley et al, 1987	-0.03(1970s) 0.01 (1980s)	0.32 0.07	All LDCs	S,x,I
Boone, 1994	0.001(1970-90)	0.03	98 LDCs	P,t,d,regional dummies
Khan, 1997	-0.37(1972-88)	1.28	Pakistan	FDI,Infl,TOT
Saleem, 1999	0.63 (1972-99)	1.72	Pakistan	X,s,dummies

Source: White (1992), expanded and updated.

Table 2.1 shows that the precise relationship between external debt and economic growth is contentious, where s is savings as percentage of GDP, x growth rate of exports (dollar value), l growth rate of literacy, p population growth, t terms of trade, d index of debt crisis, FDI Foreign Direct Investment, Infl Inflation and TOT is Terms of trade.

Now there are two distinctive groups of economists with diametrically opposed notions about the relationship between external debt and economic growth. These groups also differ on the modus operandi of adoption of debt strategies and other international facilities for debt relief.

Sachs (1990) and Kenen (1990) take a hard line view and explain with the help of a neat analytical framework that external debt overhang is a major cause of stunted economic growth experienced by heavily indebted countries of the world. Hence there is an urgent need for debt reduction and debt relief facility to unshackle economic growth of such countries. Bullow and Rogoff (1990) argue that the external debts of developing countries are symptoms of poor economic management and performance rather than a primary cause of stifled growth, represent the opposite view.[3]

As such, the subject of the effect of foreign aid on economic growth is important but its theoretical and empirical positions can be quite diverse.[4] Direct empirical assessments on the issue seem to give different results.

There is great divergence of opinion as to how foreign aid is theoretically helpful to a nation. The basis for the economic theory behind aid and the relationship between foreign assistance and economic development was laid out by Chenry and Strout (1966).

---

[3] Two more papers, one by Gang and Khan (1988), the other by Cashel-Cordo and Graig (1990) deal with the isues of debt management empirically, at a very high level of aggregation.

They used a variation of Harrod-Domar growth model where growth is function of rate of savings and the incremental capital- output ratio. They construct what became known as "two-gap" model, which shows that growth can be limited by savings and foreign exchange constraints. The theory suggests that foreign assistance i.e. the injection of foreign savings can relieve some of the problems and increase growth and thus development.

There has been much debate as to the validity of Chenry and Strout's basic assumption that foreign assistance eases the savings constraint on growth by providing resources for investment that can supplement domestic resources, and thus raise the growth rate. Giffin (1971) maintains, " it is possible that capital imports, rather than accelerating development, have in some cases retarded it". The results depend upon how the transfer of resources is used. Giifin finds that foreign capital tends to be used to increase consumption and not investment, and may actually " reduce domestic savings by stimulating the consumption of importable and exportable".

Griffin and Enos (1970) use econometric regressions to show that foreign savings often supplant rather than supplement or increase domestic savings. Private domestic savings may decline, if, for example, soft financing from aid pushes down the market interest rate. They find " no support for the view that aid encourages growth" (if growth is related to the assistance received). They contend that " in general, foreign assistance is not associated with progress, and in deed may deter it", by lowering domestic savings, distorting the composition of investment and thus raising the capital-output ratio, "

[4] Review of empirical aid literature emphasize the need for time series analysis of individual countries (Riddle, 1987 and Mosely, 1987)

frustrating the emergence of an indigenous entrepreneurial class, and by inhibiting institutional reforms".

In addition, other studies find that there is no particular or predictable effect on domestic savings from an inflow of capital resources (Riddell 1987, pp.112-113). The evidence of economic performance of most countries receiving aid in the 1980s is that aid has not promoted significant economic growth (Cassen, et al. 1986).[5] Papanek (1972) finds that quantitative analyses do not support a " negative causal relationship between foreign inflows and savings," but that causality is more complex than the studies have assumed, that a more sophisticated saving function is needed, and that the relationship should be explored for individual countries and not cross-sectional.

According to Riddell (1987), the debate about the theoretical assumption behind foreign aid has led to several changes in the presentation of the theory. The possibility of consumption-leakage has been added to the model, and there is at least recognition that the assumptions about the role of recipient governments acting to maximize growth need to be questioned if not revised. In response to the critiques, Chenry and Carter (1973), for example, find that when there are other constraints in addition to or instead of the savings gap (in particular a trade constraint) a negative relationship between foreign capital inflow and domestic savings can be expected. They suggest, however, that the relationship is only indirect, and that even though consumption will be raised there will still be investment and the "productivity of external capital" will be " very high". They

[5] In the 1960s and 1970s, however, the evidence was more ambiguous. There were some success stories from aid. Chenry and Carter, for example, were able to say in 1973 that despite the problems or weaknesses of aid, " the overall performance of developing countries has generally lived up to the expectations of the early 1960s" i.e. aid can promote growth.

conclude that majority of cases are those where saving rates increased because of aid-supported growth.

The debate on foreign aid, savings and GDP growth basically revolves around dual gap model based on Harrod-Domar Growth Model which has been central to the analysis of macro-economic impact of foreign aid. The Harrod-Domar dual gap model, in which the shortage of capital assumes the critical constraint on growth, is applied to show how the lack of capital could make its impact felt in one of two ways: with the one through the saving gap and the other through the foreign exchange gap. In the presence of saving gap the macro impact of foreign aid is straightforward. Aid provides a one-for-one increment to the capital stock which, by operating through the Harrod-Domar mechanism, leads directly to a higher growth rate. A foreign exchange constraint applies where export earnings are insufficient to cover the bill for imports required complementing domestic capital in production. Once again, the way the aid acts on economic growth is clear. Aid will have a larger impact when a foreign exchange constitutes a binding constraint as it not only brings additional capital but also allows domestic capital that is otherwise redundant to be brought into production (White, 1992).

However, critics (e.g. Joshi, 1970; Findlay, 1973; Lele and Nabi, 1991; Barro, 1991; Fischer, 1991; Levine and Renellt, 1992) have pointed out a number of inadequacies in the model that help explain why aid does not automatically lead to higher growth. It is unrealistic to assume that aid will provide a one-to-one increment to the capital stock, as there are many mechanisms through which aid may displace domestic capital accumulation.[6]

[6] For example, a negative relationship may exist between an aid inflow and private investment. There can be possibility that public investment is sufficiently more productive than private investment.

Indeed, a simple correlation between aid inflows and growth performance is puzzling in itself. Critics have pointed to a number of inadequacies in Harrod-Domar model that help explain why aid does not automatically lead to higher growth (Griffin, 1970: Mosley, 1980, 1987: Mosley and Hudson, 1984: White, 1992a). Three of these criticisms are as follows: First, it is a sticky model, with no substitution in production (either between factors to relieve capital shortage or to reallocate factors between sectors). This point was made at the time (e.g. Joshi, 1970 and Findlay, 1970) but the main body of aid effectiveness debate did not pick it up. Second, the Harrod-Domar model is too simplistic a representation of the growth process. Many other factors like human capital besides capital accumulation affect growth. Finally the two-gap model does not incorporate any mechanism by which aid may be matched by one-for-one increase in investment, government development expenditures or foreign exchange.

The views of the critics laid the foundation for subsequent work asserting that Harrod-Domar Growth model is excessively structuralist and there is no scope for substitution in production, (Joshi, 1970: Findlay, 1973).

The saving-investment gap is the focus of saving debate in aid's macro-economic impact. The theoretical basis of radical position in the saving debate is usually associated with Keith Griffin (1970) and Griffin and Enos (1970). They argued that an anticipated aid inflow will be treated as an increase in income and so allocated between both saving and consumption unless the marginal propensity to save is one. Therefore investment will rise by less than the value of the aid inflow. By national accounting conventions, the aid inflow constitutes foreign savings and as total savings have not risen by this whole amount, domestic savings must have fallen. There is, therefore, a negative relationship

between aid and domestic savings, which has already been confirmed from regression analysis of both cross-section and time-series data (Areskoug, 1969, 1973; Chenry and Eckstein, 1970; Griffin, 1970; Stewart, 1971; Grinols and Bhagwati, 1976; Mosley, 1980; Cassen, 1989; White, 1992).

Although major proportion of literature on the saving debate of aid's impact is empirical, the original argument has some theoretical problems (Papanek, 1972; El Shibly, 1984; Rahman, 1984; Bowles, 1987; and Morriset, 1989). First, the relative importance of aid in funding investment or development expenditures is not certain since aid is simply not fungible in the way it is traditionally accounted for. Second, simple macroeconomic theory would imply that there would be an aid multiplier of greater than unity, so that the income will rise more than the value of the aid inflow. Under such circumstances aid can increase current consumption without decreasing domestic savings. However, whether or not this is actually the case is an empirical matter.

The failure to explain adequately the mechanism through which aid will displace savings has been partly remedied by models that explicitly show the behavior of recipient government. The original work in this regard was put up by Heller (1975) and further modified by Mosley (1987). In these models, government minimizes a loss function comprising a range of target variables like government investment and consumption (development and non-development expenditures), borrowing and taxes. The theoretical expectation is that an aid inflow will be spread across this range of uses, thus confirming the view that aid will not simply add to investment.

The existing empirical literature, which accounts for a recent surge of economist's interest in the macroeconomics of aid, is yet inconclusive (White, 1992). Much effort has

been made by donors in an attempt to persuade recipients to reform their economic policy on the presumption that this will have a favorable impact on saving, investment, exports and other social indicators, and thus on aid effectiveness. However, we have little information on whether or not this has in fact happened. And, in spite of the bleak macroeconomic evidence on the performance of aid so far, all prescriptions for Pakistan at least, recommend that its problem can be eased if there is an increase in aid flows. It seems urgent to ascertain whether this presents a potentially meaningful strategy, or simply the triumph of hope over experience.

2.3: ABSORPTIVE CAPACITY, DEBT CAPACITY AND DEBT MANAGEMENT

In general, absorptive capacity signifies ability of a country to use capital productively regardless of its source. When considered in the context of foreign aid including remittances and technical assistance, the absorptive capacity may be defined differently. As aid is characterized by many alternative uses other than capital/technical assistance, the term may, depending on donor restrictions, mean the recipient country's capacity to program and use foreign assistance in a manner acceptable to donors irrespective of its being utilized for capital or technical-assistance projects, for financing of current imports or for meeting the budget deficit and debt relief, etc. In fact, the diversity of the concept of absorptive capacity has made it to mean different things to different agents. The agents also differ widely on ways in which the concept of absorptive capacity for foreign aid may have precluded the efficient utilization of foreign aid in the host countries.[7]

[7] For a detailed discussion of different concepts of absorptive capacity with reference to foreign aid, see Feder, 1978; Feder et al, 1977, 1981; .

Further, the interpretations of absorptive capacity by donors and recipients are poles apart. Thus the absorptive capacity and the relevance of its components as viewed by donors and recipients become all the more important in analyzing the use and impact of resources received from abroad. Although the term of absorptive capacity surfaces frequently in literature, discussed in meetings and considered during negotiations of foreign aid, it assumes different meanings in different contexts: It is related to specific research objectives (Adler, 1965), to the administrative efficiency of the recipient country, to the availability of technical manpower and technical skills in the host country (Healey, 1971), to the limit on investment ability (Chenery and Srinivasan, 1989), etc.

Absorptive capacity of a country may also be expressed in absolute terms or in relation to GNP. Chenery and Strout (1966) have used, in their two-gap model, the compound growth of investment for any five-year period in the past decade as a measure of absorptive capacity of the given country.

Similarly the amount of investment consistent with absorptive capacity is distinguished from the amount of investment required to achieve an output growth target for which domestic savings or foreign savings may be available. As such, the absorptive capacity may not be equal to the required investment. However, if the amount of investment consistent with the absorptive capacity is less than the required investment for target output growth, an absorptive-capacity gap rather than a resource gap may occur in the country that may constrain growth.

There can be a limit on investment ability or on absorptive capacity for additional investment due to the limitations of the supply of inputs complementary to investment, which can only be increased as a result of the development process (Adler, 1965). The

limit on the supply of complementary inputs which, in turn, limits the ability to invest, is referred to as the "skill limit – reflecting the limit on skill formation required from managers, skilled labor, and civil servants in order to increase productive investment (Chenry and Srinivasan, 1989).

It may be realized that saving is inevitable for investment. However, saving depends on available incentives, which may, in turn, be affected by the ability to invest. Rodan (1961) suggested the use of observed savings effort, indicated by the existence or widening of the deviation between marginal and average rates of savings, as an index for estimating absorptive capacity.

External capital, if its use is not restricted, may increase productive investment opportunities or the rate of return on capital and thereby the absorptive capacity of a country. The reason is that availability of foreign exchange associated with an inflow of foreign capital enhances access to the locally unavailable or insufficient "co operant factors" complementary to capital, such as technology, skills, critical production inputs, etc. (Adler, 1965).

The amount of foreign aid consistent with the absorptive capacity of a country, which can be used to finance investment at acceptable rate of return, is not to be confused with the foreign aid required to close the resource-gap for achieving the desired economic growth targets. Even if foreign aid supplements domestic savings, it may not be absorbed because of limited investment opportunities. In such a situation, the absorptive capacity-gap rather than the resource-gap limits economic growth. The difficulty does not lie as much in creating foreign financing as in generating, recognizing, and demonstrating investment opportunities. If a country's ability to make productive investment is limited

by the shortage of skilled workers, managers, technical personnel and civil servants for project identification and preparation and evaluation, part of aid may be used to "discover" promising investment opportunities (Healey, 1971).

When aid is available not only for investment financing but also for other purposes, then the other factors, not necessarily related to the country's ability to generate, recognize and demonstrate investment opportunities, come into play. When there is a wide range of possibilities for using foreign aid, then the effectiveness of the entire machinery of the government for aid administration and for development administration becomes an important factor in determining a country's ability to absorb aid (Adler, 1965; Chenry and Strout, 1966; Feder, 1981).

A recipient country suffering from a heavy debt-service burden tends to be more discriminating in the sourcing of foreign aid. The remaining considerations are the extent to which aid is tied to end-use and procurement and the price of the commodity in the donor country relative to the world price. As the terms of aid become harder, both the ability and willingness of a recipient country to absorb it will decline. When a recipient country is faced with a heavy debt-service and has reached the stage where the net flow of resources from its creditors has been reversed (i.e. there is negative resource transfer), absorption of aid in the form of loans becomes more a matter of willingness than ability. Unless aid is provided entirely in the form of grants, the recipient country will reach a stage of reversal in aid flows i.e. when inflows from new aid are less than outflows for debt-service. The magnitude of transfer and speed with which the resource transfer is reversed depends on the terms of past aid, availability of new aid, terms of new aid and the ability and willingness of recipient country to generate a surplus (Aliber, 1980; Sachs

and Cohen, 1982). While a surplus through increased exports and more savings can be generated, but countries need to sacrifice growth for debt service (Selowsky and Vandertak, 1986). This notion of "growth sacrifice for debt-service capacity leads to two more approaches to interpret the meaning of the term debt capacity (Salop and Spitaller 1980). One is related to the question as to how much a country should borrow, i.e. what is the optimal level of borrowing. The second approach is realted to the sustainability of debt policies. In principle, what we require is the notion that the consumption plan of the country should meet its intertemporal budget constraint.[8] We can add the requirement that servicing the debt should not decrease the consumption below subsistence level.

According to simple Harrod-Domar model, foreign borrowing is required to fill the gap between the required level of investment and the level of domestic savings, and also to service outstanding debt. So it is analytically possible to derive the time path of debt and other relevant indicators. Models such as these have been widely used to measure debt-servicing capacity (Avramovic 1964; Solomon 1977; Nowzad and Richard 1981). These models have mainly discussed the cases of countries going through various stages from the position of immature debtors to finally becoming mature creditors. Howvere, there are many cases in which this transition have not taken place and where debt has grown indefinitely. In some cases, the debt situation becomes explosive. Solomon (1977) shows that the debt/output ratio will reach a finite limit only if the target rate of growth is greater than the real interest rate. So if there is no limit to the debt/output ratio, the country`s debt is not sustainable. Solomon (1977) further points out

[8] A Country's debt plans are sustainable if the present value of its future consumption plan is less than or equal to the present value of its future income stream.

that even if the debt/output ratio has a finite limit, the policies may not be sustainable and interest payments on debt could ultimately exhaust output.

However, the results provided in these models are based on rigid basic assumptions. Also, the policies describesd do not highlight efficiency of investment.[9] If the target growth rate of output is less than the real interest rate, then the debt situation is not sustainable. However, policies may be sustainable if the output/capital ratio is greater than real interest rate. The source of this conflict lies in the assumption that saving is function of output rather than income. If propensity to consume out of output is higher and domestic income to output ratio is lower, there are more chances that debt is not sustainable.

Using Harrod-Domar production framework, Kharas (1981) focuses on a situation in which governments borrow from abroad to finance domestic expeniture plans. This is because the taxing power is constrained by institutional and technical factors. The study asserts that for a debt situation to be sustainable, the tax base should be broadened to service the debt. The expansion of tax base is determined by private savings investment behaviour. Therefore, low savings behaviour is a source of debt problem in situations in which government faces such fiscal constraints. Katz (1982) and Takagi (1981) have used the models that follow the similar theme as used by Kharas (1981). However they used more flexible neoclassical production structure.

Katz (1982) showed how fiscal constraints and "low" savings behaviour can be a source of debt problems and how they can exacerbate the impact of external shocks, such as deteriorations in the terms of trade. Takagi (1981), without disggregating the

[9] In Solomon (1977) model, the marginal product of capital is constant and equal to the inverse of the capital/output ratio.

government and private sectors, specifies consumption as a function of total output plus net capital inflow. The study suggests that the domestic saving rate is affected by the size of capital inflows and that with a low saving rate, consumption exceeds income and thus give rise to the possibility of debt problems independent of the efficiency of investment.

Katz (1982) and Fischer and Frankel (1972) presented a number of nonoptimizing neoclassical growth models and analyzed debt dynamics in situations which do not give rise to explosive debt situations. They argued that explosive debt situations do not arise provided consumption is a function of income and there are no institutional rigidities such as restrictions on government`s ability to tax and there is no credit rationing in the international financial markets.

In addaition to shortage of capital in borrowing countries, Dhonte (1975) highlighted foreign exchange shortages as serious obstacle in the development programs. The debt service ratio has long been a focus of attention in this respect. Dhonte (1975) considers exports to be an appropriate base with which debt developments should be compared. He defines a country`s borrowing capacity as the ratio of borrowing to exports that is consistent with some long-term limit on the debt-service ratio. He suggested that debt growth should be kept in line with growth of exports. In this context , one needs to analyze debt ratios in relations to GNP, GDP, foreign exchange earnings etc. Loser (1977) argued that if there are constraints on the borrowing from international fiinancial markets, then these ratios become much more important in the context of liquidity management in debt ridden countries.

Loser (1977) focused on the implications of current account limitations for internal economic policy. He argued that exports growth may be serving as a proxy for

the quality of domestic economic management as successful development programs are accompanied by rapidly growing exports sectors. Leimone (1979) showed that countries having more external finance have had above average GDP and export growth rates. Thus indicator approach to debt capacity remained a focus of attention in the literature concerning debt capacity and debt management. Thus the debt capacity is discussed typically in the context of growth model and these models point out the sources of debt sustainability problems.

In the light of the findings of these studies, we are provoked to assess the effectiveness of foreign aid in the economy of Pakistan. In this context aid effectiveness is analyzed specifically in terms of aid imapct on GDP growth, on domestic savings, on private investment and on poverty. Our study has analyzed external debt, debt service liabilities and debt-repayment capacity of Pakistan. Succinctly, it has assessed whether its debt is sustainable and what is its long-run debt-servicing capacity. The incidence of external debt service liability is estimated on the basis of different debt-burden and debt-service indicators of indebtedness. Applying the critical interest approach of analysis has assessed the long-run debt repayment capacity.

Chapter 3

FOREIGN AID AND ECONOMIC GROWTH IN PAKISTAN-AN OVERVIEW

3.1: INTRODUCTION

While there are a number of important issues that one needs to be aware of when evaluating the record of Pakistan's dependence on foreign aid in the last over fifty years, the analysis remains incomplete unless one examines the consequences and results of economic growth. Pakistan's impressive economic record is always contrasted with its dismal performance in the social sectors, in absolute terms and also relative to comparable countries. In contrast countries like Cuba and Vietnam have economic statistics that deem to be less impressive than those for Pakistan, but both countries have eradicated illiteracy and have statistics in the health sector that are comparable to many developed countries.

Probably the most striking factor that is manifested in view of Pakistan in the year 2000 compared to 1947 is that Pakistan today is less than half of the country it was in 1947. In 1949-50, 55 percent of Pakistan's population lived in what was then East Pakistan, making it the majority province in terms of population. The contribution made by East Pakistan to Pakistan's economy and society was huge. No matter how significant this loss, post-1971 Pakistan seems to have moved on from the history of its first twenty-five years.

In 1947 Pakistan had every reason to be called an agricultural country. At the time of independence, the major share of (West) Pakistan's gross domestic product was from agriculture, which contributed around 53 percent, compared to 7.8 percent from manufacturing and 11.9 percent from retail trade. More than 65 percent of Pakistan's

labor force worked in agriculture, and almost all of Pakistan's exports consisted of primary products, essentially agricultural commodities like jute and tea, which, not surprisingly, originated from East Pakistan. However, the saying that Pakistan is basically an agricultural country is no longer true. Now, agriculture contributes a mere 24 percent towards GDP, while manufacturing is up to 26.4 percent. The services sector has replaced agriculture as the dominant sector of the economy, contributing near half of total GDP. The population employed in agriculture has also fallen, although at around 47 percent of the total labor force; agriculture is the biggest sector in terms of the employed labor force. More importantly, the nature of exports from Pakistan has also changed dramatically from 99.2 percent of total exports in 1947; primary commodities now constitute only around 16 percent. However, one must emphasize the fact that, although 62 percent of Pakistan's exports are now manufactured goods, with textiles, garments, and yarn making up most of them, most of Pakistan's exports still depend critically on the traditional raw cotton.

Today almost 40 percent people of Pakistan live in urban areas. This shift has major repercussions for the economy, society and the political process under way. In fact, in the context of Pakistan, perhaps the most important political factor over the last few decades has been the process and extent of urbanisation and the emergence, and perhaps consolidation, of a middle class. With around 40 percent of the country's population living in cities and towns, the economic profile, in terms of consumption and production patterns, has also changed quite drastically. The impact of urbanisation on social and economic development is also very significant (GOP, 1951-1999).

3.2: FIFTY YEARS OF PAKISTAN ECONOMY

The fifty-years, since 1947, can be distinguished by five specific eras. These eras represent different economic policies, planning and management choices. The first eleven years, from 1947 to 1958, are the years when the country and economy were trying to settle down. This period was followed by what may still be called the golden era of economic development (or at least economic growth) in the "Decade of Development" under Ayub Khan. The economy and the political scene had indeed stabilized and settled down, with the result that growth rates were unprecedented, and Pakistan was considered to be one of the few countries at that time which would achieve the status of a developed country. With the war of liberation in East Pakistan, the majority wing left Pakistan to form Bangladesh in 1971.

Post-1971 Pakistan was a new country in every respect, compared to the one that existed between 1947 and 1971. The third brief, albeit highly significant era in Pakistan's history was the five-and-a-half year period of Zulfiqar Ali Bhutto. His populism or Islamic Socialism, or just plain articulation, made him the most popular, and at that time the only elected leader to emerge in what was left of Pakistan. His rule ended with the imposition of Pakistan's second martial law under General Zia-ul-Haq in 1977. There were some similarities between the first and the second martial law, but the world was now a very different place compared with the 1960s. The opening up of the Middle East, the Afghan War (with its consequences of drug and arms culture in Pakistan), attempts at the Islamization of the economy and society, and praetorian sort of democracy between 1985 and 1988, were amongst the salient features of the Zia era.

The death of General Zia in many ways brought about the end of the old Pakistan and the year 1988 signalled the third birth of the nation after 1947 and 1971. While political and social changes were fast to emerge, the post 1988 economic changes and programs also represented a departure from the past, with very significant impacts on society, many of which were highly deleterious.

In 1947 Pakistan was, indeed, a predominantly agrarian, undeveloped, newly independent nation, with little industry, few services, and poor infrastructure. The first decade of economic policy and planning witnessed the attempts of bureaucracy to keep Pakistan on its feet. The Herculean task of building an economic base was left to the state sector as the private sector was still in infancy and did not have the capacity to lead an industrial revolution in the country. It was the windfall gain made by the mercantile class during and after the Korean War in 1952 that paved the way for the foundation of industry, an industry which the state sector helped develop and then handed over to the private sector.

If one examines the record of economic growth in Pakistan, the best performance period was 1960s as shown in Table 3.1.

TABLE 3.1

Annual Average Growth Performance of Selected Sectors in Pakistan (1960-1998)
(in percentage)

Indicator	1960s	1970s	1980s	1990s
GDP	6.77	4.84	6.45	4.70
Agriculture	5.07	2.37	5.44	4.09
Manufacturing	13.93	5.50	8.21	4.95
Commodity-producing sector	6.83	3.88	6.49	4.67
Service sector	6.74	6.26	6.65	4.75

Source: Government of Pakistan, Economic Survey (various issues)

These figures in Table 3.1 give useful indication of the nature of the differences between the 1960s 1970s, 1980s and 1990s. While the rates of growth for the 1960s and the 1980s seem to be quite close in most categories, there are important conceptual and ideological differences in the modes of development under the two military regimes.

3.2.1: THE DECADE OF DEVELOPMENT (1960s)

The decade of 1960s have been termed as a controversial decade for the type of economic policy pursued, and the resulting economic and political effects. Many economists and social scientists (e.g. Khan and Naqvi, 1989; Khan, 1991; Hussain, 1999; Zaidi, 1999) have written about Ayub Khan's era and they are generally agreed that considerable economic growth and development took place in that period. They argue that significant leaps were made in industrial and agricultural production, with the large scale manufacturing sector exhibiting growth rates in excess of 20 percent per annum. In the first five years of the Ayub rule, manufacturing grew by as much as 17 percent per annum. In the second half of Ayub Khan's rule, agricultural growth increased by 6 percent while industry grew by 10 percent. Table 3.1 shows that the economy in general, and the different individual sectors in particular, grew by extraordinary rates, and Pakistan was considered to be a model developing capitalist country in the 1960s.

There was tremendous growth, but there was also increasing disparity across classes and regions. The social sector was neglected, social equity was of little concern and there was little to no increase in the level of real wages. Functional inequality was the preferred philosophy of Mahub-ul-Haq and Ayub Khan's Harvard Advisory Group, the architect of development planning in the 1960s. Their focus of strategy was on the rich,

who were supposed to generate more savings, and thus were to be the motors of capitalist growth and development.

However, what is most interesting about Ayub Khan's era is the fact that the economic policies were thoroughly illiberal, and were almost the opposite of what is being termed economic liberalism today. It was capitalism, and the private sector did play a significant role, but it was a guided, bureaucratically governed and directed capitalism. However, despite many constraints on setting up industries, red tape, and numerous hurdles in financial and industrial policy did not stop the impressive growth in that period. The nature of the economy was precisely what it should not have been according to the doctrine of economic liberalism and liberalization. Trade was highly controlled and closed. The exchange rate was overvalued and it distorted local markets. Financial capital was rationed, and the stock market was a playground for a handful of agents. The government's presence was everywhere, directing the private sector and the market. The government emphatically identified the agricultural sector as a vehicle for growth and many policies were adopted to generate the impressive GDP growth figures.

3.2.2: THE PERIOD OF TURBULENCES AND SOCIAL REFORMS (1970s)

The litany against the massive income inequalities and the large amount of wealth accumulated by private industrialists during the Ayub years found its voice in Bhutto`s populist reforms. Bhutto`s idea was to establish a powerful public sector that could govern the "commanding heights" of the economy and spearhead the industrialization drive. The objective was to transform the industrialist sector by moving the economic policies from an emphasis on consumer goods to one on building a capacity in basic

industry. A critical big push by public investment rose sharply and was directed largely at the " heavy industries" of steel, fertilizers and chemicals (Hussain, 1999).

Table 3.1 shows that in the 1970s GDP grew by close to 5 percent, which indicates the need, as in the case of Ayub era, for a thorough re-examination of the economic program of Bhutto. The economic loss of East Pakistan was strongly felt. West Pakistan exported 50 percent of its goods to the eastern wing and acquired a large amount of foreign exchange from the export of raw material produced in East Pakistan. The devaluation of the Pakistani rupee by 120 percent in may 1972 brought significant dividends in terms of export growth-in one year (1972-73), despite the loss of East Pakistan's exportable produce, the West Pakistan doubled its foreign exchange earning. However, the 1973 OPEC price increases played havoc with Pakistan's import bill and the balance of payments deteriorated. Also, the period after 1973 saw a serious world-wide stagflation affecting Pakistan's exports. Recurrent domestic cotton crop failures, and floods in 1973-1974 (along with pest attacks in 1976) badly affected Pakistan's main exports. The large nationalized units taken over by Bhutto were the most inefficient in the industrial sector. Despite all this hurly-burly, industry experienced a reasonable growth rate, with the nationalized sector doing better than what most believe. The nationalization of large-scale manufacturing industries had an unanticipated beneficial effect. It led to a rapid diversion of private investment to small-scale enterprises. The official statistics show that, while the share of large-scale manufacturing declined from 12.6 to 10.7 percent of GDP between 1971 and 1977, the corresponding share of small-scale manufacturing rose from 3.8 to 4.5 percent, and private investment in this sub sector was also positive. The growth rate of small-scale manufacturing was 10 percent per annum in

this period compared to 4.2 percent for the large-scale sub-sector (Ahmed and Rashid, 1984).

One of the most unfavorable trends for the Pakistan economy in the Bhutto years was the inconsistent policy in the agriculture sector. Throughout the 1970s, the agriculture sector was plagued by stagnation, inter-crop disequilibria and a relative neglect of the non-crop sector (Naqvi and Sarmad, 1984). Agricultural growth slowed during much of the decade due to combination of exogenous and policy factors such as viral diseases of crops, shortage of critical imported agricultural inputs, inadequate supplies of water and fertilizer and government pricing policy continued to discriminate against the agricultural sector by setting output prices well below those in international markets. Though Pakistan Peoples Party promulgated an important land reform program in 1972, however, the land reforms failed to take effect because of the low amount of land coverage (only 1.3 million acres), the small number of beneficiaries (76,000), weak implementation and a series of transfer of land to non-existent relatives that helped many landlords avoid the reforms (Khan et al. 1989). The only noteworthy feature was a provision to safeguard the rights of the tenant from landlord abuse. However, in spite of this, land reforms did not make any significant dent in the inequities in agrarian structure.

Bhutto's government also laid the foundations for future growth and development from which his successors benefited. Basic industries were set up and a base for a capital goods industry was established which resulted in subsequent growth. The Middle East boom, that Bhutto initiated, is one of the positive features of the 1970s. There was a large increase in worker's remittances from Pakistani labourers in the Persian Gulf. These remittances increased exponentially from $ 136 million in 1972 to $ 1,744 million by

1980, and were huge blessing to the economy. The out migration of labour led to an inflow of capital, which greatly helped Pakistan to alleviate its balance of payments difficulties.

