

**GROWTH OF PUBLIC DEBT AND
DEBT SERVICING
IN PAKISTAN**

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FOREWARD

Pakistan finds itself today in a debt trap. Debt servicing has become the largest claimant of public resources. The high level of outstanding debt implies large interest payments which are currently financed by incremental borrowings that add to the debt and so on, creating a vicious circle of higher and higher public debt, budget deficit and debt servicing. Debt management must, therefore, emerge as one of the key areas of public policy and administration. It is as a consequence of this realisation that this study has been commissioned by the Ministry of Finance.

The study analyses the factors contributing to the growth of public debt and debt servicing in Pakistan, with the special focus on the impact of the financial sector reforms pursued in recent years, which have tended to increase the cost of domestic borrowings. The study presents a policy package for containing the growth of public debt and reducing the burden of debt servicing in coming years.

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Any defects which remain are the sole responsibility of the authors.

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LIST OF ACRONYMS

ADP	Annual Development Program
BNFB	Bearer National Fund Bond
DFI	Development Finance Institutions
DSC	Defence Saving Certificates
EAD	Economic Affairs Division
FEBC	Foreign Exchange Bearer Certificates
FEIB	Foreign Exchange Indexed Bond
FIB	Federal Investment Bond
FRB	Floating Rate Bond
GDP	Gross Domestic Product
GLB	Gold Linked Bond
GOP	Government of Pakistan
IMF	International Monetary Fund
KDC	Khas Deposit Certificates
MOF	Ministry of finance
NBP	National Bank of Pakistan
NDFC	National Development Finance Corporation
OMO	Open Market Operations
PEB	Prize Enhanced Bond
PTC	Pakistan Telecommunication Corporation
SBP	State Bank of Pakistan
SSC	Special Saving Certificate
SSGC	Sui Southern Gas Company
WAPDA	Water and Power Development Authority

EXECUTIVE SUMMARY

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The report is in seven parts. Part I gives the introduction, part II deals with level and composition of public debt, part III with interest rates, part IV with interest payments on debt, part V with the impact of financial sector reforms, part VI with the policy package and part VII with medium term projections.

1. INTRODUCTION

Trend in the Fiscal Deficit

The budget deficit has been above 5 percent of the GDP every year from 1980-81 onwards. It reached a peak at almost 9 per cent of the GDP in 1990-91. Since then it has been brought down to 5½ per cent by 1994-95. In the early and mid-80s, the contribution of the primary budget deficit (overall budget deficit net of interest payments) was larger, now interest payments account for the major share of the budget deficit. The former has been almost halved from over 3 per cent of the GDP in the 80s to less than 2 per cent in the 90s. Simultaneously, interest payments have risen from 2 per cent of the GDP in 1980-81 to almost 5½ per cent by 1994-95.

Primary budget deficit reduction has been achieved primarily by containment of the non-interest expenditure to GDP ratio, while the revenue to GDP ratio has remained generally stagnant. The largest component of decline has occurred in development expenditure followed by a significant fall in the share of defence expenditure in the GDP in recent years.

Continued efforts will have to be made to keep the primary budget deficit in check and if possible, generate surpluses. Given structural rigidities in debt servicing in the short run and in defence expenditure and a lower limit to development expenditure, emphasis will have to be placed on higher resource mobilisation by raising the tax to GDP ratio.

Burden of Debt Servicing

Debt servicing has become the largest claimant of public resources. Its share in expenditure has increased rapidly from 15 per cent in 1980-81 to over 37 per cent by 1994-95. If present trends continue, the share may exceed 45 per cent by the turn of the century. Debt servicing has increased very rapidly at over 22 per cent per annum, implying a doubling of the magnitude every four years. The largest and fastest growing component is interest on domestic debt followed by external debt repayment.

External debt servicing to exports ratio is close to 25 per cent, but has not shown rapid growth. This ratio for Pakistan is, however, somewhat higher than the developing country average of 23 per cent. Overall, the burden of debt servicing is high and rising rapidly.

Macro Economic Consequences of Budget Deficit and Public Debt

In the absence of a primary budget surplus, Pakistan finds itself in the 'debt trap' whereby the high existing level of outstanding debt implies high interest payments that add one-to-one to the budget deficit and have to be financed by incremental borrowing which increases public debt, and so on. The result is potentially explosive growth in budget deficits and debt which creates fundamental macro economic imbalances.

'Crowding out' of the private sector takes place when higher budget deficits reduce the level of private investment. This can be mitigated if private savings rise in response (the Ricardian

Equivalence Hypothesis). In the Pakistani setting, there is evidence that much of the adjustment to higher budget deficits has come via larger current account deficits. Private savings show little response and private investment has not suffered significantly, implying limited 'crowding out' effects.