In sum, the 1970s was characterized by combination of macroeconomic shocks, a mistaken nationalization campaign and neglect of agriculture. The most positive feature of the Bhutto years was the rapid growth of the small-scale sector and the greater attention paid to protecting the rights of rural tenants and industrial workers (Hussain, 1999).

3.2.3: THE SECOND MILITARY GOVERNMENT (1980s)

The period from 1977 to 1988 coincided with the military rule of General Zia. He imposed martial law with the goals of restoring political stability and Islamization of society. He reversed the nationalization policies of the Bhutto era and attempted to liberalize the economy. While the trend to liberalize the economy was escalated consciously in the Zia period, the Soviet invasion of Afghanistan and the excessive involvement of the USA in Pakistan helped ensure that steps were taken to increase growth. Remittances from the Middle East and aid from abroad helped launch Pakistan's second economic revolution, where the middle class emerged as a formidable economic and political entity. By becoming the capitalist world's 'front line' state against all things Soviet, and especially against Soviet expansionism in the region, Pakistan's government gained in terms of financial aid and resources. Aid inflows reached $ 2 billion annually by the mid 1980s and helped reducing resource gaps and established some creditworthiness for Pakistan. These flows changed substantially over time and there was a shift in the composition of official capital inflows from grant type assistance to loans

and credits. However, General Zia's martial rule inflicted deep-rooted damage to Pakistani society. One of the negative effects of Zia's policies and Afghan war was the mushrooming of the parallel and illegal economy. The diversion of aid money, smuggling, the rise in the sale of weapons and the large drug business together created a subterranean economy that was estimated to be about 20-30 percent of GDP. Estimates put the value of illegal imports at around $ 1.5 billion in the mid 1980s. This all caused fiscal burden (deficit) to increase at the rate of 8 percent of GDP (Hussain, 1999).

The financing of deficit through non-bank borrowing avoided the twin evils: first, the monetization of the deficit leading to inflation and second, the large external borrowings leading to external debt crises. Thus, Pakistan avoided the macroeconomic destabilization that afflicted much of the Latin America in the 1980s. However, this policy created several strains on the financial system, most notably the upward pressure on interest rates (Kemal and Durdag, 1990). This also led to crowding out, with high interest rates deterring investment.

On the industrial front, the Zia regime began to deregulate and liberalize the economy to encourage private investment. The main characteristics of government policies during the 1980s were denationalization of certain public-sector projects, fiscal incentives to private sector and the liberalization of the regulatory controls. The share of private sector in total investment increased from 33 percent in 1980 to 46 percent in 1989.

The 1980s was a time of significant structural change for Pakistani agriculture (Khan, 1991). The military government, upon accession to power, started a process of deregulating of markets and production. The policies to deregulate sugar, pesticides and

fertilizer industry were adopted and removed the monopoly power of Rice and Cotton Export Corporations. It also removed the bans on the import of edible oil by the private sector. The pricing support system, which was initiated in the 1970s to stabilize the agricultural price levels, was reformed and subsidies on pesticides and fertilizers were removed. Consequently, the price system became more market oriented. In addition, there was large increase in agricultural credit, though much politicized but met the shortage of credit in the rural sector. The agriculture growth rate thus averaged around 5.4 percent that is the highest rate for any decade. The success of agriculture sector was mainly due to the spectacular performance of cotton as new varieties led to a rapid increase in yields. Cotton production doubled during the decade as higher quality seed, increased pesticide use, attractive incentives and the depreciation of the Pakistani rupee encouraged cotton growth (Faruqee, 1995). In contrast to the success story of cotton was the disastrous wheat policy. During the 1980s, Pakistan became more and more dependent on expensive wheat imports. Pakistan's import of wheat increased from 4 percent in the early 1980s to 10 percent in the late 1980s.

During 1980s, on one side worker's remittances were increasing and on the other side there was flight of capital from Pakistan. Averaging about $3 billion per year for most of the decade, these remittances accounted for 10 percent of GDP and 45 percent of current account receipts. However, in the same period, the deposits of Pakistani residents in the foreign banks increased from $ 700 million in 1981 to $ 1.7 billion by 1987.

In sum, on one side the 1980s was a decade of high population growth (3.1 percent per annum), corruption, smuggling, drugs, weapons and destruction of civil society in Pakistan, on the other hand 1980s was a period of substantial macroeconomic

stability and revival of private investment. There was a significant structural change in agriculture and industry, but the growing trade and budget deficits remained the main cause of concern for the policy makers.

3.2.4: 1988 ONWARDS AND STRUCTURAL ADJUSTMENT PROGRAM

The period from 1988 onwards witnessed the revival of democracy in Pakistan. This was a difficult transition to civilian rule after eleven dark years of military dictatorship. Since 1988 Pakistan's economy has been under the custody of the international lending agencies, the IMF and the World Bank. The economic policies labeled economic liberalization, stabilization and structural adjustment, evolved in Washington and have been imposed upon eighty countries world-wide, with Pakistan and its governments amongst the most enthusiastic adherents to the Washington Consensus. Moreover, Pakistan's governments have taken the art of subservience to new heights. An examination of World Bank and IMF documents since 1988 reveals that almost every decision of any consequence taken by the various governments that have been in power has been predetermined by the two Washington agencies, and that Pakistan has merely followed the dictates. This is evidenced also by the fact that Pakistan has seldom found the need to appoint a full-time Finance Minister, as numerous advisers on loan from the World Bank and the IMF ensure that implementation is thorough.

The main focus of the structural adjustment programs has been on the fiscal deficit. In all the long and short-term agreements with the IMF, the government of Pakistan has been told to lower its fiscal deficit to 4 percent of the GDP. Ways of achieving this have involved high taxation and cuts in public expenditure. In the period between 1997-2000, additional taxes of Rs. 140 billion have been imposed on the people

without a significant widening of the tax-base. Those who were already paying taxes have had their tax burden increased through higher sales tax and other indirect taxes, while the expansion in the number of new direct tax payers has been negligible. Despite this escalation in mainly indirect taxation, the government has been unable to meet the 4 percent deficit target, and has hence resorted to reduction in public expenditure. However, the largest cuts in public expenditure have come in the area of development. From 9.3 percent of GDP in 1981, development expenditure fell to only about 3.5 per cent in 1996-7. In the fiscal year 1996-97, the original allocation for development expenditure of a mere Rs. 105 billion was slashed further to only Rs. 85 billion.

Another key area of the adjustment program has been a reduction in tariff rates, falling from 125 percent (on average) in 1992 to 45 percent in the year 2000. Along with this, the government has been continuously raising the administered prices of utilities such as electricity, gas and petroleum products at the rates well above the inflation rate. The selling-off of the state-owned enterprises or privatization has also formed part of the adjustment package, as has the continuous devaluation of the Pakistani rupee.

The consequence of these policies has been a serious economic crisis both at the macroeconomic and microeconomic levels. The trade reforms have been responsible for the de-industrialization of the economy, with a large number of goods that were previously produced locally now being imported. By opening up the economy to foreign competition, without providing any benefits or protection to local industry, the latter has suffered, with closures and greater unemployment. Privatization has also caused the erosion of a large chunk of the previously employed workforce. The measure of success is the extent of autonomy, sovereignty, or independence that a country faces.

In a nutshell, since 1988, a significant part of economic sovereignty and independence that Pakistan may once have had has been lost. Today, Pakistan is a highly aid-dependent country with multilateral institutions playing a dominant role in both the political and economic affairs of the state, even after fifty-five years of political independence. While other countries have also made use of aid and loans, they have used that money for development purposes, unlike Pakistan, where much of the assistance have been wasted, often in dubious circumstances and in illegal and illicit channels. Many Pakistanis would question the claim made by statisticians and others, on the basis of high growth figures, that Pakistan has made huge progress; for these people, lower growth with more personal security and freedom is probably a preferred alternative. Compared to what it was in 1947, the country seems like a modern, dynamic state unlike, say, Afghanistan. Compared to other countries, such as the Southeast Asian countries of Malaysia, Thailand, and Korea, Pakistan's achievements look modest. Pakistan would necessarily have grown from whatever existed in 1947, as the country had skilled labor and sufficient natural endowments. It could and should have grown more with less dependence on external resources, given its own potential and the performance of other comparable nations.

The most important feature of the economic policies of the 1988-2001 periods is the dominance of stabilization objectives at the cost of growth. Table 3.2 shows that stabilization variables like current-account gap as a percentage of GDP and budget deficit as percentage of GDP have declined according to the objectives dictated by international donor interests.

TABLE 3.2

Selected Growth Rates and Other Macroeconomic Indicators in the 1980s and 1990s

Indicator	Decade of 80s	First half of 90s	Second half of 90s	Decade of 90s	1999-00	2000-01
GDP (market prices)	6.2	4.8	3.1	4.0	4.4	3.3
Agriculture	5.4	4.2	4.9	4.5	6.1	2.5
Manufacturing	8.2	5.8	2.0	3.9	1.8	7.1
Services	6.6	5.3	3.8	4.6	3.5	3.5
Inflation Rate	7.2	11.7	7.7	9.7	3.9	5.4
National savings as percentage of GDP	14.2	14.8	13.6	14.5		
Public Savings as percentage of GDP	1.8	2.3	2.2	2.3		
Private savings percentage of GDP	12.5	12.6	12.5	12.5		
Money/GDP Ratio	39.44	42.95	44.2	43.6	44.1	42.5
Fixed investment to GDP ratio	17.8	17.0	15.1	16.1	13.9	13.4
Public Investment to GDP	8.0	8.3	8.6	8.5	8.0	7.4
Private investment to GDP	9.8	8.7	6.5	7.6	5.9	6.0
Real exports/GDP Ratio	13.1	17.9	14.7	16.3	14.6	16.3
Real imports/GDP Ratio	20.3	17.7	16.5	17.1	14.2	13.8
Current account /GDP Ratio	4.0	4.5	4.4	4.5	1.9	1.0
Budget deficit/GDP Ratio	6.7	6.4	5.9	6.1	6.6	5.4
Exchange rate	15.6	26.8	42.7	34.8	51.7	57.2
Poverty level (head count index)	23.2	22.8	29.3	26.0	35.9	40.1
Unemployment Rate	3.5	5.4	6.0	5.7	6.2	6.7

Source: State Bank of Pakistan: *Annual Reports*, Various issues.

The current account gap as percentage of GDP has declined from an average of 4.0 – 4.5 percent in the decade of the 1980s and 1990s to 1.9 percent in 1990-2000 and further to 1.1 percent in 2000-01. Likewise, the budget deficit as percentage of GDP has declined from an average of 6.7 percent in the 1980s to 6.1 percent in the 1990s and

further to 5.4 percent in the year 2000-01. Growth variables such as GDP growth rate and fixed investment as percentage of GDP have also declined contrary to objectives dictated by the needs of the people.

The GDP growth rate has declined from an average of 6.1 percent in the 1980s to 4.4 percent in the 1990s and further to 3.3 percent in 2000-01. Likewise, fixed investment to GDP ratio has declined from an average of 16-17 percent in the 1980s and 1990s to 13-14 percent in the years 1999-2001. The past trend has shown that the inflation has attained its peak in the first half of the 1990s i.e. almost an average of 12 percent. In the second half of the previous decade inflation rate declined to an average of almost 7.7 percent and reached to 4 percent in the fiscal year 1999-2000. In the year 2000-1, there has been a slight increase in inflation, mainly because of the sharp increase in the international oil prices.

Poverty alleviation is central to the twin challenges of reviving economic growth and reducing social unevenness. The past trend show that poverty had been substantially contained in the decades of 1980s at 22 percent mark, which increased to almost 29 percent in the second half of the 1990s and further to 36 percent in the fiscal year 1999-2000. Much of this increase in poverty can be attributed to an adverse macroeconomic development in the period of 1990s. One of the key factors that contributed mainly to the increase in poverty in the 1990s is that there has been a visible decline in growth momentum as indicated above. In the fiscal year 2000-01 the incidence of poverty is estimated at about 40 percent that is worst in the past thirty years. This sharp increase in poverty is an outcome of unprecedented drought situation coupled with the low level of investment bringing the GDP growth rate to as low as 2.6 percent. The accompanying

low growth rate in the agriculture sector is the main cause of a rapid increase in the rural poverty. Unemployment has also increased in the decade of 1990s as compared to the 1980s by about 2 percentage points.

The plan-wise growth rates in different sectors of the economy are presented in Table 3.3 below: The figures in table 3.3 shows that in second plan period manufacturing sector depicted record high growth rate of 16 percent while agriculture sector grew by 3.8 percent during the same period. The 'Harvard Advisory Group' (technical assistance) played a vital and dominant role in preparing the development strategy and policy guidelines for Pakistan during the same plan period. The public investment during this period was 19.3 percent of GDP while domestic savings ratio was stood at 11.48percent. This resource gap was partially filled by the foreign aid that Pakistan has received during that period. However, in the second half of 1960s both the growth as well as foreign aid inflow declined slightly mainly as a consequence of 1965 war with India as well as economic and political uncertainty in Pakistan. But Pakistan managed to sustain growth in second half of 1960s despite the reduction of aid flows. This was made possible by the success of green revolution that led 6.3 percent annual growth of agriculture sector in Pakistan.

During the non-plan period (1970-78), Pakistan faced a numerous changes. At internal level, government adopted a nationalization policy that discouraged private investment. However, the public investment remained around 16 percent as the government had initiated gigantic public sector projects such as 'Indus Supper Highway' and 'Pakistan Steel Mills' with huge investment.

TABLE 3.3

Selected Macroeconomic Indicators In Pakistan (1960-1998)
(Annual Average)

Indicators	2nd Plan 1960-65	3rd Plan 1965-70	No plan Period 1970-78	5th Plan 1978-83	6th Plan 1983-88	7th Plan 1988-93	8th Plan 1993-98
Real GDP Growth rate	6.80	6.7	3.9	6.6	6.9	5	4.4
Agriculture. Growth Rate	3.8	6.3	1.7	4.4	3.6	3.8	4.4
Manufacturing Growth Rate	16	9.9	3.7	9.5	8.3	5.9	3.8
Public Investment (% GDP)	19.3	16.26	15.99	17.74	16.94	19	19.1
Budget Deficit (% of GDP)			9.85	5.68	7	7.2	5.92
Foreign Direct Investment (% of GDP)		0.05	0.12	0.25	0.45	0.75	1.08
Money (M1 Growth) rate	9.78	9.48	17.03	13.87	15.8	14.76	14.3
Exchange Rate	4.76	4.76	9.61	12.17	17.95	26.21	37.73
Imports (% of GDP)	14.97	11.29	16.49	22.27	2064	23.94	18.1
Exports (% of GDP)	7.31	7.31	10.95	11.8	11.7	18.9	13.4
Current Account Deficit (% GDP)		-2.24	-4.75	-2.81	-2.88	-3.55	-4.36
Inflation Rate (CPI based)	3.7	4.45	12.99	10.11	5.72	9.7	11.66
Per Capita Income (US $)	55	152	180	326.66	367.67	433.33	474
Population Growth Rate	2.73	2.93	3.13	2.75	2.61	2.5	2.42
External Debt (Mil. US $)		759.16	6390.97	11655.85	16882.3	25160.05	29884.16
Overseas development Assistance (Million US $)	411.56	402.67	580.33	858.15	1072.79	1157.63	991.168
Net Foreign Aid (%GDP)	11.11	10.58	6.58	5.25	3.28	0.11	0.02

Source: Nabi and Hamid, 1991; Government of Pakistan, 1997.
International Financial Statistics (Various issues)
Government of Pakistan, Economic Survey (various issues)

The donor opposed the government's nationalization policy and curtailed aid to Pakistan. The net transfers to Pakistan during this period reduced to 6.8 percent of GDP

as compared to around 11 percent during 1960s. The public investment, therefore, was financed through a mixture of foreign aid and deficit financing. At external level five fold increase in oil prices, world inflation due to rise in energy prices and subsequent emergence of recession brought about the major changes in manufacturing and export sectors of Pakistan (Government of Pakistan, 1990; Nabi and Hamid, 1991; Kahn, 1995). However, the worker remittances from the 'Middle East' somehow eased this burden. The net factor income from abroad increased from 0.08 percent in third plan period (1965-70) to 2.21 percent of GDP in non-plan period. The growth rate declined sharply and GDP grew by just around 4 percent while the savings ratios depicted a slight decrease. The manufacturing and agriculture sectors also depicted a sharp decline during that period and grew by 3.7 percent and 1.7 percent, respectively. The lack of fiscal and monetary discipline led to high budget and trade deficits, and double-digit inflation of around 13 percent. The largest budget deficit of 9.8 percent of GDP during this period was a result of massive increase in public sector investment in activities not matched by the corresponding rise in revenue (Haque and Montiel, 1992: Khan, 1995).

The growth tempo that was lost in the 1970s bounced back in the 1980s. The policies of gradual decontrol, deregulation and denationalization paid rich dividends as the decade of the 1980s matched the growth performance of the 1960s. These policies restored the private sector confidence but the lending program was not impressive reflecting the reduced net resource availability to around 4 percent in the 1980s compared to 11 percent in the 1960s. During the late 1980s Pakistan signed a six years agreement with the USA that resulted in massive inflow of foreign assistance to Pakistan in the form of loans and grants (Malik et al, 1994). The aid along with liberalization policies brought

fruit and Pakistan achieved a outstanding 6.3 percent of growth rate in the 1980s. The savings and investment ratios remained around 16 percent and 17 percent respectively. However the internal and external balance depicted a sharp deterioration during that period. Pakistan embarked on stabilization and structural adjustment program in order to address these structural weaknesses and to place the economy on the path to high-sustained growth, financial stability and improved external balance.

During the 7th plan (1988-93) and 8th plan (1993-98) the net aid inflow as percentage of GDP declined sharply to 0.11 percent and 0.02 percent of GDP, respectively. The domestic savings, important for maintaining a high level of investment and thus growth level, remained, on average, at around 13 percent in 7th and 8th plan. The real GDP growth rates during the same plan periods stood at 5.0 and 4.4 percent, respectively. Furthermore domestic savings were less than the investment during all the plan periods and that gap was partially filled by the foreign aid.

Summarizing the macroeconomic performance and role of foreign aid in Pakistan in the light of above discussion, it seems that foreign aid and growth are positively associated. For example, in 1960s and 1980s, Pakistan received substantial aid flows and achieved a high growth rate, however this was not the case during the 1950s, 1970s and 1990s and economic growth suffered. But it is very difficult to draw a simple conclusion from these statistics because aid is not the only variable that influences growth and there may be many other variables that affect growth-directly or indirectly (White, 1992). In short, it is difficult to draw any conclusion by simple data illustration. For a clear picture of aid effectiveness, we need some empirical investigation, which is the subject matter of

chapter 4 of our study. However, first we analyze the volume, source and types of foreign aid during different plan periods in Pakistan.

3.3: FOREIGN AID VOLUME, SOURCES AND TYPES

Foreign economic assistance in Pakistan, since the early 1950s, has largely served to supplement the scarce domestic resources and made towards sustaining higher economic growth. External financial aid to Pakistan is given in diverse forms. Some of it is clearly linked with specific projects while some of it is given in general support of annual budget or longer-term plans without reference to specific projects. Foreign aid is also received in a variety of forms intermediate between these two categories.[10]

The plan-wise commitment and disbursement of foreign aid to Pakistan is shown in Table 3.4 below. Figures of this table show the foreign aid disbursement have increased from US $ 842 million in first plan period to US $ 12081 in the seventh plan and then increased further to US $ 12,748 million in the eighth plan period.

These figures in Table 3.4 show that donors have emphasized more on project aid as compared to non-project aid. Perhaps the logic of this trend lies in the fact that project aid enables the donors to closely monitor and control the development strategies of the recipient country. Thus one may argue that it is donor's policy to provide more project aid as compared to non-project aid. So that project aid donors can supervise aid projects through their own consultants and technicians. Generally project aid becomes more expensive in the long run for the recipient country as recipient country is required to

[10] Intermediate forms of aid include: specific projects within the framework of a development plan; earmarked aid to be drawn upon only for specific agreed projects; support for groups of projects rather than individual projects; aid for specific import requirements (food, spare parts) not linked to specific projects etc;

acquire raw materials and capital goods needed for the aided project from the donor countries (Malik et. al.1994).

TABLE 3.4
Different Forms Of Foreign Aid Committed And Disbursed
(1951-2001) Million US $ (Annual Average)

PLAN PERIOD	PROJECT AID (COMMIT)	PROJECT AID DISBURSED	NON-PROJECT AID (COMMT)	NON-PROJECT AID DISBURSED	COMMITMENT	DISBURSED
Non-plan (1951-53)	170	406	167	436	337	842
I (1955-60)	527	-	548	-	1057	-
II(1960-65)	1702	1209	1209	1185	2911	2394
III(1965-70)	1582	1811	1355	1234	2937	3043
Non-Plan (1970-78)	3762	2556	3205	3174	6967	5730
V(1978-83)	4659	3363	2574	2430	7233	5793
VI (1983-88)	9132	4882	2775	2301	11907	7183
VII (1988-93)	9961	7643	3952	4438	13913	12081
VIII(1993-98)	8882	9654	3270	3184	12152	12748
IX- Plan (1998-2001)	3650	4447			7928	7853
Grand Total	**44027**	**35971**	**19055**	**18382**	**67342**	**57667**

Source: Government of Pakistan: (1998) *Five Years Plans*, Planning Commission of Pakistan, Ministry of Planning and Development, Islamabad.

Fig: 3.1
Foreign Aid
[Commitment(white column) & Disbursement (Black column]

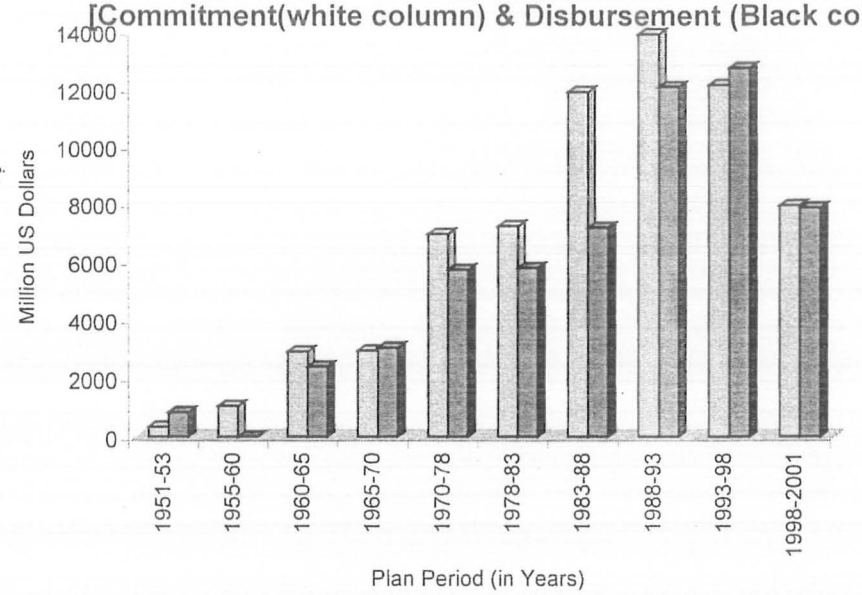


Table 3.5 below shows the composition of aid over the years. These figures show that the composition of aid over the years has considerably changed from grants and grant like assistance to hard-term loans.

TABLE 3.5
Composition Of Foreign Aid (Committed And Disbursed)
Annual Average*(US Million Dollars)*

	Commitments				**Disbursements**			
PLAN PERIOD	**Total**	Grants	Loans	Credits	**Total**	Grants	Loans	Credits
II(1960-65)	2909.5	1542.8	1297.6	69.2	2393.6	1476.7	841.1	77.8
III(1965-70)	2935.4	649.3	1600.6	685.6	3044.2	627.8	1729.9	686.5
Noln-Plan (1970-78)	6963.9	9130.5	3771	1026.4	5729.5	1655.6	2938.5	1135.7
V(1978-83)	7231.3	1786.4	4046.7	1398.2	5793.0	1480.1	3175.3	1137.6
VI (1983-88)	11907.9	2859.8	6795.6	2252.5	7183.0	1983.3	3960.9	1238.8
VII (1988-93)	13913.0	2177.6	11588.7*		12081			
VIII (1993-98)	12152	1093.6	11058.3*		12748			
IX-Plan (1998-2001)	7928				7853			

Source: Government of Pakistan (1998), *"Five Years Plans"*, Planning Commission of Pakistan, Ministry of Planning and Development, Islamabad. Government of Pakistan, Economic Survey (Various Issues), Finance Division, Islamabad.
* Credits are included.

The share of grants and grant like assistance in total aid commitments was 80 percent during the first five-year plan (1955-60) but dropped to 46 percent during the second plan (1960-65) and continued to decline thereafter, averaging 32 percent during the third plan (1965-70) and 10 percent during the non-plan period (1970-78). However, due to relief assistance for Afghan Refugees, its share increased to about 22 percent during the Fifth Plan (1978-83) and remained almost the same during the Sixth Plan (1983-88). Thereafter the share of grants and grant like assistance exhibited a declining trend and averaged at 17 percent during the Seventh Plan (1988-93) and only 9 percent during the eighth plan (1993-98).

The main sources of foreign aid to Pakistan are consortium, non-consortium and the Islamic countries with the first being a bigger source.[11] For example, consortium has until 1997-98 provided 85% of total aid disbursed to Pakistan. However, 47 percent of aid was provided on bilateral and 37% on multilateral basis by consortium. The remaining 16 percent aid has been contributed by non-consortium sources (8 percent), Islamic countries (5 percent) and relief assistance for Afghan refugees (3 percent) (GOP, 1997-98). However the flow of aid resources from consortium, non-consortium and other sources have been fluctuating in different time periods. The consortium countries have covered the largest part of foreign assistance to Pakistan in terms of both commitments and disbursements (GOP, 1997-98).

The Consortium is the single largest source of aid for the country, providing more than 80 percent of all aid given to Pakistan. During the 1950s and 1960s, the consortium was providing up to 95 percent of the total aid disbursed to Pakistan. However a marked shift took place after the oil crisis of 1972 and the share of the OPEC in lending increased substantially. The OPEC nations decided to assist the less developed Islamic countries with the difficulties in their balance of payments due to oil price increase of 1972. During the period of 1970-71 to 1978-79, the average share of consortium countries in aid disbursement declined to 66.68 percent as compared to 95.11 percent in the 1960s. Thus, during the 1970s, non-consortium countries (such as Soviet Union and China) and the international donor agencies provided 14.36 percent of total aid to Pakistan as compared to 5.46 percent during the 1960s. Islamic Countries provided these loans on easier terms

[11] Consortium countries (Paris Club) are mainly Australia, Canada, France, Germany, Italy, Japan, Netherlands, New Zealand, Norway, UK and USA. The non-Paris club countries are Austria, China, Korea, Kuwait, Libya, Spain, Saudi Arabia, Switzerland, Turkey and UAE. The donor agencies are mainly ADB, IMF , IBRD and UN.

than the loans contracted with the Consortium. It was this diversification of the sources of aid, coupled with the increase in workers remittances, which helped Pakistan to meet the difficulties in their balance of payments during the period of crisis in the 1970s.

In the 1980s, the situation reverted to the pattern prevalent during the 1950s and 1960s. The average share of Consortium countries in grant disbursement rose to 78.2 percent in the years from 1979-80 to 1989-90. The share of the Islamic countries fell to 4 percent and that of the non-consortium and donor agencies fell to 8 percent. From the year 1980-81 onward, Pakistan received (on average) around one billion US dollars annually in the form of foreign aid. This increase in the amount of aid in absolute terms and the share of Consortium countries in this aid disbursement can be linked to the Russian invasion of Afghanistan in 1979-80. Mainly the Consortium countries provided the relief assistance for Afghan Refugees in Pakistan. This factor may be partly responsible for the increased role of the Consortium in aid disbursement. The aid to Pakistan from Eastern Block countries and from Soviet Union declined during the period of Soviet invasion in Afghanistan.

The terms of foreign loans and credits have significantly become harder over the years. The terms and conditions of the loans and credits were soft during the 1960s and the 1970s, as compared to the terms of 1950s. During the 1980s and the 1990s these terms have been made somewhat harder. The rate of interest, which averaged at 4.6 percent during the 1950s, declined to 3.3 percent during the 1960s and 3.6 percent during the 1970s, but increased to 4.8 and 4.4 percent during the 1980s and the 1990s, respectively. The payment period of the loans during the 1950s was 2 years, which improved to 30 years with a grace period of 7 years during the 1960s. This reduced to

around 25 years with a grace period of 6 years during the 1970s and then improved to 28 years including a grace period of 7 years in the 1980s. Repayment period, however, declined to 21 years including a grace period of 6 years during the 1990s. The terms of loans and credits became harder as not only the grant element has become quite insignificant but the aid also became donors driven i.e. on the pre-specified terms and conditions of the donors (GOP, 2001-2002).

Pakistan's external debt and foreign aid cannot be discussed in isolation from its macroeconomic policies and performance. For example, the public sector deficits in the 1980s were financed through a combination of concessional external borrowing, foreign aid and domestic debt from the non-banking sector at low and subsidized interest rates, thus avoiding inflation. But this was done at the expense of crowding out private investment, and implied slower GDP growth than would otherwise have been observed (Hussain, 1999). In the next section, we analyze the role of foreign aid in the financing of fiscal and current account deficits over the years.

3.4: THE ROLE OF FOREIGN AID IN INTERNAL & EXTERNAL BALANCES

If one single factor were to be identified on which the entire structural adjustment programme of 1988 and 1993 were based, it would have to be the fiscal deficit. The reduction of fiscal deficit is, without doubt, the key component of the adjustment programme, and most other measures seem to revolve around this theme. A look at data in the appendix 3 indicates the dependence of Pakistan to finance the budget deficit over the years.

The annual budget deficit in Pakistan has ranged continuously around 5 percent of GDP since the year 1980-81. It peaked at almost 9 percent of GDP in 1990-91. It was,

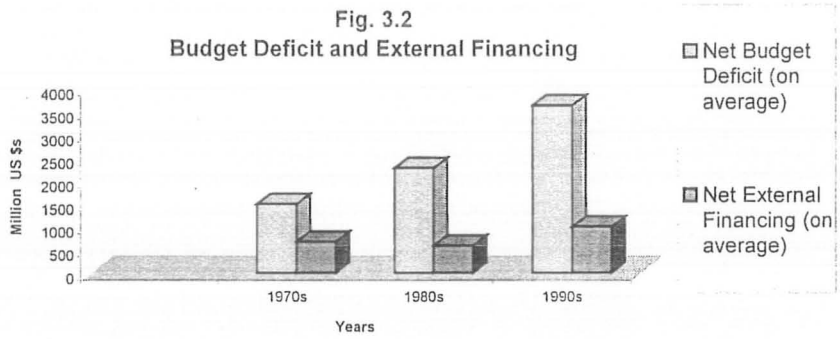
however, subsequently managed down to 5.5 percent by the year 1994-95. Until the mid-80s, the contribution of the primary budget deficit i.e. overall budget deficit net of interest payments, was larger than interest payments but in the 1990s the interest payments claimed the major share in the budget deficit. While the primary budget deficit has reduced from over 3 percent of GDP in the 1980s to less than 2 percent in the 1990s, interest payments have risen from 2 percent of GDP in 1980-81 to almost 5.5 percent in the 1990s (on average). The prevalence of such a high fiscal deficit over the years in a row has propelled increased borrowing from both internal and external sources to cover the resource gap.[12]

TABLE 3.6

Budget Deficit Financing By External Sources (*Million Us $S)*

Years	Net Budget Deficit (Average)	Net External Financing (average)	Percentage of Deficit Financed Externally	Budget Deficit (Percentage of GDP)
1970s	1491.651	677.213	45.40	8.18
1980s	2277.098	592.974	26.04	7.00
1990s	3635.575	1002.008	27.56	6.74

Estimated averages taken from Government of Pakistan, Economic Survey (various issues), Ministry of Finance, Islamabad.



One of the most significant achievements in the fiscal year 2000-2001 has been a sharp reduction in the overall fiscal deficit. Fiscal deficit as a percentage of GDP

[12] See Appendix 3 for detailed data.

averaged 7.1 percent in the 1980s and 6.9 percent in the 1990s. This has been the major cause of macroeconomic instability in the past, especially in the 1990s. Stabilisation measures taken during the fiscal year 2000-01, perhaps, succeeded in reducing the fiscal deficit from 6.5 percent of GDP (Rs. 206.8 billion) in 1999-2000 to 5.3 percent (Rs. 185.7 billion) in 2000-01. This is lowest fiscal deficit in the past 18 years from 1992-93 to the year 2000-2001. This sharp adjustment in the deficit (1.2 percentage of GDP) was made possible by an increase in total revenues and the curtailment of expenditures. Wide-ranging fiscal reform measures undertaken to broaden the tax base, improve tax compliance and perhaps reducing the level of corruption have played a major role in reducing fiscal deficit.

Table 3.7 below shows that Pakistan is consistently facing current account deficit along with fiscal deficit since the 1970s. It rose from, on average, US $1 billion to US $ 1.2 billion in the 1980s and further increased to US$ 2.9 billion in the 1990s. Due to increasing current account deficit the dependence on foreign resources also increased to finance this deficit which increased, on average, from US$ 0.92 billion in the 1970s to US$ 1.3 billion in the 1980s and went up further to US$ 2.3 billion in the 1990s. The current account deficit financed by external assistance stood, on average, at 92 percent in the 1970s. It depicted fluctuating trend during the 1980s and stood, on average, at 106 percent during 1980s but declined to 94 percent in 1990s. The data show that current account external deficit has remained quite large throughout the period of analysis. It is obvious that large imbalances in current accounts necessitated surpluses in the corresponding capital accounts. The surplus in external capital account must in turn be indicated by public and private capital inflows.

TABLE 3.7

Percentage Of Current Account Deficit Financed By External Assistance

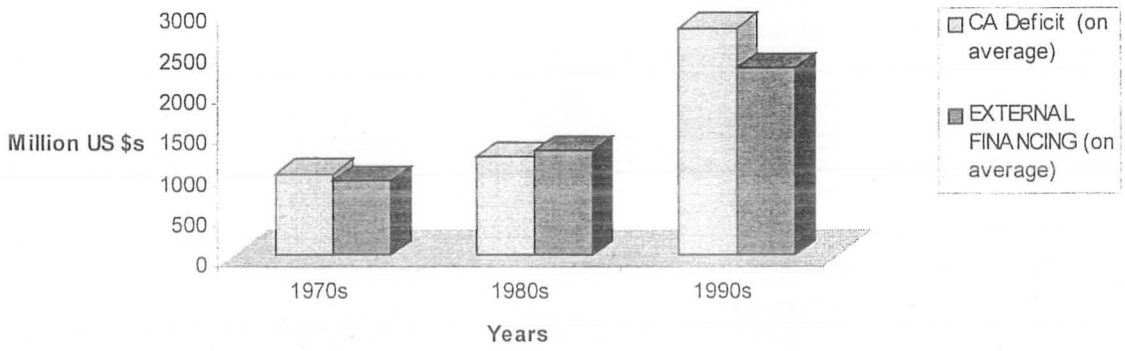
(Million US $)

YEARS	Current Account Deficit (average)	External Financing (average)	Percentage Financed by External Sources
1970s	1004.33	923.67	91.97
1980s	1219	1289.4	105.77
1990s	2791	2302	93.8

Estimated averages taken from Government of Pakistan, Economic Survey (various issues), Ministry of Finance, Islamabad

Note: All entries in Current Account Balance are negative.

Fig. 3.3
Current Account Deficit and External Financing



However, since private capital inflows are insufficient to fill the gap, Pakistan borrowed extensively from external sources. Thus, we observe that during the 1970s, 1980s and 1990s, net internal and external borrowing remained positive. In most cases, internal borrowing was higher than external borrowing. An obvious implication of this pattern is that the external as well as internal debts have continued to rise during the period of analysis.

Looking at the Figure 3.2 and Figure 3.3 on external financing to fill the budget deficit and current account deficit gaps, we observe that there is no consistent pattern of

filling these two gaps using external finance. The role of foreign aid in reducing the twin gaps of fiscal deficit and current account deficit are not consistent and data show a fluctuating trend.

The economic theory suggests that a transfer of external resources enables the recipient country to fill the budget and trade gaps (Barro, 1991; Levene and Renelt, 1992). However, continuation of a substantial resource transfer requires adjustments in the structure of domestic production. Once these budget and trade gaps are filled with foreign aid and a growth process is established, then the changes in the economic structure in the direction of increased savings, import substitution and increased exports are required to reduce the dependence on foreign aid. The role of foreign aid in development of a country is therefore determined by the extent to which aid flows encourage, or alternatively retard, these processes. The analysis, which follows, is designed to analyse aid effectiveness in a broader sense evaluating aid effectiveness in terms of not only GDP growth, but also its effect on domestic savings, investment and on reducing poverty level in Pakistan.

Appendix 3
Table I

Pakistan: Basic Indictor, 1947-1999

Pakistan is the world's seventh most populous nation, and has the 44th biggest economy in terms of GDP, although in terms of purchasing power parity, Pakistan's economy is the 22nd biggest in the world. However, it is also the 32nd poorest nation out of 132 in terms of GNP per capita, and the 128th worst performer out of 174 countries, in terms of composite United Nations Human Development Index.

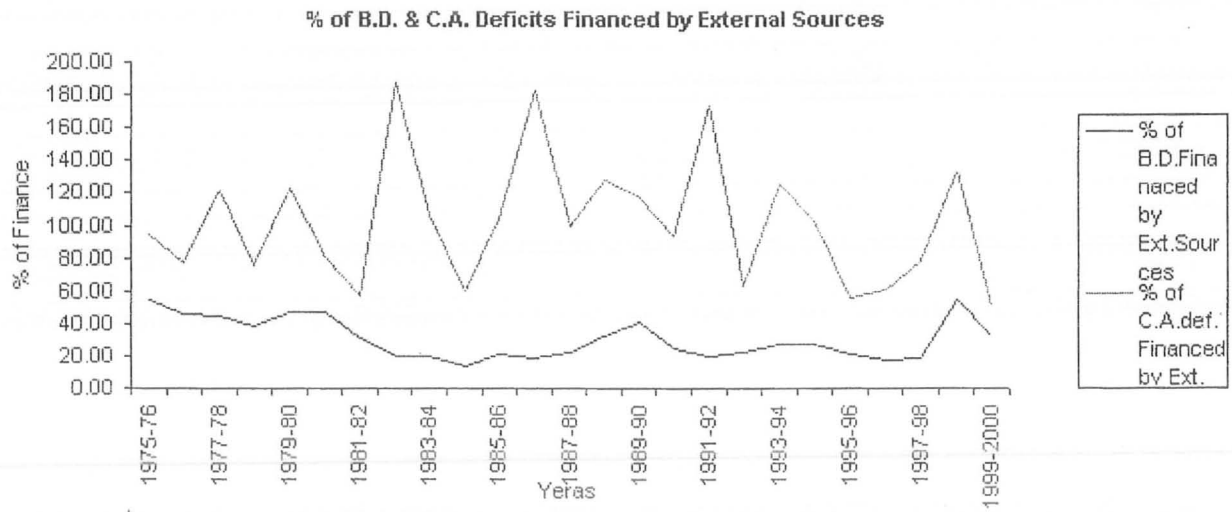
INDICATOR	(1951-52)	(1999-2000)
Population (millions)	33.78	140
Percentage of urban population	17.8	40.0
	1949/50	1999/00
Contribution to gross domestic product		
By sector (%)	53.2	24.2
Agriculture	7.8	26.4
Manufacturing	25.2	49.4
Others (mostly services and trade)		
GNP per capita (US$)	170	430
Annual per capital income (Rs) constant Factor cost (1959/60)	350	915
PPP real GDP per capita (US$)	820	2,160
	1951/2	1995/6
Composition of exports (%)		16
1. Primary commodities	99.2	22
2. Semi-manufactures		60
3. Manufactures		
	1951/2	1995/6
Primary schools (number)	8,413	150,963
Literacy rate (%)	15	36
Female literacy rate (%)	12	23
Life expectancy (years)	43	62
Infant mortality rate	137	95
Access to safe water (%)	29	50
Access to sanitation (%)	14	33
Total registered doctors	1,014	74,229
Population per doctor	14,835	1,773

Source: Government of Pakistan, *Economic Survey* (various issues), Ministry of Finance, Islamabad.

Appendix 3: Table II

Budget Deficit & Current Account Deficit Financed by External Sources

Year	Net Budget Deficit	Net External Financing	% of B.D.Finanaced By Ext.Sources	Budget Def. % of GDP	Current Account Deficit	External Financing	% of C.A.def. Financed by Ext. Source
1975-76	1260.61	683.74	54.24	9.4	948	895	94.41
1976-77	1296.77	591.92	45.65	8.4	1051	807	76.78
1977-78	1403.33	619.09	44.12	7.9	605	736	121.65
1978-79	1748.99	677.88	38.76	9.1	1114	838	75.22
1979-80	1550.43	724.41	46.72	6.1	1140	1396	122.46
1980-81	1545.67	737.73	47.73	5.3	1037	843	81.29
1981-82	1733.38	539.47	31.12	5.3	1534	886	57.76
1982-83	2019.00	406.26	20.12	7	517	969	187.43
1983-84	1864.98	370.89	19.89	6	997.9	1061	106.32
1984-85	2427.33	341.16	14.05	7.7	1680	1006	59.88
1985-86	2580.32	531.88	20.61	8.1	1236	1296	104.85
1986-87	2718.97	490.36	18.03	8.2	719	1317	183.17
1987-88	3270.74	721.10	22.05	8.5	1682	1679	99.82
1988-89	2960.07	946.90	31.99	7.3	1934	2467	127.56
1989-90	2614.09	1069.93	40.93	6.6	1891	2213	117.03
1990-91	3977.78	985.65	24.78	8.8	2171	2013	92.72
1991-92	3621.42	725.40	20.03	7.4	1346	2339	173.77
1992-93	4141.98	937.37	22.63	7.9	3688	2346	63.61
1993-94	3055.95	816.34	26.71	5.9	1965	2470	125.70
1994-95	3414.79	950.32	27.83	5.5	2484	2559	103.02
1995-96	4106.21	851.57	20.74	6.3	4575	2577	56.33
1996-97	4000.81	708.73	17.71	7.7	4187	2529	60.40
1997-98	4745.65	897.33	18.91	6.1	3557	2788	78.38
1998-99	3829.39	2074.59	54.18	6.5	1701	2256	132.63
1999-2000	3997.68	1292.65	32.34	5.3	2235	1143	51.14



Chapter 4

AID EFFECTIVENESS: THE CASE OF PAKISTAN

4.1: INTRODUCTION

Although advanced countries and international financial institutions provide public grants and loans to less developed countries for economic growth and development, there is yet no scientific basis for determining the effects of this resource transfer on the recipient's economic development. In the absence of a valid quantitative analysis of aid effectiveness, initiative judgements are made as to the importance of foreign aid, ranging from "vital" to "negligible".

Suggestions for a strategy of more rapid development utilising substantial amounts of external assistance have been set out in many papers e.g. Chenry and Strout (1966), Chenry and Carter (1973), Mckinon (1964), Bruton (1969), Griffin and Enos (1970), Joshi (1970), Bhagwati and Eckaus (1972), Findlay (1972), Cassen (1986), Romer (1986), Mosley (1985, 1987, 1995), Barro (1991), Fischer (1991), levene and Renelt (1992), etc; These studies suggest that a moderate volume of external resources may increase GDP growth rate of an underdeveloped country through financing additional investment or through providing the additional imports required for sustaining a higher level of income. The key elements in this process are the response of the country to the availability of additional resources and its ability to replace these resources over time by changes in the structure of its production and its use of income.

Although these studies establish some of the criteria for effective programs of foreign aid, the extent to which aid recipients are able to carry out the required policies can only be determined from a study of actual cases. In this chapter we perform

quantitative analysis of the effects of aid on GDP growth, poverty reduction, infant mortality, income inequality and unemployment as a social indicator in Pakistan.[13]

In most developing countries like Pakistan, the role of Public sector in planning and implementation of development projects has always been considerable. The higher public expenditures are generally financed by capital inflows from public and private sources abroad and by the mobilization of domestic resources through taxation and domestic borrowing. However, the effectiveness of foreign assistance and the government's developmental efforts has been cast in doubt. Critics argue that foreign capital inflows have resulted in increased public or private consumption rather than increased investment and have contributed less to GDP growth than was anticipated (Lucas 1990, Pack and Pack 1990, Mosley 1995, Boone 1994,1996). Others suggest that higher taxes have been wasted on non-productive forms of public consumption and external assistance has reduced the financial and technical bottlenecks to development (Please 1967, Papanek 1972, Cassen 1994).

We examine these issues by developing a model focusing on the interactions among public expenditures, taxation and foreign aid. We develop a theoretical model to analyze the aid effectiveness in terms of aid effects on GDP growth rate in Section 4.2 of this chapter.[14] Data and econometric procedure used are discussed in Section 4.3 and results are summarized in Section 4.4.

---

[13] Some of these problems were investigated for Israel in Chenry and Bruno (1963) and for Greece in Adelman and Chenry (1966)

[14] The macroeconomic model used by Heller (1975), Lee et al. (1986), Mosely et al. (1987) and Mosely & Hudson (1995) largely influence the model used in this study.

4.2. A MODEL OF FOPREIGN AID AND GROWTH

In order to study the role of foreign aid in the process of economic growth, we start the determination of GDP through a production function in which potential output is constrained by available factors of production. Different types of production functions can be written and we choose " new growth theory" type production function where we differentiate the capital stock between physical and human capital. The human capital, consisting of the stock of available knowledge, exhibits increasing returns according to new growth theory. The production function may be shifted through endogenous technological progress that may be influenced by government policies, R&D investment, etc. However, in a resource-deficit less-developed country such as Pakistan, foreign aid has the potential to influence state of technology, e.g., through project aid for infrastructure development. Thus we specify:

$$Y = f\left(K_G, K_P, L, H, \mu(H, A)\right) \tag{4.1}$$

The variables used in the production function are:

Y = GDP;

K_G = Public sector physical capital stock;

K_P = Private sector physical capital stock;

L = Labor Force;

H = Human capital stock (public and private);

μ = The state of technology which is dependent on the stock of human capital and foreign aid.

In case of Pakistan's economy, labor is not a binding constraint on output as compared to capital and hence our production function simplifies to:

$$Y = f\left(K_G, K_P, H, \mu(H,A)\right) \tag{4.2}$$

Now differentiating (4.2), we get:

$$dY = \frac{\partial Y}{\partial K_g} dK_g + \frac{\partial Y}{\partial K_p} dK_p + \frac{\partial Y}{\partial H} dH + \frac{\partial Y}{\partial \mu}\left(\frac{\partial \mu}{\partial A} dA + \frac{\partial \mu}{\partial H} dH\right) \tag{4.3}$$

Denoting the partial derivatives by δ_1, δ_2, δ_3, δ_4, δ_5 and δ_6; we rewrite equation (4.3) as follows:

$$dY = \delta_1 G_I + \delta_2 I_p + \left(\delta_3 + \delta_4 \delta_6\right) dH + \delta_4 \delta_6 dA \tag{4.4}$$

Equation (4.3) shows that the change in the GDP is dependent on the level of public and private investment, foreign aid and the changes in human capital stock.

To establish the linkage between foreign aid and GDP growth, we use the standard two-gap theory whereby the growth rate of GDP can be influenced by aid by undertaking investment financed by foreign aid. To that end, we need to specify the determination of investment in private and public sectors. Private investment is assumed to be determined by the level of domestic savings and aid inflow. Thus assuming a linear relationship, we specify:

$$I_p = \rho_1 + \rho_2 A + \rho_3 S \tag{4.5}$$

where A denote the inflow of foreign aid and S the domestic savings, the latter determined by the level of income (GDP) and other financial flows (OFF) as follows:[15]*

$$S = \rho_4 + \rho_5 Y + \rho_6 A + \rho_7 OFF \tag{4.6}$$

[15] Other financial flows can be decomposed into foreign remittances, foreign direct investment and export receipts. In estimation process, we shall make use of this decomposition of other financial flows.

Substituting the above saving function into the investment function (4.6) and simplifying, we obtain:

$$I_p = \varphi_1 + \varphi_2 Y + \varphi_3 A + \varphi_4 OFF \qquad (4.7)$$

where $\varphi_1 = \rho_1 + \rho_3\rho_4$; $\varphi_2 = \rho_3\rho_5$; $\varphi_3 = \rho_2 + \rho_3\rho_6$; $\varphi_4 = \rho_3\rho_7$

Next, to determine the level of public sector investment, we assume that the aid recipient country uses foreign aid available to pursue a range of economic objectives under certain inevitable economic constraints. These objectives are assumed to consist of intermediate policy targets on expenditure (both capital and recurrent), taxation and borrowing as determined by the government's utility maximizing behavior. For any particular time the utility function of the government is specified as:

$$U = f\left[G_I(t), G_D(t), G_{ND}(t), B(t), T(t)\right] \qquad (4.8)$$

The variables used above are measured in real terms and are defined as follows.

G_I = government investment expenditure

G_D =Government development expenditures (recurrent) e.g. expenditure on health and education services:

G_{ND} = Non-developmental expenditures (recurrent)

B = Public Sector Borrowing (both domestic & external)

T= tax revenue

A brief description of each variable in the above utility function is as follows. The variable G_I include gross capital formation in the public sector (i.e. buildings and construction, transport equipment etc;) and net loans to the other sector of the economy with the exception of capital formation already included in civil consumption. G_{ND} includes all current non-capital expenditures for socio-economic ends, including

expenditures for the staffing of schools, hospitals and health centers, for the maintenance of roads and communication network, agricultural projects etc. G_{ND} include current expenditures on government administration, servicing of public debt, diplomatic representation, police, courts and armed forces etc.

Public sector borrowing (B) constitutes an alternative way of resource mobilization even though it yields disutility to public decision makers. Foreign aid to the public sector, whether bilateral or multilateral, grants or loans, is assumed to be exogenous to the public sector.

We take tax revenue variable T endogenous and treat it as policy instrument available to government. Total tax revenues include direct and indirect tax revenue (income taxes, customs and excise duties, export taxes etc;) and revenue from license fees, interests, dividends, profits of government and miscellaneous revenues.

Specifically, we assume that government attempts to minimize a quadratic loss function. The "loss function" is quadratic in deviation of the various intermediate targets from their desired values: the further they stray from their targets, the lower the level of government utility:

$$U = -\left[\frac{\alpha_1}{2}\left(G_1 - G_I^*\right)^2 + \frac{\alpha_2}{2}\left(G_D - G_D^*\right)^2 + \frac{\alpha_3}{2}\left(G_{ND} - G_{ND}^*\right)^2 + \frac{\alpha_4}{2}\left(B - B^*\right)^2 + \frac{\alpha_5}{2}\left(T - T^*\right)^2\right] \tag{4.9}$$

where α_i is a non-negative fixed number for each i = 1, ..., 5. The variables indicated by a star indicate target levels of corresponding variables. The chosen loss function is strictly

concave in each of the variables G_I, G_D, G_{ND}, B and T. The function is specifically designed to fulfill the need for an easily estimable form of the econometric relationship between foreign aid debt and GDP with desirable properties. However, the absence of any interdependence between the policy variable is its primary deficiency.

The target variables are specified as follows:

We assume that government derives the desired values of targets G_I*, G_d*, G_{nd}*, B* and T* from observable macro-economic data according to the following rules.

$$G_I^* = \alpha_6 Y + \alpha_7 I_p \tag{4.10}$$

$$G_D^* = \alpha_8 Y \tag{4.11}$$

$$G_{ND}^* = \alpha_9 Y \tag{4.12}$$

$$B^* = 0 \tag{4.13}$$

$$T^* = 0 \tag{4.14}$$

Where Y and I_p denote real GDP and private investment respectively. In equation (4.10) the target level of investment in the public sector is assumed to depend on the current level of real GDP and the level of private investment. In a Harrod-Domar growth framework, G_I* is positively related to the level of output and inversely related to total private sector investment.[16] In equation (4.11), we assume that higher the level of national income Y, higher will be the desired level of recurrent expenditures (G_d*).

Further in equation (4.12), higher the level of real GDP, higher will be the target level of non-development expenditure.[17] In equations (4.13) and (4.14) we assume that government attempts to achieve zero budget deficit, so that its borrowing is zero and impose no new taxes to generate more revenues. A straight implication of this assumption is that when the government maximizes its utility function, it will need to minimize the level of borrowing as well as the total tax burden on the economy.[18]

Now we turn to the constraints. First, government expenditure must in some way be financed, either by government recurrent revenues, borrowing, or overseas aid, that is:

$$G_I + G_D + G_{ND} = T + B + A \tag{4.15}$$

where A is overseas aid flows. Generally, in developing countries, all recurrent expenditures are financed from taxation or aid, and not from borrowing. Therefore, we assume that all such expenditures are financed from tax revenues and aid receipts. Therefore:

$$G_D + G_{ND} = \alpha_6 T + \alpha_7 A \tag{4.16}$$

---

[16] There may also be positive relationship between G_I and I_p if we treat them as technologically complementary. Also note that in equation (4.3) the change in GDP can be treated as an instrument (according to accelerator principle) in place of the current GDP.

[17] The target non-development expenditure is also assumed to follow its past trend. This reflects the importance attached to a fundamental continuity of these expenditures.

[18] Desired taxes can never be zero. However following Mosely et al. (1987: 618), we assume the government desires to minimize the tax burden just to simplify the analysis. Heller (1975) determines tax target T* by the anticipated level of total income and by the value of tax handles such as imports or exports. Since the government sector's expenditure program may substantially affect the level and composition of imports in a given period, Heller uses imports in the previous period as one of the instruments for T*. Heller used the equation $T^* = \alpha Y_t + \beta M_{t-1}$.

Hence using (4.15) and (4.16), we have:

$$G_I = B + (1-\alpha_6)T + (1-\alpha_7)A \tag{4.17}$$

Equations (4.15) and (4.16) are the two independent constraints on the set of feasible public sector decisions, while (4.14) is derived from the same two constraints. First is economic constraint and second is institutional constraint. The second constraint highlights the fact that generally developing countries do not use borrowing for current expenditures and use tax revenues and overseas aid to finance current expenditures.

We now set up the following Lagrange function in order to optimizing the social welfare function (i.e. minimizing the quadratic loss function) subject to two types of constraints explained in equations (4.15) and (4.16).

$$L = -\frac{1}{2}\left[\alpha_1\{G_I - G_I^*\}^2 + \alpha_2\{G_D - G_D^*\}^2 + \alpha_3\{G_{ND} - G_{ND}^*\}^2 + \alpha_4\{B - B^*\}^2 + \alpha_5\{T - T^*\}^2\right]$$
$$+ \lambda_1\left[G_I + G_D + G_{ND} - T - B - A\right] + \lambda_2\left[G_D + G_{ND} - \alpha_6 T - \alpha_7 A\right] \tag{4.18}$$

The first order conditions are given by:

$$\frac{\partial L}{\partial G_I} = -\alpha_1(G_I - G_I^*) + \lambda_1 = 0 \tag{4.19}$$

$$\frac{\partial L}{\partial G_D} = -\alpha_2(G_D - G_D^*) + \lambda_1 + \lambda_2 = 0 \tag{4.20}$$

$$\frac{\partial L}{\partial G_{ND}} = -\alpha_3 \left(G_{ND} - G_{ND}^*\right) + \lambda_1 + \lambda_2 = 0 \tag{4.21}$$

$$\frac{\partial L}{\partial B} = -\alpha_4 \left(B - B^*\right) - \lambda_1 = 0 \tag{4.22}$$

$$\frac{\partial L}{\partial T} = -\alpha_5 \left(T - T^*\right) - \lambda_1 - \alpha_6 \lambda_2 = 0 \tag{4.23}$$

$$\frac{\partial L}{\partial \lambda_1} = G_I + G_D + G_{ND} - T - B - A = 0 \tag{4.24}$$

$$\frac{\partial L}{\partial \lambda_2} = G_D + G_{ND} - \alpha_6 T - \alpha_7 A = 0 \tag{4.25}$$

Using first-order conditions (4.19) to (4.25), we find out how the variables in this system, particularly GDP, respond when aid variable (A) changes. Thus we proceed to derive the reduced form for the public sector investment variable G_I as a function of GDP, foreign aid and private investment in an economy as follows: [19]

$$G_I = \phi_1 + \phi_2 Y + \phi_3 A + \phi_4 I_P \tag{4.26}$$

So, finally we have three equations to define the relationship that we want to examine in the remainder of this chapter. These three equations are:

$$dY = \delta_1 G_I + \delta_2 I_P + \left(\delta_3 + \delta_4 \delta_6\right) dH + \delta_4 \delta_6 dA \tag{4.4}$$

[19] See Appendix 4.1 for the mathematical derivations.

which is derived from our production function.

The other two equations are private investment and public sector investment derived minimizing the government loss function. These equations are reproduced as follows:

$$I_p = \varphi_1 + \varphi_2 Y + \varphi_3 A + \varphi_4 OFF \tag{4.7}$$

$$G_l = \phi_1 + \phi_2 Y + \phi_3 A + \phi_4 I_p \tag{4.26}$$

Substituting (4.7) and (4.26) into (4.4) yields:

$$dY = \delta_1\left(\phi_1 + \phi_2 Y + \phi_3 A + \phi_4 I_p\right) + \delta_2\left(\varphi_1 + \varphi_2 Y + \varphi_3 A + \varphi_4 OFF\right) + \delta_5\delta_6 dA + \delta_5\delta_7 dH$$

Substituting the value of I_p, we re-write the above equation as follows:

$$\begin{aligned}\frac{dY}{Y} &= \left(\delta_1\phi_1 + \delta_1\phi_4\varphi_1 + \delta_1\phi_2 + \delta_1\phi_4\varphi_2\right) + \left(\delta_1\phi_3 + \delta_1\phi_4\varphi_3\right)\frac{A}{Y} \\ &+ \delta_1\phi_4\varphi_4\frac{OFF}{Y} + \left(\delta_3 + \delta_4\delta_6\right)\frac{dH}{Y} + d\theta + \delta_4\delta_6\frac{dA}{Y}\end{aligned} \tag{4.27}$$

Equation (4.27) can be written in reduced form as follows:

$$\frac{dY}{Y} = \beta_0 + \beta_1\frac{A}{Y} + \beta_2\frac{OFF}{Y} + \beta_3\frac{dH}{Y} + \varepsilon \tag{4.28}$$

where,

$$\beta_0 = \delta_1\phi_1 + \delta_1\phi_4\varphi_1 + \delta_1\phi_2 + \delta_1\phi_4\varphi_2$$

$$\beta_1 = \delta_1\phi_3 + \delta_1\phi_4\varphi_3$$

$$\beta_3 = \delta_1\phi_4\varphi_4$$

$$\beta_4 = \delta_3 + \delta_4\delta_6$$

$$\varepsilon = \delta_4\delta_6 .....$$

Equation (4.28) is the fundamental equation we proceed to estimate.[20] We define aid effectiveness through β_1, the partial derivative of the GDP growth rate with respect to foreign aid as percentage of GDP, other financial flows and human capital stock being held constant. It suggests that the effectiveness of aid is determined by the parameters of the government welfare function included in the composite parameter $\phi_3, \phi_4, \varphi_3$, the parameters of the constraint; and the parameters of aggregate production function δ_1. Equation (4.28) is presented here in a very simplified form. The size of aid effectiveness co-efficient β_1, like other reduced form co-efficient, is defined by many influences as mentioned in our model.

The above is a new approach, with the exception of one or two studies of the impact of aid on investment rather than GDP growth (or any of other variables studied here) such as Pack and Pack (1993) and Khilji and Zampelli (1991). GDP growth and the specification of independent variables and, more specifically, the lag structure

[20] Note that the error term may also include additional components that may arise due, for example to frictions in the government's optimizing behavior, misspecification of various function (both in term of the functional forms and variables specification) and measurement errors in data.

relating them to the rate of other policy targets are discussed in more detail as aid in particular exercises its effects over an extended period of time.

In the actual regression analysis the dependent variable GDP growth rate is not only influenced by variables that can be readily quantified on some well-defined scale like foreign aid and other financial flows, but also by such variables that are essentially qualitative in nature such as political instability and policy change. To eliminate year-specific effects, we have introduced in our growth equations a set of year dummy variables.

4.3: DATA, RESULTS & DISCUSSION

Initially we examine the impact of annual changes in the net economic assistance receipts on the GDP growth rate. The reduced form Equation (4.28) after including additional explanatory variables is estimated by ordinary least square (OLS) against time-series data for the period 1972-73 to 1999-2000. All the data are drawn from the *Economic Survey* of the Government of Pakistan (various issues), *World Development Indicators and Balance of Payment Year Book* of the IMF. All the domestic variables are measured at constant market prices of Pakistan, with 1980-81 as the base year. We use the GDP deflator to measure real variables.

4.3.1: ECONOMETRIC RESULTS OF GROWTH EQUATION

Estimates of the growth equation (4.28) will show how much empirical backing can be given to the proposition theoretical model. We begin with the estimation of the basic model as given in equation (4.28) and then extend it for sensitivity to additional explanatory variables. We are primarily concerned with the effect of foreign aid on GDP

growth and then see how aid effectiveness varies, as the other variables are included in the equation. The results of estimated equation 4.28 are shown in Table 4.1.

TABLE 4.1
Parameter Estimates of Aid-Growth Equation
(Dependent Variable is real GDP growth rate)

Independent Variable	Parameter Estimate
Constant	12.55 (3.42*)
Aid (net ODA) as percentage of GDP	-0.47 (-1.22)
Other Financial Flows as percentage of GDP	0.88 (0.86)
Literacy rate (in percentage)	-0.19 (-2.32*)
R-squared	0.25
DW statistic	2.08

Note:The t-values are shown in parentheses. The statistics significant at 5% level are indicated by *.

Foreign aid as percentage of GDP emerges as insignificant determinant of GDP growth rate with negative regression coefficient. These results are in conflict with those recorded by Papanek (1972,1973) and Mosley et al., (1987,1995), which suggest a positive and significant influence for aid on economic growth. It is possible that the difference of our results with these studies arises because we have used a different data set and different time period. In any case on the safer side we can conclude that aid in the aggregate has no demonstrable effect on GDP growth in the period of analysis.