Budget deficits can be financed either by money creation (seignorage), foreign reserve use, foreign borrowing and domestic borrowing. The last two have traditionally been the largest sources in Pakistan. This has implied faster growth in public debt, but has restricted inflationary pressures and prevented a draw down of foreign exchange reserves to critically low levels. However, persistently large budget deficits will eventually lead to more inflation as such deficits get monetised due to investors shying away from government paper in the face of high levels of public debt.

II. LEVEL AND COMPOSITION OF PUBLIC DEBT

The Size of Public Debt of Pakistan

Outstanding public debt of Pakistan stood at Rs 1473 billion at the end of 1994-95, equivalent to 78 per cent of the GDP, with Rs 805 billion as domestic debt and Rs 668 billion as external debt. External debt was larger than domestic debt in 1980-81, at Rs 87 billion out of a total of Rs 150 billion.

Domestic debt to GDP ratio has increased very rapidly during the decade of the 80s, especially upto 1986-87, but has moderated since then and remained, more or less, unchanged in the 90s. External debt to GDP ratio has continued to rise throughout the period, albeit at a slower pace and with a visible decline last year.

International comparisons reveal that the public debt ratio is relatively high in Pakistan as compared to 53 per cent in India, 67 per cent in Phillipines, 35 per cent in Turkey, 51 per cent in Nepal and 99 per cent in Sri Lanka. In particular, the domestic debt to GDP ratio appears to be relatively high while the external debt to GDP ratio is close to the developing country average.

Alternative estimates of external debt to those prepared by EAD/SBP have been published by World Bank. If the latter estimates are accepted then the public debt to GDP ratio of Pakistan was over 95 per cent in 1992-93 as compared to the official estimate of 84 per cent. Other approaches indicate that the effective debt burden may be lower. These involve netting out foreign exchange reserves from external debt and excluding debt held by the central bank (SBP) from domestic debt, because this is simply the counterpart of seignorage. The resulting estimate of the effective debt burden is about 62 per cent of the GDP in 1994-95 as compared to the official estimate of 78 per cent.

Structure of Public Debt

Domestic debt is classified as permanent debt, floating debt and unfunded debt. Major structural changes have occurred in the composition of domestic debt. During the 80s, there was a major increase in the share of unfunded debt while that of permanent debt increased marginally and that of floating debt declined sharply. Since then the share of the latter has increased somewhat at the expense of unfunded debt. These structural changes have implied an increase in the average maturity period of debt and a rise in effective interest costs.

Within each form of debt, there have also been major changes in the shares of different debt instruments. Following their introduction in 1990-91, Federal Investment Bonds (FIBs) have emerged as the largest source of permanent debt, with a share approaching 59 per cent. Market loans

which had been the pre-dominant source of such debt in the early 80s now have only a marginal share. The importance of prize bonds has also declined sharply during the last decade. It is of significance to note also the fall in contribution of bearer instruments like Bearer National Fund Bonds (BNFB) and Foreign Exchange Bearer Certificates (FEBC). These changes within permanent debt have generally contributed to higher interest costs.

Within unfunded debt, the importance of Defence Savings Certificates (DSC) has increased while that of Khas Deposit Certificates (KDC) and their successor, Special Saving Certificates (SSCs), has decreased. Also, new schemes like Special Savings Accounts have progressively increased their share. These changes have had a moderating effect on the effective interest cost, because even though DSCs carry the highest nominal rate of return, the effective costs are lower due to deferred payment of accumulated interest at maturity.

Changes in the structure of external debt have been opposite of those observed in the case of domestic debt. The share of short/medium debt has increased. Such debt is essentially contracted at commercial terms and is, therefore, more expensive than long term debt which is largely of a concessional nature.

Factors Contributing to Growth in Debt/GDP ratio

The pattern of change in the external debt/GDP ratio (according to World Bank estimates) differs between the decade of the 80s and the first half of the decade of the 90s. In the former period the cumulative increase in the ratio was 13.5 percentage points whereas in the latter period there was a fall of 5.7 percentage points. The increase in the external debt/GDP ratio was held back dramatically by the fact that throughout the last fifteen years the real interest rate on external debt was substantially below the real growth rate of the economy. The access of Pakistan to concessionary financing from multilateral and bilateral agencies has been a major factor restricting the level of the external debt/GDP ratio. The main reason for the difference between the two periods is the rate of real exchange rate depreciation and not in the size of the non-interest current account deficits. During the 80s there was a progressive undervaluation of the rupee in terms of purchasing power parity and the real exchange rate fell on average each year by about 3 per cent. This implied major capital losses and rapid increases in the rupee value of external debt. During the 90s the rupee has moved, more or less, in line with changes in purchasing power parity with only marginal changes in the real effective exchange rate, although the devaluation in late 1995 is expected to raise the external debt to GDP ratio in 1995-96.

The same pattern of evolution is observed in the overall public debt to GDP ratio, with a big rise during the 80s and a fall during the 90s. The difference can be attributed, first, to a decline in the size of the primary budget deficit in relation to the GDP in the latter period and, second, as mentioned above, a lower rate of depreciation in the real exchange rate. The contrasting pattern of movement in the public debt to GDP ratio in the two periods highlights the importance of primary budget deficits and exchange rate changes in influencing the growth of public debt.