This result supports the findings of Boone (1994) who found that foreign aid has hardly any effect on GDP growth; in particular, foreign aid mainly serves to augment the consumption of those who are relatively well off in developing countries. Feyzioglu et al.

(1997) drew similar conclusion from his results, that is most of foreign aid is fungible, and recipient of foreign aid divert foreign aid to public consumption.

The ineffectiveness of aid in affecting economic growth in Pakistan raises many questions regarding the justification of aid inflow. It seems from the results that either the economic policies that determine the patterns of aid utilization are not optimal or macroeconomic incentives are distorted due to the presence of foreign aid in Pakistan. The country would be better served by increasing those sources of external financing that are stable, sustainable, have positive effects on growth and are largely within the policy control of economic managers, rather than continuing to depend on the traditional sources of foreign aid, which have found to make a questionable contribution to growth performance.

The variable "other financial flows" has a positive, though insignificant, impact on GDP growth. This result indicates a justification for a shift from the traditional strategy of reliance on foreign aid to other financial flows, which include export receipts, remittances and foreign investment (direct as well as equity). An added advantage of reliance on other financial flows is that it includes the relatively more stable source, namely exports. Furthermore both exports and FDI are directly linked to real economic activity. FDI is also known to bring technological spill over from abroad. Exports could also stimulate technological improvements, particularly when the country in consideration has to compete in the markets of developed countries

The effect of literacy rate on GDP growth is also quite interesting in our findings. The literacy rate is found to have negative and significant effect on GDP growth rate. The negative impact of literacy on GDP growth may be attributed to crucial deficiencies in

both primary and secondary schooling as well as large gender and regional inequities in the distribution of educational services. While the importance of education in fostering development has been a prominent theme both in academic and policy circles, there has been little effort even in maintaining the standards of education. It is a well-known observation that the education system in Pakistan is highly inflexible to adjust to the changing requirements of the time. With unrealistically low expenditure allocated to education in the public sector, the gap between the quality of educational services between public and private sector has increased dramatically. The budget allocated to basic education has not kept pace with the increase in enrolments. As a result public sector schools, especially in rural areas and small cities, do not have qualified teachers and teaching material. The end outcome of this trend is that, while the literacy rate has increased in quantitative terms, the quality of education for an average person has been reduced. The upshot of all this is that literacy rates have increased, but the productivity has declined, thereby resulting in reduced GDP growth rate. The fact that Pakistan has managed to obtain a high average GDP growth rates in such a poor educational system is one of the central paradoxes of the Pakistani economy. Obviously such a growth pattern could not be sustained as evidenced from the past trends.

Since aid does not necessarily influence the GDP growth immediately after it is disbursed because these are lags in releasing of aid funds from government to the ultimate users of aid and in implementing the projects for which aid is meant, there is a need for experimenting with a range of lag-structures to see how sensitive is the estimated coefficient of aid-effectiveness to the period over which aid is measured. In doing this, we are somewhat constrained by the length of reliable time series data

available on the required variables. Certain aid flows exercise their effect over a large number of years but it is not possible to model these effects by means of a lag-function distributed over a large number of years.[21] If we do so, we would lose substantial degrees of freedom. We, therefore, attempt to measure the influence of aid averaged over periods of two, three and five years prior to the year for which the dependent variable is measured. The results of this exercise are shown in Table 4.2.

TABLE 4.2

Aid-Growth Equation: Lag Period Aid Effect On GDP Growth
(Dependent Variable is real GDP growth rate)

Independent Variable	Parameter Estimate		
	Specification 1	Specification 2	Specification 3
Constant	14.46 (3.10*)	19.23 (3.30*)	22.00 (4.19*)
Average Aid in 2 years terminating in the year of disbursement (% of GDP)	-0.67 (-1.36)		
Average Aid in 3 years terminating in the year of disbursement (% of GDP)		-1.11 (-1.76)	
Average Aid in 5 years terminating in the year of disbursement (% of GDP)			-1.27 (-2.19*)
Other Financial Flows as percentage of GDP	1.22 (1.16)	1.08 (1.01)	1.13 (1.34)
Literacy rate (in percentage)	-0.23 (-2.34*)	-0.33 (-2.78*)	-0.38 (-3.75*)
R-squared	0.21	0.30	0.44
DW statistic	1.91	2.15	2.20

Note: The t-values are shown in parentheses. The statistics significant at 5% level are indicated by *.

We observe that the qualitative nature of our regression results does not change by considering alternative aid structures. Particularly `aid effectiveness` is consistently

[21] Mosely (1987,1994) used cross-section data for lag-function distributed over a large number of years.

negative across the three alternative lag-structures and is significant as an average of 5 years from the period of disbursement.

It has frequently been suggested that the form in which aid is given may have influence on its effectiveness, and in particular that food and emergency aid, which are not formally linked to investment activity, have less leverage than other types of aid. We have tested this proposition by including, as additional explanatory variables to those in equation (4.28), the share of food and emergency aid, program assistance and technical assistance.[22]

We observe in Table 4.3 that only the share of technical assistance has a positive effect on GDP growth rate, though the relevant parameter estimate is statistically insignificant.

TABLE 4.3
Growth Equation: Influence Of Aid Type
Dependent Variable: GDP Growth Rate

Independent Variable	Parameter Estimate
Constant	18.21 (1.74)
Aid in 5 years terminating in the year of disbursement (% of GDP)	-0.92 (-0.67)
Other financial flows as percentage of GDP	0.87 (1.35)
Literacy Rate	-0.53 (-2.01*)
Food & emergency aid as percentage of GDP	-0.08 (-0.56)
Program assistance as percentage of GDP	-0.63 (-1.76)
Technical assistance as percentage of GDP	0.14 (1.25)
R-Square	0.34
DW statistic	2.19

Note: The t-values are shown in parentheses. The statistics significant at 5% levels are indicated by *.

[22] To avoid singularity in data three major components of aid are included in the regression equation, while the remaining portion is excluded. Still the decomposition of aid into its various types could introduce multicollinearity in the data. However, the computed correlation matrix of independent variables does not indicate the presence of this problem.

The shares of food and emergency aid and program assistance have negative effects on GDP growth. These results imply that the longer-term impact of food aid seems minimal and actually harmful to local food production. The data also suggests that agriculture growth, which is dominated by food production in Pakistan, was low in the periods of more food aid (GOP, 1999). Another implication is since technical assistance is mostly in the form of tied aid; its absorption in the economy is closely monitored both by the recipients and donors. Although tied aid seems sometimes to imply a relationship between a wise and wealthy benefactor and an ignorant and potentially careless recipient, yet, in case of Pakistan, our results show that perhaps technical assistance provided the incentives to initiative and effective organization that, in the end, reinforced the growth process.

The preceding analysis has provided information concerning the extent of relationship between aid and GDP growth rate in Pakistan during the period 1972-73 to 1999-2000. Our estimates for growth model suggest that as far as the effectiveness of aid in increasing GDP growth rate is concerned, the results we have obtained remain essentially of a low key in view of the optimism voiced, particularly, by the architect of gap models. The negative and mostly insignificant relationship between GDP growth and different forms of foreign aid illustrate the inability of pure econometric analysis to capture the relevant effects of foreign aid on economic growth of Pakistan. Also the weak explanatory powers of the estimated equations do not indicate that foreign aid is the main contributor to GDP growth in Pakistan.

To further test the validity of these findings, we now perform sensitivity analysis for the effect of aid (as percentage of GDP) on GDP growth rate. In particular we

formulate a regression equation with GDP growth as the dependent variable and foreign aid as a percentage of GDP plus a set of conditioning variables as independent variables. The result of this exercise is shown in Table 4.6:

TABLE 4.6
Aid-Growth Equation: Sensitivity analysis with two conditional variables
(Dependent Variable is real GDP growth rate 1972-73 t0 1999-2000)

Coefficient of aid as percentage of GDP	t-statistic	Conditioning Variables (as percentage of GDP)	R^2	D.W. Statistic
-0.68	-1.77**	None	0.25	2.02
-0.56	-1.46	Gross capital formation, foreign direct investment	0.26	2.03
-0.68	-1.97*	Gross capital formation, government expenditures	0.31	2.09
-0.61	-1.57	Gross capital formation, trade openness	0.37	2.12
-0.52	-1.39	Gross capital formation, labour force growth	0.29	2.02
-0.37	-1.01	Gross capital formation, credit to private sector	0.35	2.04
-0.69	-1.78**	Foreign direct investment, government expenditures	0.32	2.08
-0.64	-1.57	Foreign direct investment, trade openness	0.26	2.03
-0.64	-1.61	Foreign direct investment, labour force growth	0.27	1.94
-0.41	-1.08	Foreign direct investment, credit to private sector	0.28	2.13
-0.72	-1.86**	Government expenditures, trade openness	0.31	2.05
-0.74	-1.87**	Government expenditures, Labour force growth	0.32	1.97
-0.41	-0.95	Government expenditures, Credit to private sector	0.38	2.14
-0.66	-1.61	Trade openness, Labour force growth	0.27	1.92
-0.41	-1.09	Trade openness, Credit to private sector	0.38	2.16
-0.39	-1.08	Labour force growth, Credit to private sector	0.41	2.10

** Shows level of significance at 10 percent.

Since we do not have a long time series to work with, we consider alternatively various combinations of conditioning variables. The conditioning variables include foreign direct investment as a percentage of GDP, government expenditures as percentage of GDP, Trade openness (exports plus imports as percentage of GDP i.e. trade as percentage of GDP), labour force growth, gross capital formation as percentage of GDP and credit to private sector as percentage of GDP as determinants of GDP growth rate in Pakistan.

Table 4.6 shows the parameter estimate of equation (4.28) under alternative specifications of the regression equation in which we include one additional explanatory variable at a time and then include two additional variables at a time.

This sensitivity analysis gives us information (not shown in the table 4.6) that although gross capital formation emerges as positive determinant of GDP growth rate, however its impact is insignificant. Perhaps the main reason of this weak association between gross capital formation and GDP growth rate is not the level of investment or expenditure, but the deteriorating management capacity of the institutions that have been traditionally responsible for infrastructure services. The autonomous corporations like WAPDA, National Highway Authority (NHA) and Pakistan Telecommunications proved to be inefficient in terms of governance and financial profitability. Also government expenditures do not contribute significantly in affecting the GDP growth rate during the period of analysis. In other words, government expenditures do not show any explicit bias towards GDP growth. This may be due to the fact that defence expenditure and debt servicing pre-empt a very significant proportion of the government budget, leaving very little for developmental expenditure.

The results show that foreign direct investment as percentage of GDP, labour force growth, government expenditure as a percentage of GDP and trade as percentage of GDP all have insignificant effects on the GDP growth rate. Credit to private sector is the only conditional variable that has a positive and significant effect on GDP growth rate This indicates that Pakistan's record in private sector development is relatively better than its record on many other accounts.

To further analyse the sensitivity of our base equation estimates, we now introduce two conditioning variable at a time in the base regression equation. Table 4.6 shows the results of our estimation where we use official development assistance as percentage of GDP with other conditioning variable. Since our primary concern is to test sensitivity of the aid-effectiveness parameter, we present the results in a summarized form.

These results show the same trend as we obtained in our earlier estimates using one conditional variable. The coefficient of aid is negative across all the specifications considered. It is statistically insignificant in most of the cases half of the specifications and marginally significant in the remaining cases.

To summarize our results, the regression coefficient of aid in the GDP growth equation remains negative and generally insignificant (at 5% level) across all the specification considered. The parameter estimate remains in the range of –0.39 to –0.74.Thus we conclude that at best aid has not contributed to GDP growth in Pakistan and at worst its effect on growth has been adverse.

4.4: GRANGER CAUSALITY TEST

The equation estimates in the previous analysis highlight the impact of aid on GDP growth in Pakistan. It would be interesting to check the validity of our results using Granger causality test for foreign aid and GDP growth rate. We can find statistical association between foreign aid and GDP growth and examine whether GDP `causes` aid inflow or AID inflow `causes` GDP growth or is there a feedback between the two. Khan (1988) and Saleem (1999) have discussed this issue and we re-examine, on the basis of updated data to the latest period, their claim that the direction of causality is from foreign aid to GDP growth and not the other way.

Foreign aid may positively affect growth through Harrod-Domar channel of growth. On the other hand foreign aid may adversely affect domestic saving effort and reduce efficiency in resource allocation, especially in the public sector. Since aid programs have traditionally been implemented through governments, their effectiveness in influencing growth may be limited. Furthermore many aid programs focus on the goals other than GDP growth, such as food supply, poverty reduction, etc.

The direction of causation from growth to aid is not clear. As mentioned in Papanek (1972), the countries with lower growth rates expect to receive more foreign aid than those with higher growth rates. A high growth rate may also communicate a high level of domestic savings and less demand for foreign resources to fill the resource gap. The growth, therefore, can have a negative impact on demand for foreign aid (Lee et al. 1986). Thus we may find the growth rate to have a negative impact on aid. On the other hand, a poor growth performance may also indicate ineffectiveness of aid programs and

hence result is reduced aid inflows. That is the effect of growth on aid may turn out to be positive.

The Granger causality tests are applied on the growth rates of GDP and aid, both measured at constant prices. The results presented in Table 4.9 clearly show that the causation runs from aid growth to GDP growth but not the other way round. Furthermore the qualitative nature of this result does not change with the change in lag structure in the underlying VAR model. The regression coefficients measuring the effect of aid growth on GDP growth (not shown in the table) indicate that aid growth has negative and significant effect on GDP growth with a lag of one year. But the relationship becomes insignificant with two and three period lags. Thus there is no positive association between foreign aid and GDP growth rate during the period under review.

TABLE 4.9
Granger Causality Test Results

Direction of causality	Number of Lags	F-statistic	Probability of F-statistic	Decision
Aid Causes GDP (AID→GDP)	1	8.87	0.004	Do not reject
GDP Cause Aid (GDP→AID)	1	1.15	0.38	Reject
Aid Causes GDP (AID→GDP)	2	5.95	0.000	Do not reject
GDP Cause Aid (GDP→AID)	2	1.43	0.32	Reject
Aid Causes GDP (AID→GDP)	3	4.12	0.025	Do not reject
GDP Cause Aid (GDP→AID)	3	0.84	0.73	Reject

The Granger causality results reinforce our earlier results based on a theory-based model that aid does not have any positive and significant effect on GDP growth. Thus our empirical analysis does not confirm the traditional Harrod-Domar and Chenry's (1966) channel of growth for Pakistan.[23]

4.5: FOREIGN AID, POVERTY AND INCOME INEQUALITY IN PAKISTAN

Growth is commonly cited as the primary driver of poverty reduction. However, the poor may not necessarily reap any of the benefits from growth and this is especially true in countries with high levels of inequality. Moreover, growth does not ensure access to health, education and a clean water supply or a better standard of living for those living in remote areas.

Foreign aid can contribute to poverty reduction by targeting the poorest regions and projects in the social sector. Poverty alleviation and redistribution of income have been central concern of development economists since early 1970s, although the mechanisms to reduce poverty are still debatable. One of the paradoxes of the Pakistani economy has been persistence of widening income inequalities and weak social development in spite of some periods of high economic growth. The adverse distributional consequences of capital-intensive trade and industrial policy, coupled with a skewed agrarian land distribution have contributed to Pakistan's high poverty profile with rising unemployment day by day. The determinants of income inequality, unemployment and poverty are generally associated with agrarian structure, rising population, trade and industrial policies and social infrastructure of a country. However

[23] Chenry (1966) had found on the basis of limited data that aid had positively affected GDP growth in Pakistan.

Pakistan is one of the developing countries that have relied heavily on external sources of financing for agriculture growth, industrialization, human development, employment and poverty alleviation. The negative impact of aid on growth leaves little room for analysing aid effectiveness in terms of aid impact on poverty reduction, income inequality and unemployment in Pakistan, yet we proceed to find the role of foreign aid in alleviating poverty, income inequality and unemployment in Pakistan during the period 1972-73 to 1999-2000.

The measurement of the influence of aid on poverty and other indicators of living standard of low-income groups represent the most serious challenge for the analyst of aid flows. In recent years aid is claimed to be financing expenditures that improve the welfare of poor, such as universal access to primary education and health care. In this way aid can benefit the poor without necessarily have any impact on measured income poverty. Aid that increases growth in turn reduces income poverty and has an indirect effect on poverty and presumably the welfare of poor increases.

Aid that increases the (non-income) welfare of the poor alleviates poverty, but may not have any impact on growth or on measured income poverty. Thus the problem lies in the question of measuring the effects of aid on poverty. Only in rare cases, such as donor financed rural support programmes, aid may have direct effect on the incomes of the poor. But in most cases, we hypothesise that aid indirectly benefits the poor through NGO support in many recipient countries and through other mechanisms such as through the provision of public goods (e.g. health and education). In any case we use the following equation to analyse how aid flows may affect poverty levels.

$$P_t = \beta_0 + \beta_1 PCY_t + \beta_2 GS_t + \beta_3 A_t + \mu_t \quad (4.29)$$

where P_t is measure of poverty (as % of people living below poverty line), Y_t is per capita GDP growth rate in percentage, GS_t measures public expenditures on social sector, specifically on health, education and the other social services expenditures termed as pro-poor public expenditures and A_t is foreign aid as a percentage of GDP.

Likewise we consider the following equation for the effect of foreign aid on income inequality.

$$I_t = \beta_0 + \beta_1 PCY_t + \beta_2 GS_t + \beta_3 A_t + \mu_t \quad (4.30)$$

where I_t indicate the level of income inequality, while all the other variables are the same as defined above.

The data available for pro-poor expenditure is limited, so we include public expenditure on health, education and public sector expenditures on agriculture as percentage of GDP.

The main purpose of aid is the relief of poverty in less developed countries, however data on poverty in Pakistan are quite limited. Data on the so-called head-count poverty index is available only for the years in which *Household Integrated Economic Survey* (previously known as *Household Income and Expenditure Survey*). We use head count poverty index as a measure of poverty. For the years in which data are missing we use standard interpolation procedure to fill the gaps on the basis of the trends in the available

data. This interpolation is not too bad an approximation, because the year to year variation in poverty indicators are expected to be smooth rather than abrupt.

Given the limited data availability on the head-count poverty index, we also use a non-monetary indicator of poverty, namely the infant mortality rate that captures the material hardship aspect of poverty. Specifically we use the under-five mortality rate, on which continuous data are available, as a proxy for poverty. Under-Five mortality rate serves as a reasonable indicator of poverty since most of infant deaths are concentrated among families existing below poverty line.[24] This indicator has also been used in the literature as an indicator of poverty (e.g. Pack and Pack 1990; Khilji and Zampelli 1991; Boone 1994 and Mosley 1995).

All the data for the estimation of equation (4.29) are taken from *World development Indicators* and *Economic Survey* (various issues). The regression results for the head-count poverty index are reported in Table 4.10 shown on page 87. The results suggest that foreign aid as percentage of GDP has negative effect on poverty in Pakistan. According to the parameter estimates increase in foreign aid by one percent of the GDP will reduces the level of poverty by 0.14 percentage points. Thus the effect of aid on poverty is in the desired direction and statistically significant, though the magnitude of this effect is rather small.

Health expenditure as percentage of GDP shows a significant negative impact on poverty i.e. our results suggest that poverty level reduces by 0.17 percentage points with increase in health expenditure by one percent of the GDP. Public expenditures on education and agriculture as percentage of GDP have no significant impacts on the level of poverty in Pakistan. We further find that that per capita GDP growth has negative and

statistically significant effect on poverty, but the regression coefficient indicates that the magnitude of this effect is quite small.

TABLE 4.10

Poverty Assessment Regression Results
(1972-73 to 1999-2000)

	Dependent Variable Percentage of people living below poverty line	Dependent Variable Infant Mortality Rate
Independent Variable	Parameter Estimates	Parameter Estimate
Constant	-0.72 (-1.89)	-2.01 (-2.08)*
Per capita GDP growth rate	-0.0002 (-1.95)*	-0.23 (-0.94)
One year lag Aid as percentage of GDP	-0.145 (-2.36)*	-0.30 (-0.89)
Public expenditures on education as percentage of GDP.	-0.031 (-0.68)	-2.09 (-2.43*)
Public expenditures on health as percentage of GDP.	-0.178 (-2.57)*	-1.32 (-2.64*)
Public expenditures on agriculture as percentage of GDP	-0.047 (-1.50)	
Literacy Rate		-0.09 (-1.57)
R-squared	0.42	0.39
DW Statistic	1.76	2.20

Note: Figures in brackets are t-statistic. * denotes significance of a coefficient at 5 % level.

We now turn our attention to the regression results for the under-five mortality rate, reported in Table 4.10. The table shows that the qualitative nature of the results is not much sensitive to the measure of poverty used as the dependent variable. However, the favourable effect of foreign aid on the under-five mortality rate appears less pronounced than its effect on the head-count poverty index.

[24] UNICEF, *State of the World Children*, 1995.

Further using the data from 1972-73 to 1999-2000, we estimate the impact of foreign aid on income inequality in Pakistan. We regress Gini Coefficient for Pakistan on GDP growth rate, foreign aid as percentage of GDP, pro-poor government expenditures on health, education and agriculture as percentage of GDP and further specify our equation taking explanatory variables as literacy rate, unemployment rate

Table 4.12

Single Equation OLS Regression Results (1972-73 to 1999-2000)
Dependent Variable: Gini Coefficient showing the level of income inequality in Pakistan

Independent Variable	Parameter Estimate Specification 1	Parameter Estimate Specification 2
Constant	16.89 (6.54*)	7.21 (9.97*)
Per capita GDP growth rate	-0.17 (-1.11)	-0.19 (-1.46)
One year lag Aid as percentage of GDP	0.25 (0.92)	0.26 (1.21)
Public expenditures on education as percentage of GDP.	-4.74 (-2.09*)	-4.87 (-2.49*)
Public expenditures on health as percentage of GDP.	11.17 (1.06)	20.86 (2.16*)
Public expenditures on agriculture as percentage of GDP	-3.45 (-1.22)	
Literacy Rate		0.47 (3.56*)
Unemployment Rate		0.94 (2.92*)
R-squared	0.58	0.82
DW statistic	1.39	1.36

Note: Figures in parenthesis are t-statistic and * denotes significance at 5 % level.

The results show that aid as percentage of GDP does not improve Gini Coefficient. The coefficient of foreign aid as percentage of GDP is positive but insignificant. This shows that the level of aid is of no significance with the level of income inequality in Pakistan. The other variables like per capita GDP growth rate and

public expenditures on education show a negative impact on Gini coefficient and are significant. Thus a policy suggestion regarding income distribution is to improve per capita growth rate and more public expenditures in the education sector. This is quite interesting to note in our two specifications of equation that on one hand, public expenditures on education improve income distribution and on the other hand an improvement in literacy rate shows a positive and significant relationship with income inequality in Pakistan. Also an increase in unemployment rate over the years has significantly affected the income distribution in Pakistan. The results show a positive association between unemployment rate and income inequality in Pakistan. This implies that generation of productive employment should be an important policy goal in any meaningful program of reduction in income inequality. The rate of unemployment adjusted for underemployment is little below 10 percent in Pakistan (GOP, 2000). Although no hard data for income levels of working poor are available, it is generally accepted that their wages are low and have not risen much during the decades of 1970s, 1980s and 1990s. Therefore, even if unemployment is lower than 10 percent in Pakistan, poor are underemployed and so is the effect on income distribution.

Increases in GDP growth is expected to benefit the poor due to their participation in economic activities. High GDP growth can lead to high per capita income growth and government expenditures, which might include transfers to the least well off as well as increasing access to services such as health and education. The transfer of benefits is dependent on improvement in the distribution of income.

It is important for certain groups in the population, identified as poor, to receive the benefits from public expenditures on health and education. Given the potential

importance of inequality to growth and poverty reduction, governments must be active in the process of redistribution. Policies of redistribution are important to reduce inequality such as a policy to provide safety nets and direct transfers of funds to the most vulnerable in case of extreme needs. Such public expenditures are needed to prevent some members of the population becoming destitute or to protect them from a sudden decline in earning capacity due to an external shock such as a drought or earthquake. "An effective anti-poverty public spending policy is likely to simultaneously utilise each of these three strategies: promoting growth, direct targeting poor and safety nets for poor" (Le and Winters, 2001, pp. 29).

Appendix IV

$$\max \quad U = -\left[\frac{\alpha_1}{2}\left(G_I - G_I^*\right)^2 + \frac{\alpha_2}{2}\left(G_D - G_D^*\right)^2 + \frac{\alpha_3}{2}\left(G_{ND} - G_{ND}^*\right)^2 + \frac{\alpha_4}{2}\left(B - B^*\right)^2 + \frac{\alpha_5}{2}\left(T - T^*\right)^2 \right] \tag{A4.1}$$

$$\text{s.t. } G_I + G_D + G_{ND} = T + B + A \tag{A4.2}$$

$$G_D + G_{ND} = \alpha_6 T + \alpha_7 A \tag{A4.3}$$

The Langrangian function:

$$U = -\left[\frac{\alpha_1}{2}\left(G_I - G_I^*\right)^2 + \frac{\alpha_2}{2}\left(G_D - G_D^*\right)^2 + \frac{\alpha_3}{2}\left(G_{ND} - G_{ND}^*\right)^2 + \frac{\alpha_4}{2}\left(B - B^*\right)^2 + \frac{\alpha_5}{2}\left(T - T^*\right)^2 \right]$$

$$+ \lambda_1\left[G_I + G_D + G_{ND} - T - B - A\right] + \lambda_2\left[G_D + G_{ND} - \alpha_6 T - \alpha_7 A\right] \tag{A4.4}$$

The first order conditions are given by:

$$\frac{\partial L}{\partial G_I} = -\alpha_1\left(G_I - G_I^*\right) + \lambda_1 = 0 \tag{A4.5}$$

$$\frac{\partial L}{\partial G_D} = -\alpha_2\left(G_D - G_D^*\right) + \lambda_1 + \lambda_2 = 0 \tag{A4.6}$$

$$\frac{\partial L}{\partial G_{ND}} = -\alpha_3\left(G_{ND} - G_{ND}^*\right) + \lambda_1 + \lambda_2 = 0 \tag{A4.7}$$

$$\frac{\partial L}{\partial B} = -\alpha_4\left(B - B^*\right) - \lambda_1 = 0 \tag{A4.8}$$

$$\frac{\partial L}{\partial T} = -\alpha_5\left(T - T^*\right) - \lambda_1 - \alpha_6\lambda_2 = 0 \tag{A4.9}$$

$$\frac{\partial L}{\partial \lambda_1} = G_I + G_D + G_{ND} - T - B - A = 0 \quad \text{(A4.10)}$$

$$\frac{\partial L}{\partial \lambda_2} = G_D + G_{ND} - \alpha_6 T - \alpha_7 A = 0 \quad \text{(A4.11)}$$

We can re-write the above first-order conditions as follows:

$$G_I = G_I^* + \frac{\lambda_1}{\alpha_1} \quad \text{(A4.12)}$$

$$G_D = G_D^* + \frac{\lambda_1}{\alpha_2} + \frac{\lambda_2}{\alpha_2} \quad \text{(A4.13)}$$

$$G_{ND} = G_{ND}^* + \frac{\lambda_1}{\alpha_3} + \frac{\lambda_2}{\alpha_3} \quad \text{(A4.14)}$$

$$B = B^* - \frac{\lambda_1}{\alpha_4} \quad \text{(A4.15)}$$

$$T = T^* - \frac{\lambda_1}{\alpha_5} - \frac{\alpha_6 \lambda_2}{\alpha_5} \quad \text{(A4.16)}$$

Substituting these values (from A4.12 to A4.16) in equation (A4.10) & (A4.11), we get:

$$G_I^* + G_D^* + G_{ND}^* - T^* - B^* - A + \left(\frac{1}{\alpha_1} + \frac{1}{\alpha_2} + \frac{1}{\alpha_3} + \frac{1}{\alpha_4} + \frac{1}{\alpha_5}\right)\lambda_1$$

$$+ \left(\frac{1}{\alpha_2} + \frac{1}{\alpha_3} + \frac{\alpha_6}{\alpha_5}\right)\lambda_2 = 0 \quad \text{(A4.17)}$$

$$G_D^* + G_{ND}^* - \alpha_6 T^* - \alpha_7 A + \left(\frac{1}{\alpha_1} + \frac{1}{\alpha_2} + \frac{\alpha_6}{\alpha_5}\right)\lambda_1 + \left(\frac{1}{\alpha_2} + \frac{1}{\alpha_3} + \frac{(\alpha_6)^2}{\alpha_5}\right)\lambda_2 = 0 \quad \text{(A4.18)}$$

$$x_2 = \frac{1}{\alpha_2} + \frac{1}{\alpha_3} + \frac{\alpha_6}{\alpha_5} = z_1$$

$$z_0 = G_D^* + G_{ND}^* - \alpha_6 T^* - \alpha_7 A$$

$$z_2 = \frac{1}{\alpha_2} + \frac{1}{\alpha_3} + \frac{(\alpha_6)^2}{\alpha_5}$$

Now forming matrix and using crammer's rule, we find the value of λ_1 as follows:

$$\lambda_1 = \frac{x_0 z_2 - x_2 z_0}{x_1 z_2 - x_2 z_1}$$

The above expression can be re-written as:

$$\lambda_1 = \frac{(G_I^* + G_D^* + G_{ND}^* - T^* - B^* - A)z_2 + (G_D^* + G_{ND}^* - \alpha_6 T^* - \alpha_7 A)x_2}{x_1 z_2 - x_2 z_1} \qquad \text{(A4.19)}$$

As x_1, x_2, z_1, z_2 all are parameters, so we write these parameters in the simplified form as defined above and do not incorporate the whole expression defining these parameters.

As we assume that government derives the desired values of targets G_I^*, G_d^*, G_{nd}^*, B* and T* from observable macro-economic data according to the following rules.

$$G_I^* = \alpha_6 Y + \alpha_7 I_p \qquad \text{(A4.20)}$$

$$G_D^* = \alpha_8 Y \qquad \text{(A4.21)}$$

$$G_{ND}^* = \alpha_9 Y \qquad \text{(A4.22)}$$

$$B^* = 0 \qquad \text{(A4.23)}$$

$$T^* = 0 \qquad \text{(A4.24)}$$

Thus the above equation (A4.19) can be re-written as:

$$\lambda_1 = \frac{\left(G_I^* + G_D^* + G_{ND}^* - A\right)z_2 + \left(G_D^* + G_{ND}^* - \alpha_7 A\right)x_2}{x_1 z_2 - x_2 z_1} \tag{A4.25}$$

From (A4.5), we can write:

$$\lambda_1 = \alpha_1 G_I - \alpha_1 G_I^* \tag{A4.26}$$

Substituting this value of λ_1 from (A4.26) into (A4.25), and solving for G_I we get:

$$G_I = \frac{\left(\alpha_6 x_1 z_2 - \alpha_6 x_2 z_1 + \alpha_6 z_2 + \alpha_8 z_2 + \alpha_8 x_2 + \alpha_9 x_2\right)}{x_1 z_2 - x_2 z_1} Y + \frac{\alpha_7}{x_1 z_2 - x_2 z_1} I_P + \frac{\left(z_2 + \alpha_7 x_2\right)}{x_1 z_2 - x_2 z_1} A \tag{A4.27}$$

And finally we get the reduced form equation as specified in the main text of chapter 4:

$$G_I = \phi_1 + \phi_2 Y + \phi_3 A + \phi_4 I_P \tag{A4.28}$$

where

$$\phi_1 = \frac{\left(\alpha_6 x_1 z_2 - \alpha_6 x_2 z_1 + \alpha_6 z_2 + \alpha_8 z_2 + \alpha_8 x_2 + \alpha_9 x_2\right)}{x_1 z_2 - x_2 z_1}$$

$$\phi_2 = \frac{\alpha_7}{x_1 z_2 - x_2 z_1}$$

$$\phi_3 = \frac{\left(z_2 + \alpha_7 x_2\right)}{x_1 z_2 - x_2 z_1}$$

Chapter 5

DEBT INDICATORS, DEBT SERVICING CAPACITY AND DEBT MANAGEMENT IN PAKISTAN

5.1: INTRODUCTION

High debt leads generally to high debt service liability. However, the severity of the debt service liability of a country depends on the relationship of its debt to its GNP and on the level of debt in relation to its debt service obligations. As such, the absolute volume of debt of a country is not perhaps as much a matter of concern as the extent of debt service liability. The level of debt service liability of a country may be high or low depending on its level of economic development. The incidence of debt service liability of a borrowing country is generally reflected from debt indicators expressed as ratios of debt to GNP (Debt-GNP), debt to debt-service liability (Debt-Service), debt-service to foreign exchange earnings (Debt-FEE), etc. The debt service payment may be large or small depending on the values of such debt indicators and the conditions under which loans are sought and received. As such, the values of these ratios and thereby the severity of debt burden keep changing in response to changes in the terms of borrowing and overall economic conditions of a country.[25]

Debt especially external debt of Pakistan has been characterized by wide variations in its past rates of growth. For example, it increased at an annual average rate of 11.3% between 1970 and 1980 and at 2.37 percent during the nineties.

---

[25] Avramovic et al. (1964), Aliber (1980), Nowzad & William (1981) and Lee (1983) very well highlighted the desirability and appropriateness of such indicators.

Growing though at different rates in different periods, its overall amount has now accumulated to a high level of over US $ 38 billion. Consequently, the annual debt service charges of the country have risen in recent years to US $ 2.8 billion. Accordingly, a large share of the country's financial resources emanating form growth of GDP, exports and internal revenue collection is inevitably draining out as repayment of debt-service charges. For this reason, the repayment of debt and debt service charges has recently assumed even more formidable dimensions than defense, unemployment and poverty. In fact, high debt service liabilities are becoming a cause of rising levels of poverty, inequality and unemployment in the country because their settlement at such a high rate in the face of slow growth of exports does not leave enough resources to meet the badly needed expenditures on health, education and general welfare adequately or to allocate in quantity for investment, economic growth, and scientific research and development.

In this chapter, we analyze external debt, debt service liabilities and debt repayment capacity of Pakistan. Succinctly, it has been assessed whether its debt is sustainable and what is its long-run debt-servicing capacity. The incidence of external debt service liability is estimated on the basis of different debt-burden and debt-service indicators of indebtedness. Applying the critical interest approach of analysis has assessed the long-run debt repayment capacity.

5.2: EXTERNAL DEBT AND LIABAILITIES OF PAKISTAN

As mentioned above, Pakistan's total external debt was reported at $ 38.2 billion in June 2000. Of this, $29.2 billion are classified as public and publicly guaranteed debt i.e. the amount owned by the government and public sector enterprises and autonomous bodies and $ 2.84 billion as private sector non-guaranteed debt. The latter category of

loan is made up of loans contracted by Hub Power Company, ICI, Independent Power Producers (IPPs) and other private sectors firms for establishing power, cement, fertilizer and chemical projects in the country. The State Bank of Pakistan provides foreign exchange to service private non-guaranteed foreign debt. In the same year, the Islamic Development Bank (IDB) loaned US $ 1.5 billion to Pakistan as short-term commercial debt to finance the letter of credit for imports of oil, fertilizer, etc and IMF lent US $ 1.55 billion to the State Bank of Pakistan for different purposes. Together, these four components of the national external debt added up to US $ 34.3 billion at the end of FY 2000. In addition to this external debt, the country owed US $ 3.9 billion to different residents, non-residents and institutions in the form of foreign exchange liabilities. This category of debt includes $ 1.5 billion as deposits maintained at the State Bank of Pakistan at its sub-branches, $ 1.4 billion as FE 45 and FE 31 deposits and the remaining as swap funds like National Debt Reduction Policy (NDRP "Qarz-utaro mulk sanwaro" Scheme,), foreign currency bonds, etc. As such, external debt and foreign exchange liabilities together added up to US $ 38.2 billion at the end of FY 1999-2000. It is necessary to mention here that although Pakistan borrows from different countries in their currencies, US dollar loans dominate its stock of debt. To the extent Pakistan repays debt liabilities in US dollars, appreciation (depreciation) of other currencies in relation to US dollars has adverse (favorable) implications for its debt obligations. For example, if Yen and European currencies appreciate, Pakistan's debt obligations increase because the amount of US dollars required to pay the same amount of debt received in Yen and European currencies becomes higher than originally contracted. In 1999-2000, our stocks of debt and liabilities would have been $36.3 billion, had there been no revaluation of

debt on account of currency movements. We had to pay $1.5 billion extra out of our resources just because the value of our debt stock went up in terms of US dollars.

Table 5.1

Pakistan's External Debt and Debt Liabilities

Billion US $

	1990	1995	1997	1999	2000
I. Public and Publicly Guaranteed Debt	19.191	26.246	27.182	26.904	29.189
II. Private Non-Guaranteed Debt	0.304	1.418	2.705	3.435	2.842
III. Central Bank Deposits	0.094	0.105	0.150	0.700	0.700
IV. IMF	0.839	1.63	1.316	1.825	1.55
Total External Debt	**20.428**	**29.399**	**31.353**	**32.864**	**34.281**
V. Foreign Exchange Liabilities	2.471	7.764	11.011	3.736	3.942
Total External Liabilities (I+II+III+IV+V)	**22.899**	**37.163**	**42.364**	**36.60**	**38.223**

Source: Calculated from various issues of Annual Reports of the State Bank of Pakistan.

The public and publicly guaranteed debt of $26.8 billion was made up of bilateral debt of $12.5 and multilateral debt of $14.3 billion. Bilateral debt, which governments of developing countries negotiate with other countries bilaterally, has come under focus since the Paris Club started rescheduling it in 1998-99. In January 1999, the Paris Club rescheduled bilateral debt of $ 3.3 billion of Pakistan under Houston terms.[26]

Repayment of debt-service charges is now becoming an increasingly serious problem for Pakistan due mainly to its crowding out public finances by pre-empting approximately 56 percent of the budgetary revenues necessitating inevitably serious cuts

[26] Houston term indicates that all flows of debt servicing were to be paid by Pakistan between January 1999 and December 31, 2000 including arrears accumulated during the first half of 1999 were postponed. These postponed amounts were to be paid during the next 15 to 20 years depending on whether the debt was ODA (concessional) or non-ODA (non concessional) after a grace period. This flow rescheduling does not reduce the obligations of Pakistan but only provides temporary reprieve.

on growth-promoting and poverty-reducing expenditures. It is indeed unfortunate that we have for some time been borrowing to meet not only our development expenditures but also non-development and recurrent expenditures. Now the important question is: how long could Pakistan afford to repay the continuously increasing debt-service liabilities or what is its level of sustainable debt. Next section answers this question by estimating certain important debt-burden and debt-service indicators.

5.3: DEBT BURDEN INDICATORS

The important debt indicators considered to assess the incidence of debt-service liability and repayment capacity of Pakistan are (i) debt: GNP ratio, (ii) net resource transfer: GDP ratio, (iii) debt-service: export ratio, (iv) debt-service: foreign exchange earning ratio, (v) debt-service: GNP ratio, (vi) interest payment: exports ratio, (vii) foreign exchange reserves: debt ratio and (viii) foreign exchange reserves: imports ratio. These indicators show what has been the status of the external indebtedness and repayment capacity of Pakistan during 1972-73 to 1999-2000.

The values of all these debt indicators are presented in Table 5.2 followed by their graphs. The values of these indicators and their trends show overtime changes in the incidence of debt and debt service charges. The values of the ratio of outstanding debt to GNP of Pakistan depict a fairly fluctuating trend. Specifically, the values of this ratio increased first from 3.95 in 1959-60 to 31.99 in 1970-71 and then fell to 4.13 in 1971-72. It suddenly jumped in 1972-73 to peak at 62.52. Later on, it trended continuously down to 30.65 in 1985-86. Once again, it rose irregularly to 51.90 in 1999-2000. What underlies these values is that Pakistan would have required to arrange funds equivalent to

one-third in the eighties and over half of its GNP in the nineties, had it decided to repay all its outstanding external debt in those years.

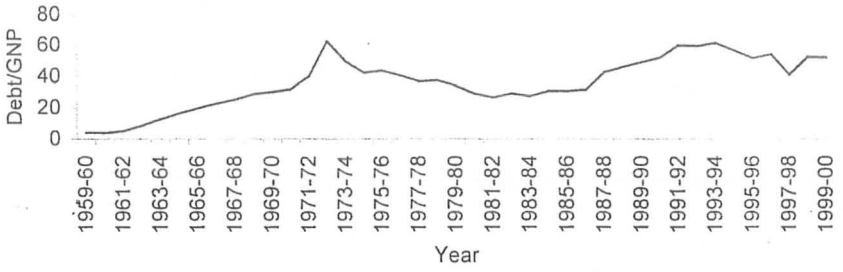
Table 5.2
Various Debt Indicators for Pakistan

Years	Total Debt as percent of GNP	Net Resource Transfer as % of GDP	Debt Service as % of Export Receipts	Debt Service as % of Foreign Exchange Earning	Debt Service as % of GNP	Interest Payment as % Exports Receipts	Foreign Exchange Reserves as % of Debt	Foreign Exchange Reserves as % of Imports
1960-61	4.02	8.43	14.9		0.4	5.26	119.30	
1961-62	5.08	6.79	27.2		0.7	9.65	81.78	
1962-63	8.68	10.55	22.4		1	6.20	61.03	
1963-64	12.79	9.94	27.4		1.2	7.95	31.16	
1964-65	16.47	11.70	25.9		1.1	10.44	14.40	
1965-66	19.7	7.54	29.2		1.1	13.02	16.00	
1966-67	2.2.7	0.55	35.2		1.3	16.13	6.72	
1967-68	25.27	0.98	31.2		1.3	13.28	6.10	
1968-69	28.85	1.24	44.3		1.8	18.22	9.68	
1969-70	30.26	0.81	52.1		1.8	21.02	7.87	12.23
1970-71	31.99	0.61	43.3		1.7	19.27	5.23	13.86
1971-72	4.13	2.07	20.6		1.3	8.61	7.95	27.98
1972-73	62.52	2.16	23.6	18.1	3.	10.52	12.93	49.54
1973-74	49.44	1.71	19.2	14.2	2.2	7.70	13.44	36.63
1974-75	42.55	2.02	23.9	16.3	2.2	10.02	9.79	21.07
1975-76	43.74	2.64	22	13.8	1.9	9.59	10.06	24.80
1976-77	40.65	3.90	27.3	15.4	2.1	11.99	9.46	23.16
1977-78	36.81	6.88	25.3	11.4	1.8	12.73	9.56	22.69
1978-79	37.53	7.59	25.5	11.9	2.2	11.87	12.83	24.02
1979-80	34.1	8.00	24.7	11.9	2.5	9.90	15.79	25.95
1980-81	29.12	7.98	20.4	10.4	2.1	8.20	13.75	21.33
1981-82	26.83	7.86	20	8.8	1.6	8.29	15.49	25.40
1982-83	29.38	7.74	23.5	9.6	2.2	9.00	22.31	37.60
1983-84	27.35	9.78	26.3	10.9	2.3	9.91	13.17	20.95
1984-85	30.88	8.63	31.6	12.8	2.5	11.03	10.62	18.40
1985-86	30.65	8.85	29.5	13.5	2.8	9.96	9.80	18.35
1986-87	31.67	7.67	29.9	15.7	3.3	9.65	8.58	18.49
1987-88	42.63	5.86	25.1	14.7	2.9	8.42	6.99	12.87
1988-89	46.18	5.23	24.1	14.4	2.8	8.80	7.10	13.36
1989-90	49.11	5.52	34.9	14.4	3.1	8.59	5.06	10.04
1990-91	52.04	5.02	21.5	13.7	2.9	9.66	5.22	10.33
1991-92	59.75	6.39	21.9	13.4	3.1	9.40	6.12	11.90
1992-93	59.35	4.50	24.2	15.3	3.2	9.80	8.14	13.83
1993-94	61.44	4.58	25.7	16.2	3.3	11.00	13.58	29.12
1994-95	56.65	3.99	25.1	16.5	3.4	9.71	8.39	17.04
1995-96	51.80	3.73	24.5	16.7	3.3	8.56	4.40	7.53
1996-97	53.93	4.69	27.2	17.6	3.6	8.77	5.99	10.72
1997-98	40.98	5.07	27.3	17.6	3.8	5.39	5.04	10.64
1998-99	52.39	3.96	19.7	13.6	2.6	7.15	2.71	11.29
1999-00	51.90	4.99	16.8	10.8	2.2	8.03	3.29	14.90

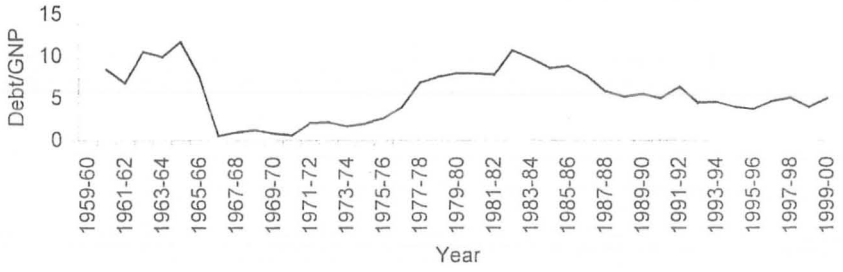
Source: Estimated by researchers.

Figure 5.1
Graphical Reflections of Trends of Values of Different Debt Indicators

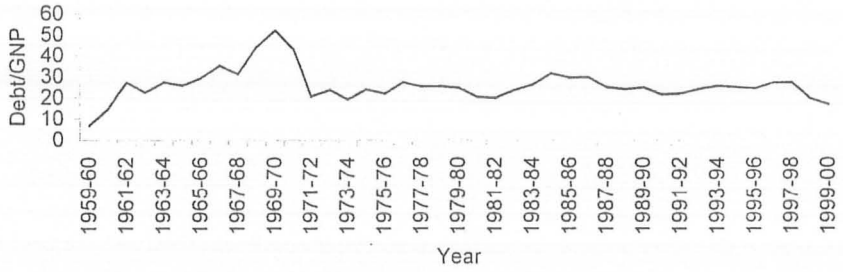
(a)Total Debt as Percent of GNP



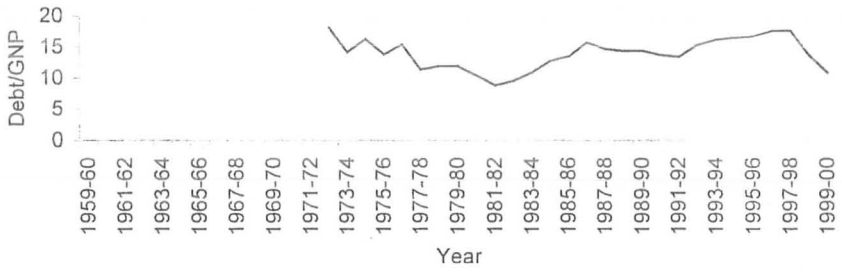
(b)Net ResourceTransfer as % of GDP



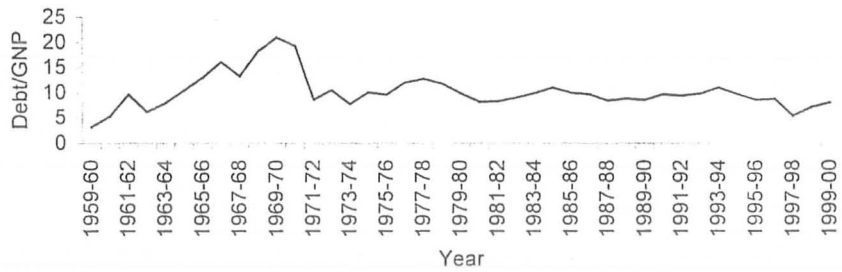
c: Debt Service as % of Export Receipts



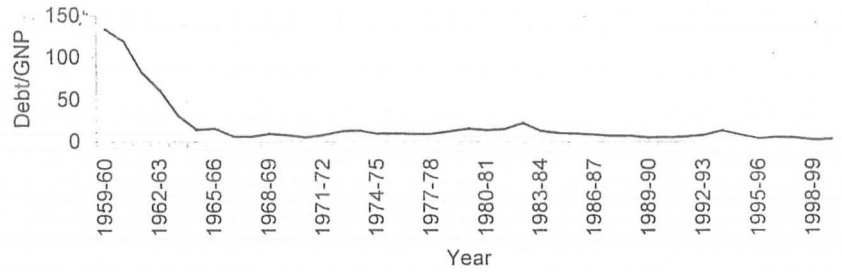
(d) Debt Service as % Foreign Exchange Earning



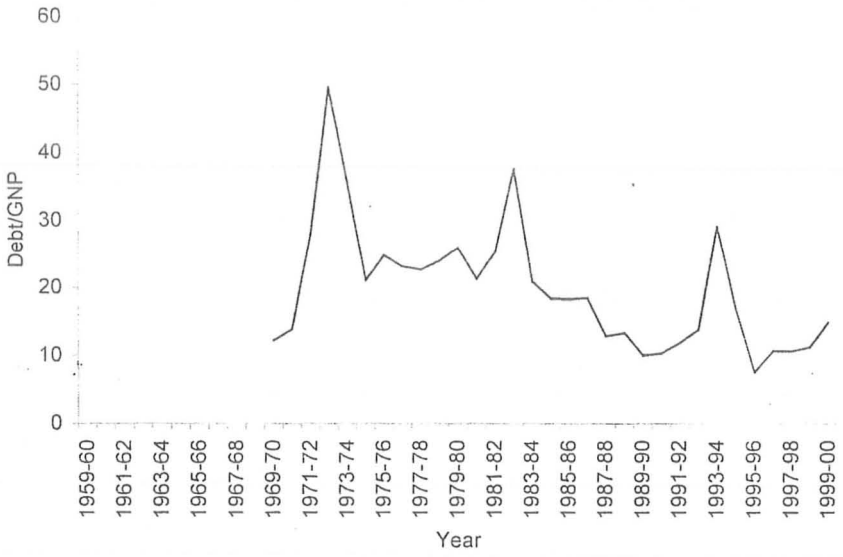
(e) Interest Payment as % of Exports Receipts



(f) Foreign Exchange Reserves as % of Debt



(g) Foreign Exchange Reserves as % of Imports



When the loan of a country, according to the World Bank, reaches to 80 percent of its GNP, it becomes unsustainable. Although from this point of view, the loan of Pakistan did not become unbearable in the period of analysis, we tend to state that a country does not feel at ease when its foreign debt equal to 50 per cent or more of its GNP.

The ratio of debt-service to earnings from exports, another indicator of debt-burden, has fluctuated between 7 and 35 percent from 1959-60 to 1967-68. Its value rose from 35.2 in 1966-67 to 52.1 in 1969-70 and then fell to 20.6 in 1971-72 and ranged between 19.2 and 34.9 from 1975-76 to 1997-98. However, declining in the last two years, this ratio has reached 16.8 in 1999-2000. According to the World Bank, when debt servicing of a country transcends 20 percent of is export earning, its debt becomes

unsustainable. It may thus be argued that in accordance with this indicator, the debt of Pakistan was unsustainable from 1961-62 t0 1978-79. However, Pakistan was among the heavily indebted countries in the period 1968-69 to 1970-71 when the value of its debt-service to export receipts indicator was as high as 44 to 52 percent. This suggests that debt obligations of Pakistan have in the past been caused by the liquidity problem arising from inadequate increase in its export earnings. As such, Pakistan had to seek rescheduling of its debt-service payments. In fact, it availed itself of rescheduling of debt service charges twice during the seventies and more than five times in the nineties.

Debt-Service as percentage of foreign exchange earnings is another important indicator of indebtedness of a country. This ratio hovered around 15 percent from 1972-73 to 1976- 77, around 10 percent between 1978-79 and 1983-84, again around 15 percent during 1984-85 to 1992-93 and finally around 17 percent from 1993-94 to 1997-98. However, the value declined to 10 per cent in 1999-2000.

The debt indicator, which is considered more useful than other indicators in the long run, is the ratio of debt service liability to GNP. This ratio increased nearly continuously from a minimum of 0.3 percent in 1959-60 to 3.8 percent in 1997-98 and varied between 2 and 3 percent during most of the years of the study period. Another similar indicator of indebtedness is net resource transfer as percentage of GDP i.e. disbursement minus debt-service relative to GDP. Its value has ranged from a minimum of 0.55 percent in 1966-67 to a maximum of 11.70 percent in 1964-65. The second highest value was recorded as 10.74 percent in 1982. However, its value in recent years has fluctuated between 4 and 5 percent. This implies that the contribution of foreign savings in Pakistan is declining continuously since 1982.

The incidence of debt service liability expressed in the form of foreign exchange reserves as percentage of external debt has declined very sharply over the years. More specifically, it first plummeted from 133.79 percent in 1959-60 to 61.03 in 1962-63 and then to 31.16 in 1963-64 and fell further constantly down to as low as 3.24 percent in 1999-2000. The constant decline in the value of this ratio means regular increase in the country's vulnerability to debt-service liability. In contrast to the behavior of the this indicator, the ratio of interest payments to exports receipts increased at a somewhat high rate in the sixties and peaked at 21.02 percent in 1969-70. However, it varied between 7.7 and 12.7 percent during the seventies, between 8.2 and 11 percent in the eighties and between 5.3 and 11 percent in the nineties. This suggests that during the sixties, foreign borrowing were perhaps either consumed or were not invested in as efficient projects as undertaken in the period from seventies onward. This trend of the earlier policy could have added to the vulnerability of the country to its debt-service liabilities.

It may be argued on the basis of the above discussion that the external debt as percentage of GNP increased at a faster rate in the late nineties than in earlier years of the study period. However, debt service liability as a ratio of export receipts and as a ratio of foreign exchange earnings in particular has been characterized by relatively small yearly variations throughout the period of analysis. Yet, even small variations indicate significant changes in the incidence of debt-service liability. The other implication of small variations in this ratio is that there has been no decrease in the debt-service liability of Pakistan. Rather the incidence of the debt-service liability has increased as indicated by a regularly rising trend in its ratio of GNP. However, Pakistan's foreign debt has not become unsustainable, although it reached very close to it in some years.

5.4: DEBT SERVICING CAPACITY OF PAKISTAN

5.4.1: METHODOLOGY AND DATA

The values of the chosen indicators of indebtedness of Pakistan are estimated on the basis of data obtained primarily from two government sources: *Economic Survey* of the Ministry of Finance and *Annual Reports* of the State Bank of Pakistan. Debt service liability is assessed by methods of percentages. Briefly, debt and debt-service charges are expressed as percentages of annual values, for example, of GNP, exports, foreign exchange earnings, imports etc in different ways. The methodology of assessing the long-run debt-servicing capacity of Pakistan is based on the comparison of costs and benefits of foreign loans used in the process of economic development. There are two methods of determining the debt-service capacity of a country. First method commonly used to compare costs and benefits of aid/loan is the critical interest rate (CIR) approach. The second approach is the identification of the limit value of the Debt-GDP ratio. The CIR indicates the level of interest rate that makes the growth rate of external debt equal to the growth rate of GDP. It is also the maximum interest rate that can be paid on external loans while maintaining at the same time a desirable debt-GDP ratio. In principle, if the average interest rate on external loans exceeds the CIR, debt will increase faster than GDP leading thereby to an ever-increasing debt burden. Algebraically, the CIR is calculated as:

$$CIR = \frac{g(s_1 - s_0)}{(kg - s_0)} \qquad (5.1)$$

where, g is growth rate of GDP, s_1 marginal saving rate, s_0 average saving rate at the beginning of the period, and k is incremental capital-output ratio. For the purpose of this study, the values of *CIR*, g and k are calculated for different time periods to know how

the debt-servicing capacity of Pakistan may have changed. The optimal borrowing capacity can also be found conceptually by using a simpler model than this model.[27] Technically, optimal external borrowing is a function of its costs and benefits. The terms at which foreign capital can be obtained is crucial in determining the cost-benefit ratios. The objective is to obtain foreign loans at such an interest rate as renders debt/GDP ratio stable over time. A stable debt/GDP ratio may depend on a particular relationship among relevant variables. The equation mentioned below connects the required variables in a relationship, which determines the convergence of external debt to a stable ratio in terms of GDP.[28]

$$\frac{D}{Y} = \frac{(kg - s)}{(g - i)} \tag{5.2}$$

where, D, Y, k, g s and i denote external debt, Gross Domestic Product GDP, incremental capital output ratio, growth rate of GDP, marginal saving rate and interest rate on external debt. The equation clearly shows that debt-GDP ratio is an increasing function of the interest rate on external debt. To determine the effect of a change in GDP growth rate on the debt-GDP ratio, consider the following derivative:

$$\frac{\partial\left(\frac{D}{Y}\right)}{\partial g} = \frac{(g - i)k - (kg - s)}{(g - i)^2} = \frac{s - ik}{(g - i)^2}$$

[27] Avramovis (1964), Solomon (1977), Nowzad (1981) and Lee (1983) highlighted the use of simple model in their studies.

$$\frac{(s-ik)}{(g-i)^2} > 0 \text{ if } i < \frac{s}{k} \text{ and } \frac{(s-ik)}{(g-i)^2} < 0 \text{ if } i > \frac{s}{k}$$

It follows that debt-GDP ratio will increase or decrease with the growth rate of GDP depending on whether the interest rate on external debt is less than or greater than the ratio of saving rate to incremental capital output ratio. In case of Pakistan's economy the most likely case is that the interest rate is greater than the saving to capital output ratio.

5.4.2: RESULTS AND DISCUSSION

Table 5.3 represents the values of CIR for Pakistan for different periods as derived from Equation 5.1. The table 5.3 shows that the value of CIR for the study period 1972-73 to 1999-2000 has turned out as 4.31 percent. This value of CIR signifies that if Pakistan intends to maintain its current Debt-GNP ratio over time, it needs to pay interest at the rate of 4.3 percent on new loans. It is interesting to know that Pakistan has been paying an average interest rate of 2.8 percent on external debt for the last four years from 1997-98 to 20001-2001.[29]

It may be mentioned that the value of the CIR estimated as 4.3 percent for the whole study period is certainly not a very encouraging value. The reason is that it refers to the fact that the long-run repayment capacity of Pakistan is not very high. However, the situation would have even worse, had it not been able to borrow on concessional terms. In most of the years prior to mid nineties, Pakistan has been paying more than 4 percent rate of interest on external loans.

---

[28] For detail see Lee (1983).

[29] The total interest payments on external debt of US $ 32080 million were US $ 1095 million accounted as 3.4 percent, in 1998-99, external debt was US $ 32864 million and interest payments were US $ 752 million at the rate of 2.2 percent. In 1999-2000, total external debt is US $ 34281 million and interest payments were US $ 975 million at the rate of 2.8 percent and in the year 2000-2001, total external debt is estimated as US $ 34688 million and interest payments were US $ 937 million at the rate of 2.7 percent.

TABLE 5.3

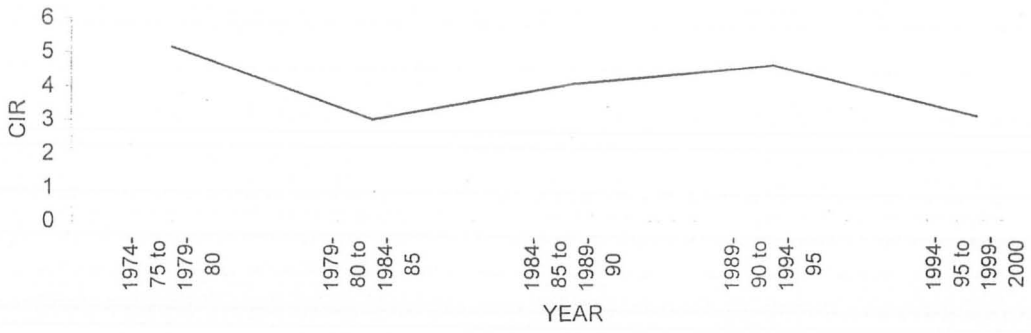
Critical Interest Rate (CIR) For Pakistan

Period	Growth Rate of GDP	Marginal Saving Rate	Incremental Capital Output Ratio	Average Saving Rate	Critical Interest Rate
1974-75 to 179-80	5.19	16.43	3.87	11.72	5.15
1979-80 to 1984-85	6.66	15.24	2.74	14.58	3.01
1984-85 to 1989-90	5.96	17.10	3.19	15.02	4.06
1989-90 to 1994-95	4.82	12.97	4.47	15.68	4.60
1994-95 to 1999-2000	3.74	15.00	5.36	13.38	3.09
1992-93 to 1999-2000	3.54	12.08	5.74	13.86	2.62
1972-73 to 1999-2000	5.58	16.27	4.10	13.83	4.31

Source: Estimated using the method of analysis 5.4.1.

The trend in the values of CIR for different periods considered is also reflected from the figure below:

Figure 12
CRITICAL INTEREST RATE (CIR) FOR PAKISTAN FOR DIFFERENT TIME PERIODS



The CIR decreased close to 3 percent toward the end of the study period from 1994-95 to 1999-2000, the lowest of all the values for its sub-periods. This figure means that we will be able to maintain our current debt-GNP ratio only if we are able to get new loans at an interest of less than 3 percent. Why the value of CIR has turned out to be

lowest in the nineties is because the marginal savings rate has been less than the average saving rate in these years. The CIR value of 5.15for the period from 1974-75 to 1979-80 was the highest implying higher debt servicing capacity of the country in that period.

As could have been expected, the overtime variation in the value of CIR depends on the values of three parameters, namely incremental capital output ratio, marginal saving rate and GDP growth rate. How the value of CIR is affected by different values of these parameters is shown in Table 5.4 below.[30]

TABLE 5.4

Changes In Cir And Effects Of Its Determinants*

Period	Incremental Capital output Ratio Effect	Marginal Saving Rate Effect	GDP Growth Rate Effect	Change in CIR
1974-75 to 1985-86	0.15 (36.58)	0.18 (43.91)	0.08 (19.51)	0.41 (100.0)
1972-73 to 1999-00	0.09 (32.14)	0.14 (50.00)	0.05 (17.86)	0.28 (100.0)

Source: Estimated comparing the average level of CIR with its actual value in the current year.

Table 5.4 shows that about 44 percent of the variation in CIR is caused by changes in the marginal rate of saving. The incremental capital output ratio, on the other hand, accounts for 36 percent of the variation in CIR. The remaining variation in CIR is explained by the variation in the GDP growth rate. Higher GDP growth rate and higher marginal saving rate lead to a smaller but a higher marginal rate of saving to a higher CIR. It implies that improving the existing low marginal saving rate of Pakistan can enhance its debt-servicing capacity.

---

[30] Following Lee (1983), the effect of each determinant has been calculated by comparing the average level of CIR with its actual value in the current year. Figures in the parenthesis are changes in CIR due to each determinant expressed as percentage of change in CIR caused by simultaneous change in the determinant.

The values of different debt indicators and CIR show that further negotiations of any substantial loans and aids from foreign donors are likely to become more and more difficult for Pakistan. Thus, the safe way left to enhance the economic growth of the country now is to drastically reduce if not completely get rid of expensive external loans. Inept management of debt and regularly rising debt to GDP are likely to induce changes in the main macroeconomic indicators like crowding out of investment, fiscal instability, inflationary pressures and exchange rate fluctuations etc. Further, rising debt burden has also many undesirable implications for the country. There is, therefore, a need to make serious attempts at finding a sustainable indigenous solution of the debt. Since debt becomes a concern when it crosses manageable and sustainable limits, policy makers are suggested to formulate a process by which government is forced to use loans effectively. Debt is used efficiently as long as the level of external debt-service and the ratio of debt service to total revenue are either falling or at least remaining constant. Foreign loans are and can be sustainable as long the projects financed with borrowed money generate sufficient output and export earnings for debt repayment. Further, it is required to maintain capital output ratio and higher marginal saving rate to avoid unsustainable rate of interest on foreign loans.

5.5: DEBT MANAGEMENT IN PAKISTAN

Debt is not a matter of concern as long as it is manageable and sustainable. Debt management is the process by which the government acquires and uses the debt effectively and efficiently. Debt is manageable as long as the cost of acquiring debt is reasonably low and debt obtained is used efficiently in such a way that it helps growth and efficient allocation of resources in the long run. Debt is used efficiently if the ratios

of debt service to total revenue and external debt service to exports fall or remain constant. The underlying assumption is that the projects for which borrowed money is used would generate sufficient output and exports for debt repayment.

Public debt management typically involves activities ranging from the formulation of a debt/borrowing strategy. This strategy is generally based on country's debt situation, financial market situation, need of new finances, use of borrowed money, meeting of debt service obligations on time and maintenance of information systems and databases.[31] These activities need to be governed under an explicit and clear legal mandate and organized under a framework where roles and responsibilities of the agencies involved are well specified. The legal arrangements should specify clear rules and procedures about how the debt management functions are to be carried out. Also coordination and clear functional division is needed between different offices of debt management. Transparency and accountability are particularly important for good debt management.

Debt management is one element of overall macroeconomic policy and it needs close coordination with fiscal, monetary and other macroeconomic policies. Coordinated policies are especially important in overcoming adverse exogenous developments. In order to monitor and evaluate the risks and costs associated with a given level and structure of government's debt, a comprehensive and forward-looking debt strategy should be formulated regularly. This strategy needs to take into account the financial characteristics of fiscal revenues and other cash flows available to the government to service its debt. The debt strategy should be updated regularly keeping in view the annual

[31] Often referred to as the front, middle and back office functions; for more detail see " Guidelines for Public Debt Management," World Bank and International Monetary Fund (February 2001).

budget, public investment program and country's expenditure framework. These systematic evaluations help to ensure that borrowed resources are used efficiently in support of a country's poverty reduction strategies and that long-term sustainability is not compromised. The fundamental guiding principle in this respect is that borrowing must be kept in line with repayment capacity. This must also take into account the amount and terms of new borrowing as well as the vulnerability of income sources (exports/fiscal revenue) to unexpected shocks.

Aside from managing new borrowing, government needs to manage the risk and cost on their outstanding liabilities. In this regard the emphasis should be on monitoring all categories of debt stock, ensuring timely debt service payment through accurate forecasting of debt-service obligations and analysis of existing debt stock with respect to the currency composition, the maturity profile and interest rate structure.

Debt management activities need to be supported by accurate management information and data systems, ensuring timely payment of debt service obligations as well as making available a comprehensive debt data.[32] This all requires debt offices equipped with computer tools and staff with a combination of financial skills (e.g., portfolio and risk management), analytical skills (debt sustainability analysis) and a sufficient knowledge of macroeconomic policies. Other key elements that help to build strong staff capacity include a clear mandate and definition of responsibilities, evidence of an impact on policy-making and access to training.

[32] Commonly used debt recording packages include the CS_DRMS developed and provided by the Commonwealth Secretariat, and the DMFAS system, developed and provided by UNCTAD, but some countries use in-house or spread-sheet based systems. Regarding debt analysis and simulations, most HIPCs use a privately developed software (DEBT-Pro), while some use a system recently developed by the World Bank, DSM+.

In past, Pakistan's debt management strategy generally focused on finding new and cheap sources of finance and ignored the proper use of available funds. The adverse impacts of loans on domestic savings, corruption, capital flight and donor's agenda are the main reasons of the improper use of borrowed money in Pakistan (Kemal 2002). This is why the debt management has become a much serious problem in Pakistan. There is need for early resolution of debt problem in Pakistan because it could otherwise slow-down the growth and adversely affects the overall macroeconomic situation in Pakistan (GOP, 2001).

5.5.1: ISSUES IN DEBT MANAGEMENT IN PAKISTAN

Debt Management Agencies

The responsibility of debt management in Pakistan rests mainly on the Ministry of Finance. Its subdivisions, namely the Economic Affairs Divisions (EAD) and the Finance Division (FD) maintain most of the relevant information on almost all aspects of the debt. The EAD monitors and keeps track of aid inflows, debt servicing and the allocation of funds received in aid, grants and borrowings. It also manages technical assistance (training and infrastructure development) necessary to implement various aid programs. Policy making with regard to debt is done in the FD. The Export Finance Wing of the FD plays a key role in designing medium- to long-term policies, keeping in view the inter-linkages between debt related variables (e.g. borrowings and debt servicing) and the current and capital accounts of the balance of payments. Thus, the EAD performs the task of implementation, monitoring and record keeping under the policy framework designed by the FD. In addition, the State Bank of Pakistan (SBP) also maintains debt related

data.[33] Debt management, planning and policies at the Ministry of Finance are coordinated with the SBP in order to look into the financial side of the matter, and with the Planning Commission of Pakistan to seek economic advice. This coordinated combination makes debt management relatively more transparent.

Pitfalls in Debt Management

Debt management in Pakistan is lacking in many respects such as poor coordination across debt management agencies, lack of feasibility analysis and long-term planning, piecemeal approach to the problem and lack of contingency risk management. Donor agencies could also be blamed for imposing unrealistic conditionalities and following their agenda without full appreciation of ground realities.

Lack of Coordination

As noted in the recent report by the Debt Reduction and Management Committee (Government of Pakistan 2001), in practice debt management is segmented into many departments with poor state of coordination and information flow. The data management systems are mostly outdated. Access across departments on computers is not available. Although the use of computers for record keeping has increased quite rapidly in recent years, the systems being used are upgraded with long time lags because the staff is not fully trained to keep pace with the innovative world of information systems. The situation at the EAD and the SBP has improved in recent years as a result of generous technical assistance and training programs funded by the ADB. The SBP also implemented a well-planned reform program and inducted fresh staff with better familiarity, orientation and

[33] The Central Directorate of National Savings records all the information on domestic public debt raised by National Savings Schemes of the Government of Pakistan.

ability to adjust to advancements in finance and information technology.[34] However, the use of modern information systems in debt management, accounting and auditing practices in government departments, is by and large in infancy.

Poor Feasibility and Plans

Economic problems in Pakistan, including the debt issue, are often addressed under crisis-like situation, and project feasibility and long term planning are almost confined to file work. As a result, solution strategies often seek quick results that in most cases are infeasible. Decision-making rests mainly on whims and personal intelligence, rather than objective analysis. Political motives and vested interests stand above socioeconomic considerations. Since political factors in Pakistan are volatile, long-term plans and feasibility report, even when they exist, are given low priority at the level of policymaking and implementation.

The case of foreign direct investment in the power sector during the early 1990s provides a notable example. The decision-makers were so much occupied with the urgent need to bridge the external resource gap and to remove power shortage bottleneck that the full repercussions of the contractual arrangements reached between independent power producers (IPPs) and the Water and Power Development Authority (WAPDA) were not realized. Price disputes erupted later on as WAPDA suffered losses by committing itself to buy IPPs' production at the prices much higher than the average cost of production from its own units. Potential foreign investors shied away from Pakistan as the long court battle polluted the investment climate. The disputes finally ended with an out of court settlements and WAPDA could not gain any worthwhile concession in prices.

---

[34] The improvement in data management and analytical ability at the SBP is evident from the quality of the analytical discussion and related presentation of data in the latest issue of its *Annual Report*.

Profit repatriation by IPPs is likely to have a significant adverse effect on Pakistan's balance of payments position. Though no direct figures on the annual cost of profit repatriation are available from the official documents, Debt Reduction and Management Committee (Government of Pakistan 2001) estimates it at US$ 1 billion, which is above 10% of Pakistan's annual foreign exchange earnings.

Furthermore to bring WAPDA out of financial crisis, the price of electricity has also been increased. The unprecedented increase in energy prices has put great economic pressure on households, especially the salaried class whose incomes have been frozen for the past five years. The main victims of energy price-hikes are the small-scale producers who have to bear a rising real cost of production.[35]

The report of Debt Reduction and Management Committee (Government of Pakistan 2001) points out a number of high-spending projects, such as Motorways, Saindik copper, Tamir-i-Watan, Left Bank Outfall Drain, National Drainage Program, Chashma Right Bank Canal Project and Social Action Program, that failed to produce the desired impacts.

Piecemeal Approach

Another shortcoming in the debt management practices seldom highlighted in policy-making circles in Pakistan is the weak coordination between domestic and foreign debt. Again, the reason for such a piecemeal approach is the preoccupation with the most urgent task at hand. Confronted with the urge to find ways and means for servicing foreign debt and minimizing the associated default risk, the debt management agencies

[35] The annual compound growth rate of energy CPI from 1995-96 to 1999-2000 was 8.54%, compared to 7.19% growth in the general CPI. The producer prices increased even much higher as the energy price index increased by 12%, against a 6.85% growth in the general price index. It is further to be noted that these estimates understate the difference between inflation in energy and non-energy prices because the general indices also include energy prices.

have tendency to relegate the domestic debt management to routine work. Even academic studies, with the exception of Ahmad (1996) and Ahmad and Ahmed (1998), tend to analyze foreign debt as an issue unrelated to domestic debt. Simulation exercises in Ahmad (1996) demonstrate how closely are the two forms of debt inter-linked.[36]

Statistics show that the burden of domestic debt is larger than that of foreign debt, both in terms of size and debt servicing costs. However, the foreign debt problem has turned into a crisis due to Pakistan's inability to accumulate the foreign exchange required for the interest and principal payments, and difficulty in rolling-over the debt. Besides, common citizens, who have to pay a high price in terms of tough IMF conditionalities for further loans, are much more informed about foreign debt than about domestic debt. Nevertheless, though Pakistan never faced serious difficulties in rolling over domestic debt denominated in domestic currency, the rising interest costs have the potential of creating a debt crisis on the domestic front as well. Interest payments on domestic debt as a percentage of government revenue have increased sharply from 21.6% in 1990-91 to 43% in 1999-00 and this trend raises serious doubts on the sustainability of domestic debt.

Poor Contingency Risk Management

At present there does not appear to be any effective strategy to deal with contingent liabilities on the public sector. According to the estimates in the report of Debt Reduction and Management Committee (Government of Pakistan 2001) the contingency payment for the period 1998-00 was to the tune of 55 billion rupees (about US$ 1 billion) and another 66 billion rupees contingency payment is anticipated for the next three years.

[36] For example, a startling result found in the studies is that attempts to retire external debt through privatization sales

The report attributes the contingency payments to two factors: losses in the public sector enterprises and borrowing outside the budget. Since government has followed a liberal policy on providing public guarantee on loans raised by public sector enterprises and on providing bailout grants to cover their on-going losses, this has encouraged the public sector enterprises to make larger claims on the government budget. Public guarantees have even been extended to non-public entities like the IPPs, Pak-Arab Refinery and Army Welfare Trust (Government of Pakistan 2001).

The contingency liabilities also often arise due to unanticipated increases in government expenditures, while the unanticipated shortfalls in tax collection further add to the risk. This can at least partly be attributed to ambitious budget targets in order to please the donor agencies to negotiate the loan packages. It is not surprising that due to its inability in meeting the agreed budget targets Pakistan has frequently found itself in an embarrassing position in its negotiations with the IMF on the continuation of the loan packages. As a result the disbursement of loans has quite often been delayed, thereby increasing the financial risk on Pakistan and resulting in downgrading of its credit worthiness.

One can make a case to argue that not all the contingency liabilities are truly contingent because most of these payments can be anticipated on the basis of past records. The public sector enterprises have been running losses for the past many years and budget target have seldom been met. Moreover it is surprising that the budget making exercises do not fully take into account the impact of various fiscal and pricing policies on the financial positions of public sector enterprises. For example the losses suffered by WAPDA due to IPP factor and the increases in petroleum price could have been

---

to foreign investors are most likely to end up in retiring domestic debt, with little change in the size of the foreign debt.

anticipated. In any case the huge contingency payments can be linked back to weaknesses in coordination, planning and implementation.

Donors' Responsibility

Along with poor debt management problems within Pakistan, the donor agencies, particularly the IMF, also have their share in aggravating the crisis. Despite all the apparent emphasis of the World Bank and the IMF on poverty and the social sector, Pakistan has experienced adverse trend on both accounts. One of the reasons is that the conditionalities attached to aid packages tend to neutralize the intended outcomes. Most IMF conditionalities, particularly on energy pricing, subsidies and taxation, are based on hardcore neoclassical economics and lack human touch. The primary focus of the conditionalities has been on resource generation by direct fiscal measures with little consideration of their effects on capacity of the economy in sustaining the debt burden. For example the tax revenue targets in the past few years could not be achieved partly due to slowing down of the economy and partly because the targets were not realistic to begin with. Furthermore the most visible effect of the drive to reduce budget deficit has been a sharp decline in the public sector development expenditure.[37]

The donor agencies have not shown as much concern over many of the unfeasible projects in the areas of infrastructure and social sector development as on the failure in meeting budget targets. The report of Debt Reduction and Management Committee (Government of Pakistan 2001) echoes the widespread complaints about the dominant role of foreign consultants and donor agencies in ill-conceived projects.

Surely the donor agencies stand to share the blame for the current state of affairs in

[37] The share of development expenditure out of the total government expenditure has declined from 25.3% in 1989-90 and to just 12.9% in 1999-00. The development expenditure at constant prices declined even in absolute terms by 32.4%

Pakistan, though as pointed out in Hasan (1999); Pakistan's own capability in putting forward viable projects and arguing against unreasonable IMF conditionalities has been a serious problem area.

Implications of Financial Reforms

Pakistan's debt situation can be linked to a number of real or potential changes in its financial sector. The financial liberalization program initiated in late 1980s and carried on to early 1990s was expected to divert funds from public to private sector, especially from unfunded debt to stock market. An initial move in this direction was witnessed during the first three years of 1990s when the stock market in Pakistan went into boom. During this period the annual growth rate of funds invested in NSS declined from the previous three-year average of 22.4% to just 3.8%. The CPI-inflation adjusted annual net investment in NSS in the corresponding period declined from 25.5 billion rupees to just 4.8 billion rupees in 1990-91 prices. The shortfall in public borrowing was partly made up by excessive increase in permanent debt.[38] But this diversion was temporary as the stock market went into a prolonged recession following political instability and poor law and order situation in mid 1990s, and the debt management crisis in the later years. In the next three years (1993-94, 1994-95 and 1995-96) the average annual growth rate of funds in NSS went up to 20.2% and the CPI-inflation adjusted annual net investment in NSS increase to 24.9 billion rupees.

One of the reasons for the popularity of NSS is the increase in retirement savings due to improvements in life expectancy. But the main reason is that the funds invested in NSS are considered safe assets as the rate of return has remained quite stable and there

---

during this period, while the per capital development expenditure declined by 49.7%.

[38] A negligible diversion of funds from floating debt to stock markets also took place during this period.

has never been any incidence of mismanagement or misappropriation of funds. It is quite encouraging to note that despite operating a wide network of national saving centers the Central Directorate of National Savings has kept its operating costs low and has shown a reasonable degree of management efficiency, a rare attribute in the public sector. As a result the debt raised through NSS has also proved to be the safest form of debt for the government.

Since the schemes have many attributes of pension funds, there is ample room to expand their scope not only for the sake of minimizing the debt default risk, but also to provide safety net to the retired and elderly population. At present the Central Directorate of National Savings does not appear to have any notable marketing strategy to counter the aggressive marketing campaign run by commercial banks and it has been long since any innovative saving instruments are introduced. One can view this approach as pragmatic, because modernizing the schemes would add to their operating costs. Nevertheless the scheme does not maximize the saving potential and there are many directions in which the scope of the scheme can be expanded. For example there is no scheme in which ex-patriot Pakistanis or even residents can accumulate retirement savings in foreign currency. This is certainly an attractive way to restructuring at least a portion of foreign debt by retirement savings. The other saving instruments that can be introduced are the regular saving scheme for retirement income and a home ownership saving scheme.

The most important, thought at the same time difficult, phase of financial reforms is to restore efficiency in the banking sector.[39] Apart from the privatization of a few small banks and floating of certain percentage of assets of some large banks in the stock market

in the early 1990s, the banking industry in Pakistan is still dominated by the public sector. In spite of a surge in the number of newly opened private and foreign banks, the nationalized banks account for 53.4 total bank deposits as of the year 2000 (State Bank of Pakistan 2001).

The public sector banks have played a significant role in the emergence of the so-called sick units in the manufacturing sector. These banks have been the prime source of imprudent loans for such business ventures that were uneconomical. In some cases loans were advanced even for the businesses that did not exist.

Though the privatization of nationalized banks has been on the priority list of financial reforms agenda since the 1980s, the process has been to slow. The major difficulties in the privatization are threat of job losses to tens of thousands of bank employees, especially during the late 1990s and 2000s when the economy remained in recession, and poor financial health of the banks. Most of the banks are over-staffed and run billions of rupees of the so-called 'bad loans' According to the latest estimates the non-performing loans as percentage of total advances is 26.5% in nationalized banks, compared to 11.6% in private banks and just 5.1% in foreign banks. A number of studies (e.g. Ahmad 1999 and Ahmad and Ahmad 1998) have reported high degree of allocative inefficiency in the banking sector of Pakistan. One simple indicator is the huge gap in the lending and borrowing interest rates. For example, during the five-year period 1996 to 2000, the weighted-average rates of return on advances and deposits of commercial banks are 14.6% and 6.4% respectively to yield an average mark-up of 8.2 percentage points.

The so-called golden 'hand-shake' scheme to lure the employees to voluntary

[39] The banking sector in Pakistan was primarily in private domain and remained quite efficient till the early 1970s when all the private banks were nationalized as a part of nationalization drive, that also included nationalization of insurance

retirement has worked well in the State Bank of Pakistan, but the scope of its expansion to nationalized commercial banks is constrained by poor financial position of the public sector. The alternative to privatization, that is to improve efficiency by restructuring, is unlikely to produce any relief. Privatization of banks is essential not only to improve efficiency in the banking sector itself but also to minimize the scope of financial mismanagement and misappropriation. Unfortunately like the other public sector departments, the Privatization Commission has performed poorly in working out a viable privatization strategy, though in the recent years its task has been made difficult by continuing financial, economic and political crisis that have erupted almost regularly in Pakistan.

Another aspect of the financial reforms that is still in the process is the move towards a free foreign exchange market. Following the de-linking of Pakistani rupee from the US dollar in 1982, the role of foreign currency, especially the US dollar, in capital transactions increased gradually. Government later (in 1990) allowed Pakistani citizens to hold foreign currency accounts in commercial banks. This scheme gained instant popularity because the rate of interest adjusted for depreciation of rupee was attractive, no Zakat or any other form of tax was deducted, and above all the scheme gave blanket amnesty to illegally assets. Foreign currency deposits in financial institutions sharply increased from about US$ 1 billion in 1990-91 to about US$ 15 billion in 1997-98 when the foreign currency deposits were frozen. Although no estimates are available, there is a general belief, as far as evidenced by newspaper reports that a hefty amount of foreign currency is also kept in bank lockers and homes.

Although the SBP used foreign currency deposits to ease the balance of payments

---

companies, many large scale private firms in the manufacturing sector and educational institutions.

pressure on Pakistan, but this advantage was illusionary. Liberalization in foreign exchange market led to 'dollarization' of the economy. Black market activity flourished as money laundering became much easy. The SBP lost potential foreign exchange receipts because exporters and recipients of remittances preferred to keep their assets in foreign currency for the sake of greater return. The foreign exchange liberalization also made transfer of assets abroad much easy. The estimates of foreign currency held abroad by Pakistanis residents, as reported in various newspaper reports, range from US$ 30 billion to US$ 100 billion.

With an almost free foreign exchange market, the current financial crisis has led to depreciation of Pakistani rupee to the tune that defies the purchasing power parity (PPP) proposition by a great margin. This is evident from 10.9% annual average increase in exchange rate compared to 7.3% inflation rate during the past five years. This amounts to 5.3% average annual increase in real exchange rate.

The above factors should not all be taken as adverse trend. One can rather argue that Pakistan had to move towards market based exchange rate regime sooner or later, and has almost completed the adjustment process towards equilibrium. The reform process has to be continued to reap its long-term benefits.

Debt Management Initiatives

Since the emergence of debt crisis in the early 1990s various initiatives have been taken to formulate debt management and reduction strategy. However, except for the recent attempt by Debt Reduction and Management Committee (Government of Pakistan 2001), the outcomes of the task forces have been disappointing. For example the famous National Debt Retirement Program launched in February 1997 could not produce any worthwhile

impact, though it resulted in an additional US $142.6 million domestic debt in the form of US dollar bonds.

The present military regime constituted a Debt Reduction and Management Committee headed by Parvez Hasan, a former Chief Economist at the World Bank, in January 2000. The committee was assigned the task of assessing the current debt situation, reviewing existing framework of debt contracting and management, suggesting medium and long-term goals and strategies and specifying institutional reforms for debt management.

The committee produced its report in March 2001 (Government of Pakistan 2001), which brought into focus major weaknesses in debt management and measurement practices and proposed some reforms in the system. The report recommends a number of qualitative and quantitative measures in order to achieve the above objectives. The solution strategy emphasizes on the following intermediate objectives.

a) Improvement in saving rate in the public sector
b) Improvement in total factor productivity in the public sector with improved efficiency, better governance and downsizing
c) Improvement in productivity in the private sector, especially agriculture, manufacturing, and information technology
d) Improvement in the growth rate of real GDP
e) Privatisation of public assets and public services in education and health and downsizing
f) Confidence building and promotion of economic stability
g) Medium term debt rescheduling in order to avoid immediate risk of debt default

h) Monitoring of debt situation and implementation of debt reduction strategy

The report also recognized that debt problem cannot be studied in isolation from major components of the overall macroeconomic picture and emphasized internal consistency, coherence and sustainability of the policy framework. By-and-large most of the components of solution strategy make good economic sense, though it is not clear from the report as to how the debt problem is integrated with other parts of economic picture in quantitative terms and incorporated in the policy framework.

In response to the committee's recommendations, the government agreed to set up a Debt Policy Coordinating Office in the Ministry of Finance to coordinate debt management issues across debt management agencies and to offer economic and financial advice.[40] Although there were initial indications that some of the measures proposed in the report would be implemented, the proposal was later put in a cold storage due to inter-departmental tussles.

Conclusion:

Debt management in Pakistan is part and parcel of the larger problem of governance inefficiency. It was hoped that the present government would change the trend, but as usual the old patterns of governance are reemerging. Institutional building is still a far cry. Governance inefficiency is addressed by creating duplicate institutions, while the existing institutions are let rotting. Decision-making still rests on personal intelligence rather than institutions based objective analysis. Highly paid part-time consultants with little threat of accountability are in the forefront of the decision making process, while the prime institutions are confined to file work. It appears that the lessons are still not learnt as far as general management in the public sector is concerned.

Within the context of debt management, Pakistan is under severe pressure to show progress, and successive governments have shown desperation for an early solution. The success of current initiative to address Pakistan's debt problem hangs on the ability of debt managers to acquire management autonomy and separation from the bureaucratic mindset prevalent in government departments. A number of earlier initiatives on debt management and other issues have failed after much publicized determination to break the ice. It is quite common that commissions, committees, task forces, etc. set up toaddress a certain problem end up being part of the old system and even part of the problem itself, thereby inflicting unwarranted financial and management burden to the government. Weak background analysis, lack of political will, moral corruption and bureaucratic inertia are the most common hurdles.

Lessons can be learnt from the improved outlook at the SBP that owes much to three indigenous factors besides ADB technical support. These are: induction of suitably qualified persons at the top level; appointments on merit from top to bottom at attractive (but not lucrative) salaries; and the ability of the SBP to maintain its autonomy. But the most important factor that separates the SBP from other government institutions is the well-planned reform agenda implemented with patience and determination, which was not disturbed by the change of governor. There is no good substitute for a laid-down reform process that is allowed to take its natural course, but followed with determination. Quick-fix remedies are often deceptive because inefficiency in government departments is deep rooted.

The question of governance inefficiency is too well known and documented even in the reports of the government task forces, but the vested interests are always there to

---

[40] This information is based on a handout issued by the Ministry of Finance on March 14, 2001.

disrupt implementation of the otherwise worthy proposals. The greatest fear that has been raised in the report of the Debt Reduction and Management Committee (Government of Pakistan 2001) is that its findings will never reach the implementation stage, and there are strong signs to confirm the fear. It is also worth noting that the donor agencies have time and again praised the policy framework of various governments, while the major source of disagreement has been on the implementation side. The point that is being missed is that slippage in targets occurs not as much due to shirking on the part of governments as due to institutional weaknesses.

There is urgent need to relieve the government from such economic activities where there is no strong case of market failure. The financial (especially the banking), manufacturing, energy and services sectors need to be privatized on urgent basis. Privatization is required not as much to use privatization proceeds for debt retirement as to improve economic efficiency and thereby to curtail the need for further borrowing. The debt problem needs to be linked to the question of sustainability rather than size. In other words the focus needs to be placed on debt management rather than just the debt retirement.

The question of governance and institutional building needs to be brought under direct focus as intermediate targets with the ultimate aim to achieve the prescribed economic goals. Since the debt problem is closely linked to institutional weaknesses and inefficiency in the public sector, the most effective way the donor agencies can help Pakistan is to make further loan agreements conditional upon financial reforms and institutional building. In other words the focus of conditionalities needs to be shifted drastically from quantitative targets in terms of tax collection and expenditure cuts to

qualitative targets, such as privatization, financial reforms, institutional building and eradication of corruption. Pakistan's past experience provides ample proof that unless these problems are attended seriously, Pakistan will not come out of the debt crisis.

Chapter 6

ECONOMIC MODEL OF DEBT RETIREMENT

6.1: INTRODUCTION

We extend Harrod-Domar growth model to allow the role of foreign economic assistance in the process of economic growth. We introduce a terminal time in the model as a policy decision in order to analyze the trade-off between various objectives of development planning such as the trade-off between the desire to become independent of foreign borrowing and to achieve a high growth rate of GDP. Only after an assessment of these trade-offs, it can be decided to undertake the task and policies consistent with the overall development objectives.

Presumably, the independence from foreign borrowing does not mean that the country will be free from all kinds of foreign liabilities such as foreign private investment, funds for amortization and interest payments on foreign loans. All that is meant by this independence from borrowing is that after some specific time there should be no increase in foreign liability and the country should be free from the need of further inflow of foreign funds. By that time domestic resources should exceed the investment required to ensure output growth equivalent at least to the service payments due from all forms of foreign capital which flew into the country in the past.

To begin with, we discuss some general issues relevant to the question of independence from foreign borrowing and some quantitative assessment of its implications. The analysis is then extended to consider the implications of foreign borrowing on the debt-service obligations, which is amortization and interest payments on foreign loans.

6.2: THE SIMPLE MODEL WITH NO SERVICE PAYMENT

At any point of time, the total amount of resources available to a country which it can consume and set aside for (gross) investment or use for exports is equal to the country's gross national product plus its imports. It follows from national income identity that at any time the difference between a country's gross investment and gross domestic savings is necessarily equal to the difference between its imports and exports. Therefore a country can invest more than it can save, and thus achieve a growth rate higher than that determined by its domestic savings rate, if it can import more than its exports by the same amount. This will naturally depend upon how it finances the import surplus. Whether the country relies on private net capital inflow or borrows publicly from abroad, a net inflow of foreign capital remains the only offsetting item in the balance of payments to finance the deficits. Thus, the role of foreign capital in a growing economy is quite obvious. A given amount of net foreign capital inflow can finance an equal amount of import-surplus of the capital receiving country and also allow its investment to exceed its domestic saving by the same amount, that is:

$$I_t - S_t = M_t - X_t = F_t \qquad (6.1)$$

Where I_t ,S_t ,M_t,,X_t and F_t denote gross investment, gross domestic savings, imports, exports and net inflow of foreign capital, respectively. If gross incremental capital-output ratio is denoted by k, and growth rate of GDP by g, then:

$$I_t = kgY_t \qquad (6.2)$$

Where Y_t is GNP at time t. The rate of savings is expected to rise over time. Let s_0 be the average rate of savings at the initial period, that is period zero, and s_m the incremental

savings rate between period zero and t. We assume that the saving function is of the following form.

$$S_t = s_0 Y_0 + s_m (Y_t - Y_0) = (s_0 - s_m) Y_0 + s_m Y_t \qquad (6.3)$$

Substituting from (6.2) and (6.3), we can write (6.1) as follows:

$$kgY_t - \left[(s_0 - s_m) Y_0 + s_m Y_t\right] = F_t \qquad (6.4)$$

$$g = \frac{1}{k}\left[(s_0 - s_m)\frac{Y_0}{Y_t} + s_m + \frac{F_t}{Y_t}\right] \qquad (6.5)$$

Equation (6.5) gives us a unique relationship between the growth rate of GDP, g, and the net inflow of foreign capital as a proportion to GDP i.e F_t/Y_t. Given the incremental capital-output ratio, marginal rate of savings, average savings rate at the initial period and the initial and the current level of GDP; we can obtain either the net inflow of foreign capital required by a target rate of growth, or the rate of growth that can be achieved with a given inflow of foreign capital. Since $\partial g/\partial F > 0$, a larger inflow of foreign capital can achieve a higher rate of GDP growth, keeping all other factors constant.

The above formulation can also be used to measure the capacity of the country to absorb foreign aid. The proposition on which the above argument i.e. the rate of growth can be raised by increasing the rate of investment financed by foreign aid is based, implicitly assumes that capital, not labour, is the main bottleneck for raising the rate of

growth.[41] This way of looking at the relationship between foreign capital and the rate of growth of GDP implies that every year the import–surplus somehow gets adjusted to the net inflow of foreign funds. Total imports adjust automatically to the two exogenous variables i.e. X_t and F_t and the growth rate entirely depends on how far F_t can eliminate the bottleneck of the low rate of domestic savings. But imports may not be so freely adjustable in an underdeveloped country and thus a more comprehensive model will inevitably contain additional constraints. For that purpose, we assume that there is a rigid relationship between the level of imports required and the level of GDP. The assumption that there is a minimum import requirement corresponding to a level of GDP can be interpreted in two ways:

First, the import requirement is in fixed proportions to consumption, gross investment and exports, which, as a first approximation may be regarded as the same. Such an assumption may be questionable for an underdeveloped economy like Pakistan at an early stage of development where imports to consumption ratio may be much higher due to the imports of some basic necessities for supporting its subsistence level of consumption. The case may be similar with exports if they are not completely given exogenously. But even if there exist consumption and export basket with negligible minimum import requirements, it is quite possible that gross investment required for maintaining that level of consumption and exports over time may need some minimum

[41] In case of an underdeveloped economy like Pakistan, this assumption may be quite unrealistic. Even if there is an unlimited supply of capital and labor, the rate of growth may have an upper bound determined by the supply of complementary factors like skilled labor, managers, entrepreneurs, etc. In that case there is an optimum rate of receipt of foreign capital which is equal to the excess of rate of investment, required to realize the maximum possible growth rate determined by the other non-capital factors, over the rate of savings. This excess requirement basically will determine the absorptive capacity for foreign aid. A large inflow of foreign aid beyond the absorptive capacity of a country will fail to raise the rate of growth (Harrod, 1963).

level of imports. The minimum level of imports is required simply because certain right types of equipment, machinery, etc. are not domestically produced.

In the case where only a given amount of foreign capital is available to finance the gap between savings and investment, the foreign capital may not achieve the target of growth rate of GDP as determined by the capital output ratio. This is because imports may increase due to increase in income and this increase in imports may exceed the exports by more than the given inflow of foreign capital.

In either case, the condition for a given amount of foreign capital inflow to achieve a rate of GDP growth determined by the amount of savings- investments gap it can finance, is that $M \leq X+F$, with M accounting for the minimum level of imports. If this condition is not fulfilled, there will be two operative constraints on the growth level of GDP, namely the resource constraint $I-s \leq F$ and the balance of payment constraint $M-X \leq F$. The solution of the system will depend upon which of the two constraints is more restrictive, i.e. whichever gives the lower solution.[42]

It is also adopted that this upper bound on GDP growth rate, determined by the import constraint becomes less and less restrictive with time as rising GDP is likely to be accompanied by increasing availability of domestically produced capital goods. Thus, in the long run the saving-investment gap that will determine the effect of foreign capital on the growth rate of GDP, although in the early phase of development the import constraint may be more important.

---

[42] Chenery and Bruno (1962) introduced a variant of the first kind of import restriction mentioned above and estimated import requirements from the solution of an input-output model under some strict assumptions. They observed that the import bottleneck at lower levels of GNP is more restrictive than the savings bottleneck.

The following analysis is mainly focused on the foreign aid inflows filling the saving-investment gap. Although, this renders the analysis partial in nature, but it may be still worth while mainly for two reasons:

(a) Even if there were no import constraints, the effect of foreign capital on growth rate will depend on how far it overcomes the savings constraint; and

(b) It may be maintained that in the long run it is the saving constraint that is more restrictive than the imports constraints.

Given the structure of our model it is possible to calculate the number of years after which a country will generate enough domestic savings to finance the investments required to attain a given GDP growth rate without depending on foreign borrowing. This is derived from equation (6.4) reproduced as follows:

$$(kg - s_m)Y_t + (s_m - s_0)Y_0 = F_t \qquad (6.6)$$

In the nth year when $F_n = 0$, the equation (6.6) may be rewritten as:

Setting $F_n = 0$ in the terminal period and re-arranging (6.6), we obtain:

$$Y_n = \left[\frac{(s_m - s_0)}{(s_m - kg)}\right] Y_0 \qquad (6.7)$$

Since $Y_n = Y_0 (1+g)^n$, we can further write this equation as:

$$(1+g)^n = \left[\frac{s_m - s_0}{s_m - kg}\right] \qquad (6.8)$$

Equation (6.8) permits the determination of period (n) to get independence from foreign borrowing with a given target growth rate of GDP.[43]

It is obvious that the essential condition for a country to become independent from foreign capital at a future date is that $\lfloor s_m > k.g \rfloor$, that is, the marginal rate of savings should exceed the required rate of investment. Further, the value of (n) will be smaller, i.e. the year of self-sufficiency will be closer, the larger the difference between the marginal rate of savings and the required investment and the higher the value of the initial rate of saving (s_0).

Assuming that $g > 0$ and $s_m > s_0$, it must be emphasized that Equations (6.4), (6.5) and (6.8) refer all to the case of foreign capital inflow taking place purely in the form of interest free borrowings. No interest payment obligation is attached to them, and after the nth year, that is, when the year of independence from foreign capital is reached, the country's domestic savings will exceed its required investment rate. In that case, if the same rate of growth is maintained, the country will have to export capital abroad. Otherwise the country's rate of growth will have to increase every year so that the rate of investment required to achieve higher rate of growth is equal to the increasing domestic savings. The model then will look like a simple Harrod-Domar system.

---

[43] This assumption will be relaxed in Section 6.3. From Equation (6.7) we can also calculate the number (n) of years needed for minimum-import requirements to be fully financed by the country's exports. Then
$M_n = X_n$ *og* m_n *k. g.* $Y_n = Xn$
Assuming a constant rate of growth over time in GDP and exports, we get
m k. g. $Y(1+g) = X(1+e)$
$(1+g)^n / (1+e)^n = [1/m_n\ k.g]\ X_0 / Y_0$;
from which the value of n can be obtained. This n need not be equal to the n obtained from equation (6.8).

$$I_t = S_t \tag{6.9}$$

Substituting for the saving and investment function from (6.1) and (6.2) and re-arranging, we obtain:

$$g = \left(\frac{1}{k}\right)s_m - \left(\frac{1}{k}\right)(s_m - s_0)\frac{Y_0}{Y_t} \tag{6.10}$$

As time passes, this increasing rate of growth will approach $\left[s_m / k\right]$ as the expression $\left(\frac{1}{k}\right)(s_m - s_0)\frac{Y_0}{Y_t}$ will approach towards zero over time.

To illustrate how this method can be applied in practice, we assume that if country needs to get independence at some specific time in future, say after 15 years between 2000-1 and 2014-15, i.e. no foreign aid will be required by 2014-15.[44] Here we concentrate only on savings-investment gap, assuming implicitly that imports, exports and other relevant variables get somehow correctly balanced.[45] Thus, if savings-investment gap in Pakistan is eliminated by the year 2014-15, then it is possible that Pakistan may, though not necessarily, will become independent of foreign aid by that time. The other assumption of this exercise is that the savings-investment gap is covered by foreign assistance coming in the form of grants only with no repayment obligations. This is obviously unrealistic, but it is justified because this gives the minimum that will be required for attaining independence from foreign capital in fifteen years.

---

[44] This exercise is performed only for the sake of illustration. We merely try to find out what are the consistent values of different magnitudes if this claim is borne out in practice.

[45] In the following analysis, we incorporate other gaps as well.

The following Table 6.1 gives on assuming GDP growth of around 7 percent per annum, the consistent values of gross marginal capital-output ratio and the marginal rate of savings, which will enable the country to become self-supporting after fifteen year (n= year of independence from foreign aid=15).[46]

TABLE 6.1

Different Values of Marginal Rate of Savings and Marginal Capital-Output Ratios to get independence in 15 years with given g= 7 % and average saving rate =10%.

K	S
2.5	21.5%
3.0	27.5%
3.5	32.4%
4.0	37.9%

To get independence from foreign aid in 15 years, table 6.1 gives different values of the marginal rate of savings and marginal capital-output ratios, if the expected 7 percent rate of GDP growth and average saving rate of 10 % is taken as the target growth rate. This table shows that for the country to become independent by 2015 from foreign aid, even when it is in the form of grants, and to achieve the rate of growth of about 7 percent would require as low a marginal capital output ratio as 2.5 and an incremental savings rate of about 22 percent.

---

[46] Using formula $[1+g]^n = (s_{t-1} - s_{t-1}) / s_{t-1} - k.g$
which can be written as $s = [k.g (1+g)^n - s_{t-1}] /[1+g]^n - 1$
we can calculate marginal rate of savings for different growth rates and different capital-output ratios given average savings rate and number of years to get independence from foreign aid. Similarly we can calculate the required capital-output ratios for given marginal, average savings rate and GDP growth rate. This analysis is more valid if we incorporate the amortization period and debt-service obligations in our analysis. We complete this analysis in the following text where we incorporate amortization and debt-service obligations.

All this seems to be too ambitious, as the available empirical evidence would suggest that a marginal capital output ratio of 2.5 is too low or a marginal rate of savings of 22 percent is too high. In general, the figures of the table 6.1 indicate the amount of effort in terms of raising the rate of savings or of productivity of investment involved in any attempt to achieve independence from foreign aid at an early date.

We can make use of Equation (6.9) and find the year of independence from foreign interest free loans taking into account different values of GDP growth rates and marginal saving rate. This sensitivity analysis is extended to incorporate different values of capital output ratio as well. The results of our exercise are presented in Tables 6.2, 6.3 and 6.4.

The results show that the number of years required to achieve such independence with a stipulated rate of growth is highly sensitive to variation in marginal capital-output ratio and marginal rate of savings. The analysis shows that the reduction in the years of dependence is more responsive to a decrease in k than to an increase in the value of s, i.e. the system is more sensitive to variation in incremental capita-output ratio (k) than in incremental saving rate(s). If k rises by 20 percent from 2.5 to 3.0, the value of s must rise by more than 25 percent i.e. from 21.5 percent to 27 percent to achieve independence in the given fifteen years. Table 6.2 and table 6.3 show the results obtained by using different values of capital-output ratio, marginal saving rates, GDP growth rate. In table 6.2, we take average saving rate of 12 percent reflecting the rate consistently prevailing in Pakistan's economy. However, in table 6.3, we use average saving rate at 10 percent in order to find the variation in the period to get independence from foreign borrowing when average saving rate is low.

Table 6.2

Different Values of the Year of Independence from Foreign Borrowing for Different Values of GDP Growth Rate and Marginal Rate of Savings (given k=2.5,3 & 3.5 and average saving rate=12%)

g / s	K=2.5			K=3			K=3.5		
	0.04	0.05	0.06	0.04	0.05	0.06	0.04	0.05	0.06
0.15	13.02	3.73					28.01		
0.16	10.33	2.73	23.79		28.41		17.67		
0.17	8.57	2.15	15.72		18.78		13.02		
0.18	7.33	1.78	11.89		14.20		10.33	50.93	
0.19	6.40	1.51	9.60		11.46	33.39	8.57	31.57	
0.20	5.68	1.32	8.06		9.63	23.79	7.33	23.83	

Note: Blank cells in the table show that the necessary condition $\lfloor s_m > k.g \rfloor$ to get independence from foreign borrowings is not fulfilled.

Table 6.3

Different Values of the Year of Independence from Foreign Borrowing for Different Values of GDP Growth Rate and Marginal Rate of Savings (given k=2.5,3 & 3.5 and average saving rate=10%)

g / s	K=2.5			K=3			K=3.5		
	0.04	0.05	0.06	0.04	0.05	0.06	0.04	0.05	0.06
0.15		14.20		13.02			41.03		
0.16		11.04	30.74	10.33	36.72		28.01		
0.17		9.05	21.49	8.57	25.67		21.60		
0.18		7.67	16.83	7.33	20.10		17.67	56.82	
0.19		6.66	13.91	6.40	16.62	37.70	14.98	36.72	
0.20		5.89	11.89	5.68	14.20	27.62	13.02	28.41	

Note: Blank cells in the table show that the necessary condition $\lfloor s_m > k.g \rfloor$ to get independence from foreign borrowings is not fulfilled.

The results show relative sensitivity of the system to variations in the marginal capital output ratio and marginal savings rate once we assume a given level of GDP growth rate and initial level of domestic saving rate. This is of some interest in relation to the question: how much additional effort is required in the form of raising the marginal rate of savings if the marginal capital- output ratio turns out to be higher than expected so that the target year of independence is actually realized.[47] On the basis of our results in table 6.2 and table 6.3, we can say if the number of years to reach independence from foreign capital (without interest payment) is a given objective, and if the marginal capital-output ratio exceeds the projected value by x percent, then the marginal rate of savings must be raised over its projected value by more than *x* percent so that the given objective is possible to realize.

We can prove this claim mathematically as:

Considering Equation (6.8):

$(1+g)^n = \left[\frac{s_m - s_0}{s_m - kg}\right]$, We can further re-write as:

$$n = \frac{1}{c}\left[\ln\left(s_m - s_0\right) - \ln\left(s_m - k.g\right)\right] \qquad (6.11)$$

where, c = log (1+g), a constant for a given rate of growth g. Since s_m, k, and s_0 are mutually independent, taking partial derivatives with respect to s_m , we write

[47] Marginal capital-output ratio is a technological variable which is responsive to policy variations.

$$\frac{\partial n}{\partial s_m} = \frac{1}{c}\left[\left\{\frac{1}{s_m - s_0}\right\} - \left\{\frac{1}{s_m - k.g}\right\}\right] = -\frac{1}{c}\left[\frac{k.g - s_0}{(s_m - s_0)(s_0 - k.g)}\right] \qquad (6.12)$$

Since $s_m > k\ g > s_0$, by assumption, this shows that a rise in s_m will reduce (n), the numbers of years taken to reach independence.

Similarly, $$\frac{\partial n}{\partial k} = \frac{1}{c}\left[\frac{g}{s_m - k.g}\right] \qquad (6.13)$$

which shows that a rise in k will raise n again assuming that $(s_m > k\ g > s_0)$.

In order that the effect of a rise in k is compensated by a rise in s_m or n, we get

$$\left(\frac{\partial n}{\partial s_m}\right) ds_m + \left(\frac{\partial n}{\partial k}\right) dk = 0 \qquad (6.14)$$

substituting (6.12) and (6.13) into (6.14), we obtain:

$$\frac{1}{c}\left[\frac{(k.g - s_0)}{(s_m - s_0)(s_m - k.g)}\right] ds_m = \frac{1}{c}\left[\frac{g}{s_m - k.g}\right] dk$$

$$\left[\frac{ds_m}{\frac{s_m}{dk}_k}\right] = \left[\frac{g(s_m - s_0')}{k.g - s_0'}\right]\frac{k}{s_m} > 1 \text{ since } s_m > kg > s_0$$

This proves the proposition that any increase in k will have to be compensated by a proportionally larger increase in s_m, so that the target of the year of independence is realized.

6.3: THE MODEL WITH INTEREST PAYMENT

Until now, in our analysis, no reference has been made to the problem of interest payment on borrowing. Unless foreign borrowing flows purely in the form of interest free loans, funds will have to be spared every year for interest payments in addition to and amortization payments. So there will be an annual drain equal to the payment of interest and amortization abroad from the receiving country's domestic savings as well as from its foreign exchange earnings. This drain in foreign exchange and domestic savings, which any foreign capital inflow other than grants necessarily entails, has to be explicitly taken into account in the equation of foreign aid requirements. The exact time profile of such re-payments depends upon the arrangements for amortization and interest payments for different kinds of loans. If both interest and amortization are charged on the net debt outstanding then loans are not completely liquidated but the unliquidated balance of each loan becomes smaller and smaller every year. Alternatively interest may be charged on the net debt outstanding, while the yearly amortization is fixed in equal installments of the original value of each loan. Yet another possibility is to fix equal installment method whereby amortization and interest on each loan are paid off in a series of equal installments.

There may be several other ways of charging interest and amortization on different kinds of loans subject to different methods of charging interest and amortization rates in any particular year. Quite often, some kind of grace period is attached to official loans so that the payments of interest and/or amortization do not start till some years after the loans are granted.

We further assume that all foreign loans are given for a period of T years and the rate of interest "r" overtime is same for all loans. However, the estimation of foreign capital requirements in this case is quite complicated. We consider explicitly the fact that after every *(T+j)* year, the *jth* year's foreign loan is completely liquidated and no more repayment obligation is involved for it.

In the light of foreign debt servicing requirements, the relationship between investment-saving gap and the inflow of foreign borrowing as given by equation (6.1) need to be generalized. Denoting the stock of foreign debt at the end of period t by D_t and the rate of interest on foreign debt by r_t, the time path of net foreign borrowing can be written as follows.

$$F_t = r_t D_{t-1} + (I_t - S_t) \tag{6.15}$$

In order to obtain a parameterized solution for net foreign borrowing, we assume that the stock of debt in the initial period (period 0) is zero, the rate of interest is constant and the investment and saving functions are given by equations (6.2) and (6.3) respectively. Under these assumptions equation (6.15) can be solved for the equilibrium value of the net foreign borrowing. It is shown in Appendix 6.1 that such a solution is given by:

For $r \neq g$

$$F_t = (kg - s_m)(1+g)Y_0 \frac{r(1+r)^{t-1} - g(1+g)^{t-1}}{r-g} + (s_m - s_0)Y_0(1+r)^{t-1} \tag{6.16}$$

For $r = g$

$$F_t = \left(kg - s_m\right)Y_0(1+gt)(1+g)^{t-1} + \left(s_m - s_0\right)Y_0(1+g)^{t-1} \tag{6.17}$$

The above equations can be used to calculate the number of years that are required to achieve independence from foreign borrowing. Let the year when foreign borrowing becomes zero be denoted by n. Then considering first the more general case of $r \neq g$, that is equation (6.16), the condition that $F_n = 0$ can be solved as follows.

$$\left(s_m - s_0\right)(1+r)^{n-1} = \left(s_m - kg\right)(1+g)\frac{r(1+r)^{n-1} - g(1+g)^{n-1}}{r-g} \tag{6.18}$$

This equation can be rearranged to solve for n as follows.

$$\left[\frac{s_m - s_0}{1+g} - r\frac{s_m - kg}{r-g}\right](1+r)^{n-1} = -g\frac{s_m - kg}{r-g}(1+g)^{n-1} \tag{6.19}$$

Or

$$\left(\frac{1+r}{1+g}\right)^{n-1} = \frac{g\dfrac{s_m - kg}{r-g}}{r\dfrac{s_m - kg}{r-g} - \dfrac{s_m - s_0}{1+g}} \tag{6.20}$$

Taking natural logs on both sides and solving for n yields:

$$(n-1)\log\left(\frac{1+r}{1+g}\right) = \log\left(\frac{g\dfrac{s_m - kg}{r-g}}{r\dfrac{s_m - kg}{r-g} - \dfrac{s_m - s_0}{1+g}}\right) \tag{6.21}$$

$$n-1=\frac{\log\left(\dfrac{g\dfrac{s_m-kg}{r-g}}{r\dfrac{s_m-kg}{r-g}-\dfrac{s_m-s_0}{1+g}}\right)}{\log\left(\dfrac{1+r}{1+g}\right)} \tag{6.22}$$

The above equation solves the number of years by which foreign borrowing becomes zero, in terms of all the other parameters of the system. In order to determine whether such a condition will exist in a particular situation, we consider the three possibilities: r > g, r < g and r = g one by one.

Case A: r > g

When r > g, we shall have $\log\left(\dfrac{1+r}{1+g}\right)>0$. Therefore for a meaningful solution for n (that is n > 1), the numerator in equation (6.22) must also be positive and hence we must have

$$\begin{aligned} &g\frac{s_m-kg}{r-g}>r\frac{s_m-kg}{r-g}-\frac{s_m-s_0}{1+g}>0\Rightarrow g\frac{1+g}{r-g}>r\frac{1+g}{r-g}-\frac{s_m-s_0}{s_m-kg}>0 \\ &\Rightarrow g\frac{1+g}{r-g}-r\frac{1+g}{r-g}>-\frac{s_m-s_0}{s_m-kg}>-r\frac{1+g}{r-g}\Rightarrow 1+g<\frac{s_m-s_0}{s_m-kg}<r\frac{r(1+g)}{r-g} \end{aligned} \tag{6.23}$$

Or

$$\begin{aligned} &g\frac{s_m-kg}{r-g}<r\frac{s_m-kg}{r-g}-\frac{s_m-s_0}{1+g}<0\Rightarrow g\frac{1+g}{r-g}>r\frac{1+g}{r-g}-\frac{s_m-s_0}{s_m-kg}>0 \\ &\Rightarrow g\frac{1+g}{r-g}-r\frac{1+g}{r-g}>-\frac{s_m-s_0}{s_m-kg}>-r\frac{1+g}{r-g}\Rightarrow 1+g<\frac{s_m-s_0}{s_m-kg}<r\frac{1+g}{r-g} \end{aligned} \tag{6.24}$$

Thus it follows that with r > g, a country can attain independence from foreign borrowing (its borrowing becomes zero) in a finite time period if:

$$\frac{r(1+g)}{r-g} > \frac{s_m - s_0}{s_m - kg} > 1+g \tag{6.25}$$

Case B: r < g

With r < g we have $\log\left(\frac{1+r}{1+g}\right) < 0$. Therefore for n > 1, the numerator in equation (6.22) must be negative and hence we must have

$$\begin{aligned} & r\frac{s_m - kg}{r-g} - \frac{s_m - s_0}{1+g} > g\frac{s_m - kg}{r-g} > 0 \Rightarrow r\frac{1+g}{r-g} - \frac{s_m - s_0}{s_m - kg} > g\frac{1+g}{r-g} > 0 \\ & \Rightarrow -\frac{s_m - s_0}{s_m - kg} > g\frac{1+g}{r-g} - r\frac{1+g}{r-g} > -r\frac{1+g}{r-g} \Rightarrow \frac{s_m - s_0}{s_m - kg} < 1+g < r\frac{1+g}{r-g} \end{aligned} \tag{6.26}$$

Or

$$\begin{aligned} & r\frac{s_m - kg}{r-g} - \frac{s_m - s_0}{1+g} < g\frac{s_m - kg}{r-g} < 0 \Rightarrow r\frac{1+g}{r-g} - \frac{s_m - s_0}{s_m - kg} > g\frac{1+g}{r-g} > 0 \\ & \Rightarrow -\frac{s_m - s_0}{s_m - kg} > g\frac{1+g}{r-g} - r\frac{1+g}{r-g} > -r\frac{1+g}{r-g} \Rightarrow \frac{s_m - s_0}{s_m - kg} < 1+g < r\frac{1+g}{r-g} \end{aligned} \tag{6.27}$$

It follows that with r < g, a country can attain independence from foreign borrowing in a finite time period if:

$$\frac{s_m - s_0}{s_m - kg} < 1 + g < r\frac{1+g}{r-g} \tag{6.28}$$

Case C: r = g

In the borderline case r = g the solution (6.18) is operative and the condition that $F_n = 0$ can be solved as follows.

$$\left(kg - s_m\right)Y_0(1+g\,n)(1+r)^{n-1} = -\left(s_m - s_0\right)Y_0(1+g)^{n-1} \tag{6.29}$$

Further simplifying and rearranging, we end up with the condition:

$$\frac{s_m - s_0}{s_m - kg} = 1 + g\,n > 1 + g \tag{6.30}$$

To illustrate the effects of introducing repayment obligations into our model, we calculate the years of independence (repayment period of foreign loans) with different stipulated rates of growth and uniform rates of service payments on the assumption of no outstanding debt at the initial period and the values of the marginal rate of savings equal to 15 percent, the initial average savings rate equal to 10 percent, and the marginal capital-output ratio equal to 3.5 and 3. Using equation (6.15) and (6.22), the year of independence when Fn=0 can be calculated.

The Table 6.4 shows that the number of years to get independence from foreign aid increases as growth rate and service payment rate increases. For example with low

growth rate of 3 percent and service payment of just 3 percent, the year to get independence is almost 14 months. However higher growth rate of around 6 percent and service payment of 6 percent require almost 10 years to get independence from foreign aid.

Table 6.4

Different Values of Repayment Time of External Debt for Different Values of "r" and "g" (given capital-output ratio= 3.5; marginal saving rate = 15 % and average saving rate=10%)

a↓ g→	0.03	0.04	0.05
0.03	1.2	5.4	4.2
0.04	1.5	6.4	6.5
0.05	2.1	7.7	9.6
0.06	2.6	9.0	10.4

These results testify our previous analysis of debt payment capacity that if we need to pay an interest rate of higher than critical interest rate then the debt is not sustainable. Table 6.5 is an extension of the previous table 6.4 with the change in capital output ratio from 3.5 to 3.

Table 6.5

Different Values of Repayment Time of External Debt for Different Values of "r" and "g" (given capital-output ratio= 3; marginal saving rate = 15 % and average saving rate=10%)

r↓ g→	0.03	0.04	0.05
0.03	1.8	6.4	9.0
0.04	2.3	7.2	9.5
0.05	3.2	8.4	10.0
0.06	3.8	9.1	10.5

The results in Table 6.5 and table 6.6 show that with lower capital-output ratio, the number of years to get independence increases and capital-output ratio is an important determinant of getting independence from foreign aid. With high growth rate and high service payment, the number of years to get independence from foreign aid increases given capital-output ratio, marginal and average saving rate for different values of GDP growth rate and service payment ratio. The Table 6.4 shows the relative sensitivity of the system to variations in the marginal capital output ratio.

The relative sensitivity of the system to variations in the ambitious growth rate with high service payment is also found using some higher growth targets with high service payments and results are shown in Table 6.6 below.

Table 6.6

Different Values of Repayment Time of External Debt for Different Values of "r" and "g" (given capital-output ratio= 3; marginal saving rate = 25 % and average saving rate=10%)

r↓ g→	0.05	0.06	0.07	0.08
0.03	9.0	15.4	24.2	47.5
0.04	9.5	16.4	26.5	54.2
0.05	10.0	17.7	29.6	64.0
0.06	10.5	19.0	33.4	77.2
0.07	11.0	20.8	39.3	105.2
0.08	11.6	23.3	48.1	175.0

Nevertheless this exercise clearly shows the implication of having some repayment obligations associated with foreign debt into the country. If there were no repayment obligations in the initial period, then the country with a marginal rate of savings equal to 25 percent, the initial average saving rate of 10 percent, and a marginal

capital output ratio of 3, would pay back all external debt outstanding after 8.3 years if the growth rate were 5 percent.

The existence of some outstanding debt in the beginning will only postpone further the year of independence from external debt. According to figures in table 6.3, when foreign loan required for service payment is 4 percent, it will take at least 9.5 or 16.4 years to pay back all debt if the target growth rate is 5 percent per year. If the target growth rate is 7 percent, it will take 27 years with the required rate of service payment of 4 percent, and 33.4 years with a required service rate of 6 percent. If the target income growth rate is 8 percent, it will take 54 years to pay back all loan with a required servicing rate of only 4 percent, and 105 years with a required rate of servicing of 7 percent. This means that when we require more loans for service payment and for increased growth rate, then the period to pay back loans also increases. The figures in table 6.5 and table 6.6 show that the system is highly sensitive to rate of GDP growth in relation to marginal rate of savings. As the rate of growth increases, the year of payment of foreign loans also increases. When "r" is taken as the rate of service payments on foreign loans, its low value indicates a prolonged period of amortization and low rate of interest.

In reality, foreign capital comes to developing countries in the form of grants, loans and direct investment. This study has provided some methods of calculating the year of independence from external debt under some projected or assumed values of some relevant parameters. We have explained how difficult it is to become independent of foreign capital, even under condition of requiring no fresh inflow of external loans.

APPENDIX VI

DERIVATION OF EQUATION (6.15)

The time path of net foreign borrowing is given by.

$$F_t = r_t D_{t-1} + (I_t - S_t) \qquad \text{(A6.1)}$$

In order to obtain a solution for F_t, we first need to trace the solution for the stock of foreign debt D_t. Since net foreign borrowing in period t is equal to the change in foreign debt in period t over period t-1, the time path of the stock of foreign debt can be expressed as a difference equation:

$$D_t = D_{t-1} + F_t \qquad \text{(A6.2)}$$

Substituting for F_t from equation (A6.1), we obtain:

$$D_t = (1 + r_t) D_{t-1} + (I_t - S_t) \qquad \text{(A6.3)}$$

Substituting backward, using the initial value $D_0 = 0$ and assuming that the rate of interest is constant, we obtain the following reduced form equation for the above difference equation.:

$$D_t = \sum_{j=0}^{t-1} (1+r)^j \left(I_{t-j} - S_{t-j} \right) \tag{A6.4}$$

Now using the investment and saving functions given by (6.2) and (6.3) the investment-saving gap in period t can be written as:

$$\begin{aligned} I_t - S_t &= kgY_t - \left[s_0 Y_0 + s_m \left(Y_t - Y_0 \right) \right] = \left(kg - s_m \right) Y_t + \left(s_m - s_0 \right) Y_0 \\ &= \left(kg - s_m \right) Y_0 (1+g)^t + \left(s_m - s_0 \right) Y_0 \end{aligned} \tag{A6.5}$$

Now substituting from (A6.5), the time path of foreign debt given by (A6.4) can be expressed as follows.

$$D_t = \left(kg - s_m \right) Y_0 (1+g)^t \sum_{j=0}^{t-1} \left(\frac{1+r}{1+g} \right)^j + \left(s_m - s_0 \right) Y_0 \sum_{j=0}^{t-1} (1+r)^j \tag{A6.6}$$

Using the solution for geometric series, we obtain:

$$\begin{aligned} D_t &= \left(kg - s_m \right) Y_0 (1+g) \frac{(1+r)^t - (1+g)^t}{r-g} + \left(s_m - s_0 \right) Y_0 \frac{(1+r)^t - 1}{r}, \quad r \neq g \\ &= \left(kg - s_m \right) Y_0 (1+g)^t t + \left(s_m - s_0 \right) Y_0 \frac{(1+g)^t - 1}{g}, \quad r = g \end{aligned} \tag{A6.7}$$

To obtain the solution for the net foreign borrowing, we substitute from (A6.5) and (A6.7) into (A6.1) to yield

$$F_t = r\left[\left(kg - s_m\right)Y_0(1+g)\frac{(1+r)^{t-1} - (1+g)^{t-1}}{r-g} + \left(s_m - s_0\right)Y_0\frac{(1+r)^{t-1}-1}{r}\right]$$
$$+\left(kg - s_m\right)Y_0(1+g)^t + \left(s_m - s_0\right)Y_0 \qquad r \neq g$$

(A6.8)

$$= r\left[\left(kg - s_m\right)Y_0(1+g)^{t-1}(t-1) + \left(s_m - s_0\right)Y_0\frac{(1+g)^{t-1}-1}{g}\right]$$
$$+\left(kg - s_m\right)Y_0(1+g)^t + \left(s_m - s_0\right)Y_0 \qquad r = g$$

Finally collecting common factors and further simplifying the expressions, we obtain the following solution for the net foreign borrowing.

$$F_t = \left(kg - s_m\right)(1+g)Y_0\frac{r(1+r)^{t-1} - g(1+g)^{t-1}}{r-g} + \left(s_m - s_0\right)Y_0(1+r)^{t-1}, \quad r \neq g$$

(A6.9)

$$= \left(kg - s_m\right)Y_0(1+gt)(1+g)^{t-1} + \left(s_m - s_0\right)Y_0(1+g)^{t-1} \qquad r = g$$

Chapter 7

CONCLUSION

It is now time to `take stock`- to look over the ground covered by this study, to highlight its basic findings, and to reflect on the implications of Pakistan's experience for foreign economic assistance in the years ahead.

Let it be underscored, at the outset, that here is a wide variety of topics to which the study has not given in-depth treatment. Merely to list some of them is to sense the breadth of this gap: technical and military assistance; foreign aid flows to Pakistan's agricultural sector; the differential impacts of foreign aid on saving, investment, real exchange rate and some other macro-economic variables; the social and political effects of foreign aid on Pakistan. Such topics involve issues that have a significant bearing on the country's past and future development. Indeed, it could reasonably be argued that problems of regional inequality and social injustice are at the heart of the matter as far as Pakistan is concerned.

But very complex questions arise as to the framework for examining foreign aid in relation to the whole spectrum of domestic forces underlying a recipient country's progress. Even if the framework were complete, it would still be necessary to ask whether this kind of analysis was manageable within the confines of a single study. And even then, one would have to be satisfied that the relevant empirical data were sufficiently available and reliable to make the full-blown analysis worthwhile. The central judgment made here is that serious conceptual and measurement difficulties militate against such global coverage. Yet, there is no escape from the fact that a large number of important foreign aid issues receive little and no attention in this study. In essence, these `empty

boxes' stand as a call for extensive continuing research on foreign assistance in Pakistan. They also impose an overriding sense of modesty about any conclusion drawn from the analysis made in this study.

7.1: A SUMMARY OF FINDINGS

In this study, we examined foreign aid and foreign debt in the economy of Pakistan. We defined foreign aid as any international transfer made on concessional terms (rather than at market rates) for promoting economic development. Pakistan is one of the developing countries that have relied heavily on external sources of financing for their development. The main focus of our study was to investigate whether this strategy of reliance on foreign aid has helped Pakistan to achieve reasonable GDP growth or not.

We highlighted, in Chapter 3, that a combination of favorable factors has enabled Pakistan to attract a relatively high level of external resources since 1960s (more than 10 percent of GDP in the 60s). The cost of this heavy dependence on external resource flows have started manifesting themselves in many forms, and questions are being asked as to whether it is in the collective national interest to continue this strategy unabated. There appeared an emerging consensus that the country would be better served by reducing the heavy dependence on foreign aid. This consensus deserved serious consideration and the implication of this option need ways and methods to get independence from foreign aid. Therefore, our analytical interest in these matters centered on two aspects: aid effectiveness and independence from foreign aid.

In Chapter 4 of this study, we evaluated the effectiveness of foreign aid in Pakistan. The main conclusion of this evaluation is negative one. Empirically, we found negative and mostly insignificant relationship between foreign aid and GDP growth rate

in Pakistan. Theoretically, the model which we have developed draws attention to reasons why this should be the case, including the possibility of leakage into non-productive expenditures in the public sector and of the transmission of negative effects to the private sector. The model assumes utility maximization in the public sector, but this allows room for an enormous variety of behaviors in the use of foreign aid according to the preferences which public-sector decision-makers demonstrate between tax reduction, minimum domestic borrowing, expansion of "developmental" expenditures and other objectives of government policy. However, the basic objective of developing public-sector utility maximizing model was to examine the impact of foreign aid on GDP growth rate in Pakistan. Our research shows that aid has a negative impact on GDP growth and this negative relationship between foreign aid and GDP growth is robust as we estimate many equations with additional variables and found negative aid-growth relationship. Further the results show that aid growth has a negative (Granger) causal impact on GDP growth in Pakistan. Thus the Pakistan's case supports the view that the net effects of aid on GDP growth are likely to be negative in a recipient country.

However, foreign aid's potential adverse consequences do not mean that it is necessarily a bad thing. The requirement is to use appropriate policy measures to minimize the undesirable aspects of foreign aid macro impact. These results show that though Pakistan has achieved relatively high growth rates in income and consumption since 1972-73, however foreign aid and external borrowing made it easier to avoid hard policy choices. Pakistan has lived beyond its means specifically in the 1980s and the 1990s, and has been fortunate in bridging the gap between domestic savings and current income transfers from abroad. However, even after over fifty years of foreign aid,

Pakistan is still mired in chronic poverty as almost 40 percent of the Pakistani population is living below the poverty line. Given this astounding figure, it is not surprising that poverty reduction is the most frequently stated goal of the foreign aid programmes of the donor along with the visible element of most aid programme i.e. the promotion of economic growth. Of course, poverty reduction and economic growth are often highly correlated, but it is still possible for aid to reduce poverty without having a significant positive effect on growth-just as aid has the potential to spur growth without alleviating poverty in any meaningful way.

Our study presents a modest analysis of the impact of foreign aid on GDP growth rate and poverty alleviation in Pakistan. We focused on the question whether aid can help poverty reduction in the presence of other explanatory variables and used OLS to check for the existence of a statistical correlation between foreign aid and poverty reduction in Pakistan. The results suggest that foreign aid as percentage of GDP has helped in reducing poverty level in Pakistan. According to the parameter estimates increase in foreign aid by one percent of the GDP will reduces the level of poverty by 0.14 percentage points. Thus the effect of aid on poverty is in the desired direction and statistically significant, though the magnitude of this effect is rather small.

Health expenditure as percentage of GDP shows a significant negative impact on poverty i.e. our results suggest that poverty level reduces by 0.17 percentage points with increase in health expenditure by one percent of the GDP. Public expenditures on education and agriculture as percentage of GDP have no significant impacts on the level of poverty in Pakistan. We further find that that per capita GDP growth has negative and

statistically significant effect on poverty, but the regression coefficient indicates that the magnitude of this effect is quite small.

Continuing the analogy with the aid-growth and aid-poverty relationship, foreign aid can have an impact on income distribution at macroeconomic level. Distribution is one of the neglected areas of macroeconomics and deserves more attention. We made an attempt to address the issue of aid's impact on income distribution in Pakistan. The results suggest that foreign aid has no contribution in improving the Gini Coefficient (in terms of its low value) and in fact, foreign aid has worsened the level of income inequality in Pakistan. These results are quite interesting in a sense that impact of foreign aid on GDP growth rate is negative one, while foreign aid helped in reducing poverty level in Pakistan, however aid worsened the level of income inequality in Pakistan during the period of analysis.

Our analysis appears to have obvious policy implications that foreign aid can have a positive impact on GDP growth rate only if the macroeconomic policies are right, macroeconomic incentives are not distorted and the supporting institutions are in place. In the absence of these pre-conditions, Pakistan postponed the tough decision required for prudent economic management. Under those circumstances, foreign aid became a curse and our results suggest that the reliance on foreign aid should be avoided. Pakistan would be better served by increasing those sources of external financing that are stable, sustainable, have positive effects on growth and poverty reduction with focus on improving income equality and are largely within the policy control of the Pakistani authorities, rather than continuing to depend on the volatile, less stable and traditional sources of external finance.

In Chapter 5, we show that the external financing strategy pursued so far has placed a greater emphasis on foreign aid and external borrowing rather than promotion of foreign investment and export expansion. Foreign investment and exports growth are considered to be more stable sources of finance as compared to foreign aid and external borrowings. In the period of 1980s and 1990s, Pakistan's external debt obligations have risen to an unprecedented level. This is despite the fact that the country had been able to borrow on concessional terms from international organizations and foreign governments unlike many other developing countries. The situation has raised many concerns about the viability of the strategy of excessive dependence on foreign sources and problems it poses for sustainable growth. In this study we have analysed the changes in the levels of Pakistan's external indebtedness. Various debt-burden and debt-service indicators are examined to highlight features of Pakistan's external debt obligations. Using the method of critical interest rate, we have evaluated the long-run debt-servicing capacity of Pakistan and it is found that the long-run debt-servicing capacity of Pakistan is extremely low. This is evident from low estimates of the critical interest rate. A major factor for this low critical interest rate has been the extremely low marginal saving rate. This shows that increasing the marginal saving rate can enhance long-run debt-servicing capacity of Pakistan.

While discussing the debt management policies pursued in Pakistan, it is suggested that the capacity to repay the foreign loans requires a series of coordinated actions. Productivity somewhere in the economy must be raised by the results of the loan. Resources must be allocated to increase the saving rate along with a decrease in capital-output ratio. These are tough requirements. They may seem easy when the initial

investment is made using external loans. In the long run, however, there is need to plan that saving exceed investment. This is shown in our model of getting independence from foreign aid (Chapter 6). The requirement for the repayment is dual one, as mentioned in our model based on Harrod-Domar two-gap model: not only must exports be greater than imports, but savings must exceed investment as well. If a country's loans are to be repaid (amortized) without new loans coming in, the country will have to transfer capital outward rather than inward. In case of Pakistan's economy, we observed that repayments exceed new inflows. So the debt-service problem exists in Pakistan because payments of principal and interest make up a large fraction of total exports revenues. This debt-service problem worsened by administrative lapses and absence of coordination. We drifted into trouble simply through lack of centralized records of our foreign aid use and we did not realize how much we owe and when repayments are due until creditors presented their bills. Obviously financial planning in such a situation is impossible and prudent debt management is required. In our study, we highlighted how debt is managed in Pakistan and how it should be managed.

Finally we make use of Harrod-Domar two-gap model to lessen the burden of foreign borrowing. To get early independence from foreign borrowing, nation would have to sacrifice in terms of its contribution raising the saving rate, GDP growth rate and lower capital-output ratio. Though it is not the aim of our study to attempt " policy prescriptions", however it does point to some obvious areas for concerted action. Better coordination in debt management and effective utilization of foreign borrowings will not only effect savings, consumption and investment but may also affect imports and exports. Ultimately the key requirement is coordination and better balance.

On the basis of the findings in our study, there is ample justification for suggesting that Pakistan should bring about a shift in its present external financial strategy by moving towards increased reliance on domestic savings, using external flows to supplement these savings, and making greater use of type of flows which are more stable, less volatile, have more beneficial effects on growth, and are within the control of Pakistan. It is not suggested that by adopting this strategy the country should completely discontinue borrowing on concessional terms from various bilateral and multilateral sources for productive investment, physical infrastructure, or social services, nor that it should refuse offers of official development assistance that help to achieve country's development objectives. There is no question that, for a long time to come, prudent borrowing on appropriate terms and conditions and for right purposes, official aid will be required and these flows should not be refused, except for the following two reasons. First, instead of passively accepting or actively soliciting all types of aid or borrowing indiscriminately, there should be greater selectivity in choosing the kind of assistance that make sense from national perspective; offers that do not make any positive contribution but only increase the debt burden should be refused. Second, a more pro-active policy should be pursued in the kind of capital flows that are more stable and readily available at the time of need. The policies required to bring about these changes in the composition of external flows, placing greater emphasis on exports, FDI and domestic savings, are quite consistent and complementary.

REFERENCES

Adams, F. J., Behrman J. and M. Boldin (1990), " Productivity, Competitiveness and Export Growth in Developing Countries" in B. Hickman (ed.), *International Productivity and Competitiveness*, Oxford: Oxford University Press.

Adelman I. and H. Chenry (1966), " Foreign Aid and Economic Development: The Case of Greece", *Review of Economics and Statistics*, February 48. 1-19.

Adler, John H. (1965), "*Absorptive Capacity: The Concept and Its Determinants*". Washington, DC: The Brooking Institution.

Ahmad, E. and Ayaz Ahmad (1998), " A Simulation Analysis of Debt Problem in Pakistan", *The Pakistan Development Review*, Vol. 37, No. 4.

Ahmed, E. (1996), "Capital Inflows and National Debt". *The Pakistan Development Review* 35:4 943-960.

Ahmed, Viqar and Rashid Amjad (1984), "*The Management of Pakistan Economy: 1947-82*", Oxford University Press, Oxford.

Aliber, Robert Z. (1980), "A Conceptual Approach to the Analysis of External Debt of Developing Countries," *World Bank Staff Working Paper No. 421* (Washington, October 1980).

Areskoug, Kaj (1973), " Foreign Capital Utilization and Economic Policies in Developing Countries", *Review of Economics and Statistics*, Vol. 55, pp. 182-9.

Avramovic, Dragoslav, and others (1964), "*Economic Growth and External Debt*", Johns Hopkins Press, Baltimore 1964.

Barro, R (1991), " Economic Growth in a Cross-Section of Countries", *Quarterly Journal of Economics*, Vol. 104, pp. 409-443.

Bhagwati, J. and Eckaus, R.S. (1970), " *Foreign Aid: Selected Readings*", Penguin Books, Middlesex, UK.

Boone, P. (1994), " *Politics and Effectiveness of Foreign Aid*", unpublished paper, London School of Economics.

Bowles, Paul (1987), " Foreign Aid and Domestic Savings in Less Developed Countries, Some Tests for Causality", *World Development*, Vol. 15, No. 6, pp. 789-96.

Browne, Stephen (1990), " *Foreign Aid in Practice*", London: Printer Publishers.

Bruton, Henry (1969), " The Two Gap Approach to Aid and Development: A Comment", *American Economic Review*, Vol. 59, pp. 439-446.

Bullow, J. and K. Rogoff (1990), " Cleaning up Third World Debt Without Getting Taken to Cleaners" *The Journal of Economic Perspectives*, Vol. 4, No. 1 (Winter):

Burney A. Nadeem (1988), " Determinants of Debt Problem in Pakistan and its Debt-Servicing Capacity", *the Pakistan Development Review*, Vol. 27, No. 4. (Part 2).

Cashel, Cordo, Peter and Steven G. Craig (1990), " The Public Sector Impact of International Resource Transfer", *Journal of Development Economics*, Vol. 32, pp. 17-42.

Cassen Robert, Duncan A., Guigingh, S., Hooper E., and O, Noman (1990), " *The Effectiveness of Aid to Pakistan*", Islamabad: UNDP/Economics Affairs Division, Government of Pakistan.

Cassen, R (1994), "*Does Aid Work? Report to an Intergovernmental Task Force*" Carlendron Press, Oxford.

Cassen, Robert and Associates (1986), "*Does Aid Work?*", Oxford: Oxford University Press.

Chang C. Charles, E.F. Arias and Luis Serven (1999), " Measuring Aid Flows: A New Approach", *World Bank Working Paper 2050*, World Bank Country Economics Department, Washington DC.

Chenery H.B. and P. Eckstein (1970), " Development Alternative for Latin America", *Journal of Political Economy*, Vol. 78, Jul/Aug. pp, 209-47.

Chenery H.B. and Strout A.M. (1966), " Foreign Assistance and Economic Development", *American Economic Review*, Vol. 56(4), pp. 679-733.

Chenery H.B. and T.N. Srinivasan (eds.) (1989), "*Handbook of Development Economics*" 2 Vols. North Holland/ Elsevier Science Publishers.

Chenery H.B., and N. Carter (1973), "Foreign Assistance and Development Performance, 1960-1970," *American Economic Review*, Vol.63, No.2, pp. 679-733.

Chenry, Hollis and M. Bruno, (1962), " Development Alternatives in an Open Economy: The Case of Israel", *Economic Journal*, Vol. 77, No. 285, pp. 79-103.

Dhonte, Pierre (1975), " Describing External Debt Situation: A Roll-Over Approach," *Staff Papers*, Vol.22 (March 1975), pp. 159-86.

Dowling, J. Malcolm and Ulrich Hiemenz (1982), " Aid. Savings and Growth in the Asian Region", *Asian Development Bank Economics Office Report Series (International)*, No. 3, Manila.

El Shibly, Mekki. (1984), " Foreign Capital Inflow, Domestic Savings and Economic Growth: the Experience of the Sudan (1960/61-1974-75)", *Journal of Economic Development*, Vol. 9, July, pp. 125-45.

Feder, Gershon and Richard E. Just (1977), " A Study of Debt Servicing Capacity Applying Logit Analysis," *Journal of Development Economics*, Vol. 4 (March 1977), pp. 25-38.

Feder, Greshon (1978), " *International Reserves and Debt Servicing Capacity of Developing Countries*", Unpublished, World Bank, April 1978).

Feder, Greshon (1978), "Economic Growth, Foreign Loans and Debt Servicing Capacity of Developing Countries", *Journal of Development Studies*, Vol. 4, March, pp. 25-38.

Feder, Greshon, Richard Just and Knud Ross (1981), " Projecting Debt Servicing Capacity of Developing Countries", *Journal of Financial and Quantitative Analysis*, Vol. 16, December, pp. 320-25.

Feyzioglu T. V. Swaroop, and M.Zhu (1998), " Foreign Aid's Impact on Public Spending", *World Bank Economic Review*, Vol. 12,pp. 29-58.

Findlay, R. (1973), "*International Trade and Development Theory*", Columbia University Press, New York.

Fischer, Stanely (1991), " *Growth, Macroeconomics and Development*" unpublished paper, National Buraeu of Economic Research and World Bank.

Fischer, Stanley, and Jacob A. Frenkel (1972), " Investment in Two-Sector Model and Trade in Debt and Capital Goods," *Journal of International Economics*, Vol. 2 (August 1972), pp-211-33.

Gang, Ira N. and Haider Khan (1986), " Foreign Aid and Public Expenditures in LDCs", *American Economic Journal*, Vol. 14, September, pp.56-8.

Government, of Pakistan (1960-2002), "*Economic Survey* (various issues)", Finance Division, Economic Advisor's Wing, GOP, Islamabad.

Government, of Pakistan (1988), "*Seventh Five Year Plan 1988-93*", Planning Commission, GOP, Islamabad.

Government, of Pakistan (1990), "*Effectiveness of Aid to Pakistan*", Economic Affairs Division, GOP, Islamabad.

Government, of Pakistan (2000), "*Five Year Plans*", Planning Commission, GOP, Islamabad.

Griffin, Keith (1971), " Foreign Capital: A Reply to Some Critics", *Bulletin of the Oxford University Institute of Economics and Statistics*, Vol. 33, May, No. 2.

Griffin, Keith and John Enos (1970), " *Foreign Assistance, Objectives and Cosequences*", Economic Development and Cultural Change. Vol. 18, pp.313-327.

Grinols, Earl and Jagdish Bhagwati (1976), " Foreign Capital, Savings and Dependence", *Review of Economics and Statistics*, Vol. 58, pp. 416-24.

Gupta, Kanhaya L, and M. Anisul Islam (1983), " *Foreign Capital, Savings and Growth: An International Cross-Section Study*", Dordrecht D. Reidel Publishing.

Haque, Nadeem U., and Peter J. Montiel (1992), " Fiscal Policy Choices and Macroeconomic Performance in the Nineties", *Financing Pakistan's Development in the 1990's*. Karachi: Oxford University Press.

Harrod R. F. (1963), " Desirable International Movements of Capital in Relation to Growth of Borrowers and Lenders and Growth of Markets" *International Trade Theory in a Developing World*, ed. By Harrod and Hague, Macmillan.

Hassan, Pervez (1999), " Pakistan's Debt Problem: Its Changing Nature and Growing Gravity," *Pakistan Development Review*, Vol. 38. No. 4 (Winter 1999).

Hayter, Teresa and C. Watson (1985), " *Aid: Rhetoric and Reality*, London: Pluto Press.

Healey, J.M. (1971), " *The Economics of Aid*", Beverly Hills: Sage Publications.

Heller, Peter S., (1975), "A Model of Public Fiscal Behavior in Developing Countries: Aid, Investment and Taxation", *The American Economic Review*, Vol. 65 No.3 (June 1975).

Hussain, Ishrat (1999), *Pakistan The Economy of an Elitist State*, Oxford University Press, Oxford.

Joshi, V. (1970), " Savings and Foreign Exchange Constraints" in Streeten P. (ed.) 1970, *Unfashionable Economics*, Weidenfield and Nicolson, London.

Katz, Menachem (1982), " The Cost of Borrowing, the Terms of Trade, and Determination of External Debt, " *Oxford Economic Papers*, New Series, Vol. 34 (July 1982), pp. 332-45.

Kemal, A.R. (2002), "*Debt Accumulation and its Implications for Growth and Poverty*," Paper presented in the 17th Annual general Meeting of PSDE, held in Islamabad in January 2002.

Kemal, A.R. and Mete Durdag (1990), "*Budgetary Deficit and Performance of Pakistan's Economy*", PIDE, Islamabad.

Kenen, P.B., (1990), " Organizing Debt Relief: The Need for a New Institution", *The Journal of Economic Perspectives*, Vol. 4, No. 1 (Winter): pp. 7-18.

Khan, A.H. (1995), " *The Impact of Structural Adjustment Programme on Pakistan*", Pakistan Institute of Development Economics, Islamabad, Pakistan.

Khan, Haider Ali and Elichi Hoshino (1992), "Impact of Foreign Aid on the Fiscal Behavior of LDC Governments," *World Development* 20, 1481-148

Khan, Masood Hassan (1991), " The Structural Adjustment Process and Agricultural Change in the 1980s and 1990s", *Pakistan Development Review*, Islamabad.

Khan, Masood Hassan, Syed Nawab Haider Naqvi, and Ghaffar Chaudhary (1989), "*Structural Change in Pakistan's Agriculture*", PIDE, Islamabad.

Khan, Shahrukh Rafi (1997), " *Aid, Debt and Growth in Pakistan*", Paper presented at the Thirteenth Annual General Meeting, December 15-17, 1997, Pakistan Institute of Development Economics, Islamabad.

Kharas, Homi (1981), " On Structural Change and Debt Service Capacity," *World Bank Domestic Finance Study* No. 74 (August 1981).

Khilji, N. and E.M. Zampelli (1991), " The Fungibility of US Assistance to Developing Countries and the Impact on Recipient Expenditures: A Case Study of Pakistan", *World Development*, Vol. 19, pp. 1095-1105.

Krueger, Anne O (1989), " *Aid and Development*", Baltimore, MD: Johns Hopkins University Press.

Le, T.H. and P. Winters, (2001). "Aid policies and poverty alleviation: the case of Viet Nam", *Asia-Pacific Development Journal*, vol. 8, No. 2, pp. 27-44.

Lee, J. et al. (1986), " Effectiveness of Foreign Capital Inflow on Developing Countries of Asia", *Asian Development Bank Economic Staff Paper* No. 30, ADB, Manila.

Lee, Jungsoo (1983), " The External Debet-Servicing Capacity of Asian Developing Countries", *Asian Development Review*, Vol. 1, No. 2.

Leimone, John E. (1979), " The Growth of Commercial Bank Lending to Non-Oil LDCs: Some Analytical Issues" Paper Presented at XVI Meeting of Technology, Solan School of Management, *Working Paper* (Cambridge, Massachuessets).

Lele, U. and Ijaz Nabi (1991), " *Transition in Development: The Role of Aid and Commercial Flows*". International Center for Economic Growth. ICS Press, San Francisco.

Levene Ross and David Renelet (1992), " A Sensitivity Analysis of Cross-Section Growth Regressions", *American Economic Review*, Vol. 82, pp.

Loser, Claudio M.(1977), " External Debt Management and Balance of Payments Policies," *Staff Papers*, Vol. 24 (March 1977), pp. 168-92.

Lucas, Robert (1990), " Why Doesn't Capital Flow from Rich to Poor Countries?" *American Economic Review*, Vol. 42, pp. 79-97.

Mackinaon, Ronald (1964), " Foreign Exchange Constraints in Economic Development and Efficient Aid Allocation", *Economic Journal*, Vol. 74, June, pp. 388-409.

Malik, S.J. et al. (1994), " *Pakistan Economic Performance 1947-93: A Descriptive Analysis*", Sure Publications, Lahore, Pakistan.

Meir M. Gerald (1990), " *Leading Issues in Economic Development*", Oxford: Oxford University Press.

Morisset, Jacques (1989), " The Impact of Foreign Capital Inflows on Domestic Savings Reexamined: The Case of Argentina", *World Development*, Vol. 17, No. 11, pp. 1709-15.

Mosley Paul and John Hudosn (1995), " *Aid Effectiveness- A study of the effectiveness of overseas aid in the main countries receiving ODA assistance*", University of Reading. Unpublished Research Report.

Mosley Paul, J Hudson and S. Horrell (1987), " Aid, the Public Sector and the Market in Less Developed Countries", *Economic Journal*, Vol. 97, pp. 616-642.

Mosley Paul, Turan Sabasat and John Weeks (1995) " Adjustment in Africa: A critique" *World Development*, Vol. 21, pp. 188-194.

Mosley, Paul, (1980), "Aid, Savings and Growth Revisited", *Bulletin of the Oxford University Institute of Economics and Statistics*, Vol. 42, May, pp. 79-95.

Mosley, Paul. (1986), "Aid-Effectiveness: The Micro-Macro Paradox" *IDS Bulletin*, April 17, pp.22-35, Institute of Development Studies, University of Sussex.

Nabi, I. and Hamid, N. (1991), " The Aid Partnership in Pakistan", in U.Lele and I. Nabi (eds.) *Transition in Development: The Role of Aid and Commercial Flows*, International Centre for Economic Growth, ICS Press, San Francisco.

Nafziger E.W. (1990), " *The Economics of Developing Countries*", New Jersey. Prentice, USA.

Naqvi, Syed Nawab Haider and Khawja Sarmad (1984), *Pakistan's Economy throughout the Seventies*, PIDE, Islamabad.

Newlyn, W.T. (1990), " Aid, the Public Sector and the Market in Less Developed Countries: A Note" , *Economic Journal*, Vol. 100, March, pp.220-23.

Nowzad, Bahram and Richard C. Williams (1981)," External Indebtedness of Developing Countries", *Occasional Paper* No. 3, International Monetary Fund (Washington, May 1981)

Pack, Howard and Janet R. Pack (1990), " Is Foreign Aid Fungible? The Case of Indonesia" *Economic Journal*, Vol. 100, pp. 188-194.

Pack, Howard and Janet R. Pack (1993), " Foreign Aid and the Question of Fungibility" *Review of Economics and Statistics*, Vol. 75, pp. 258-265.

Papnek, Gustave. (1972) " The Effects of Aid and Other Resource Transfers on Saving and Growth in Less Developed Countries." *Economic Journal*, Vol. 82, September.

Please S, (1967), " Saving Through taxation-Mirage or Reality", *Finance Develop*; Mar. 1967, Vol. 4, pp: 1-10.

Rahman, M. Akhlaqur (1984), " *Foreign Aid and Self Reliance Growth: The Case of Bangladesh*", Centre for Social Studies, Dhaka University.

Rana, P. and Dowling, J. (1988), " The Impact of Foreign Capital on Growth: Evidences from Asian Developing Countries", *The Developing Economies*, Vol. 26. No. 1.

Reichel, R. (1995), " Development Aid, Savings and Growth in the Asian Region", *Savings and Development*, Vol. 19, No. 3, pp. 279-96.

Riddell R , (1987), " *Foreign Aid Reconsidered*", London: James Curry.

Rodan Rosentein P. (1961), " International Aid for Underdeveloped Countries", *Review of Economics and Statistics*, Vol. 43(5), pp.107-138.

Romer, Paul (1986), " Increasing Returns and Long Run Growth" , *Journal of Political Economy*, Vol. 94, pp. 1002-1037.

Sachs, J.D. (1990), " A strategy for Efficient Debt Reduction", *The Journal of Economic Perspectives*, Vol. 4, No. 1 (Winter), pp. 19-30.

Sachs, Jeffery D; and Daniel Cohen,(1982) " LDC Borrowing with Default Risk," *National Bureau of Economic Research*, Working Paper No. 925 (July 1982).

Saleem, Irfan (1998). *Foreign Aid and Macroeconomic Performance of Pakistan with Special Reference to Analysing the Impact of Foreign Aid on Growth and Domestic Savings.* M.Sc. Thesis. University of Bradford, Bradford (UK)..

Salop, Joanne, and Erich Spitaller (1980), " Why Does the Current Account Matter?" *Staff Papers*, Vol. 27 (March 1980), pp. 101-34.

Selowsky Marcelo and Herman G. Van Der Tak, (1986), "The Debt Problem and Growth", *World Development*, Vol. 14 (9).

Solomon, Robert (1977), " A perspective on the Debt of Developing Countries," *Brookings paper on Economic Activity*: 2), pp. 479-501.

State, Bank of Pakistan, "*Annual Reports, Various Issues*", State Bank of Pakistan, Karachi..

Stewart, Frances (1971), " Comment", *Bulletin of the Oxford University Institute of Economics and Statistics*, Vol. 33, No. 2, May.

Stoneman, Colin (1975), " Foreign Capital and Economic Growth", *World Development*, Vol. 3, Jan. No. 1, pp. 11-26.

Synder, D. (1990), " Foreign Aid and Domestic savings: A Spurious Correlation", *Economic Development and Cultural Change*, Vol. 39. pp. 11-26.

Takagi, Yasuoki, " Aid and Debt Problems in Less Developed Countries," *Oxford Economic Papers*, New Series, Vol. 33 (July 1981), pp. 323-37.

Tendulkar, S. (1971), "Interaction Between Domestic and Foreign Resources: Some Experiments for India" Published in "*Studies in Development Planning*" Cambridge, MA: Harvard University Press.

Todaro M.P. (1991), "*Economic Development in the Third World*", Longman Publications, London.

United Nations (1989), " *Alternatives to Structural Adjustment Programs: A Framework for Transformation and Recovery*", Addis Ababa: UN Economic Commission for Africa.

United Nations (1995), "*State of the World Children*" UNICEF Report 1995.

Van Wijnbergen, Sweder (1985), " Aid, Export Promotion and Real Exchange Rate: An African Dilemma?", World Bank Country Policy Department Discussion paper, World Bank, Washington DC.

Voivodas, Costantin S (1973), " Exports, Foreign Capital Inflow and Economic Growth", *Journal of International Economics*, Vol. 3, pp. 337-349.

White, Howard (1992), " The Macroeconomic Impact of Development Aid: A critical Survey" *Journal of Development Studies*, Vol. 28, pp. 163-240.

White, Howard and Ganesh Wignaraja (1991), " *Real and Nominal Devaluation During Trade Liberalization in Sri Lanka: A Case Study of Aid-Induced Dutch Disease*", QEH Development Studies Working paper 37, Oxford.

World Bank (1983), "*Annual Review of Project Performance Results*", Operations Evaluation Department, Washinton DC: World Bank.

World Bank (1988), " *Report on Adjustment lending (convenor J. Holsen).* Washington DC: World Bank Country Policy Department.

World Bank (1989), "*World Development Report*", (various issues), Washington DC: World Bank.

World Bank (1990), " *Report on Adjustment lending II (convenor J. Holsen).* Washington DC: World Bank Country Policy Department.

World Bank (1992), " *Report on Adjustment lending III (convenor J. Holsen).* Washington DC: World Bank Country Policy Department.

World Bank (2001), "*Guidelines for Public Debt Management*", Operations Evaluation Department, Washington DC: World Bank.

Zaidi, Akbar S. (1999), " *Issues in Pakistan Economy*", Oxford: Oxford University Press.