Analysis of sustainability of public debt reveals that if the debt to GDP ratio is to be kept fixed at its present level, given the projected magnitudes of macro economic variables, then the primary budget deficit will have to remain below 1½ per cent of the GDP. If, in the presence of rising interest rates due to the on-going financial sector reforms, the objective is to keep the ratio of interest payments to GDP constant, then the primary budget deficit target will have to be pitched at even lower levels. In this case a realistic target is for non-interest current plus development expenditure to be equal to total revenues (tax plus non tax), implying a zero primary budget deficit.

III. INTEREST RATES

Level and Structure of Interest Rates

Variation exists in the structure of interest rates on debt instruments, with a low of 10 per cent in the case of prize bonds to a high of 16 per cent in the case of ten year maturity DSCs. During the decade of the 80s there was little or no change in nominal interest rates. Following the financial sector reforms marked changes are observed. Treasury bills which were 'on tap' at 6 per cent now give yields of upto 14 per cent at the auctions. FIBs, which now substitute for market loans in permanent debt, yield upto 15 per cent whereas the latter had been floated historically at rates ranging from 3 per cent to 11¼ per cent. In recent years, the government has also made modest enhancements in rates of return on DSCs and SSCs, with a significant escalation in the latter two months ago. Interest rates on long term external loans have generally remained unchanged, although variation is observed by source with lowest rates being charged by IDA and on bilateral assistance from Germany and Japan.

Determinants of Rates of Return on Debt Instruments

Variation in rates of return on different instruments is a function of the issuer, maturity period, frequency of payment of return, degree of anonymity (registered or bearer), extent of liquidity and tax treatment (withholding taxes and Zakat). Results of the analysis undertaken are that government debt as opposed to that by public enterprises or the private sector is cheaper in view of the greater public confidence in the guarantee, net yield on bearer instruments is generally lower (by about 1 percentage point), the yield increases linearly with the maturity period (by about 0.4 percentage points per year), more liquid instruments carry lower returns (by about 2 percentage points) and the return is lower, other things being equal, in the case of instruments which involve more frequent payment of interest. The analysis is useful in identifying instruments where the premium on different characteristics has not been consistently applied by the government.

IV. INTEREST PAYMENTS ON DEBT

Effective Interest Cost of Debt

Interest payments on public debt aggregated to Rs 101 billion in 1994-95, with almost 78 billion in lieu of domestic debt, and growing annually at the rate of 23 per cent. There is a noticeable jump in interest payments in 1991-92 on all forms of domestic debt in the immediate aftermath of the financial sector reforms. The rise in interest payments has outpaced the growth in public debt, implying a rise in the effective interest cost (= interest payments as a percentage of outstanding debt (lagged by one year)). The overall effective interest cost on public debt was 4 per cent in 1980-81, which increased to 6.9 per cent by 1989-90 and attained a peak of 7.8 per cent in 1993-94.

Among individual debt instruments, the highest effective interest cost is observed in the case of FIBs of over 15 per cent, followed by SSCs/Saving Accounts of about 12 per cent and DSCs at 10½ per cent. The largest divergence between nominal interest rates and effective interest costs is in the case of DSC due to the deferred payment of accumulated interest at maturity.

What explains, in particular, the big increase in effective interest cost on domestic debt of over 4 percentage points between 1980-81 and 1994-95? Between 1980-81 and 1990-91 there was an increase of less than 2 percentage points and between 1990-91 and 1994-95, over 2 percentage points. In the first period, bulk of the increase was due to the compositional effect with the shift from permanent and floating to relatively high cost unfunded debt. During the 90s, the rise in effective cost is primarily due to the increase in interest rates, especially on permanent and floating debt, largely as a consequence of the financial sector reforms. It appears that while the public debt to GDP ratio

has stabilised and even fallen somewhat in recent years, interest payments as a proportion of the GDP continue to rise because of the concomitant increase in effective interest costs.

Factors Contributing to Changes in Interest Payments to GDP Ratio

Formal analysis has been undertaken to identify the contribution of rising interest costs to the increase in the interest payments to GDP ratio. The latter not only increases the cost of servicing a given amount of debt but also implies a higher quantum of debt. Therefore, both these effects need to be captured in the analysis. The conclusion is that if the effective interest cost on public debt had remained fixed at the 1980-81 level then the level of public debt would have been about 14 per cent lower, less by over Rs 230 billion, while interest payments would have been 41 per cent lower, Rs 60 billion instead of Rs 101 billion. Therefore, a major part of the increase in interest payments is due to the rise in effective interest costs from 1980-81 to 1994-95.

V. IMPACT OF FINANCIAL SECTOR REFORMS

Prior to the introduction of financial sector reforms in 1991, an elaborate system of regulations and controls governed the financial system, involving directed credit and concessionary interest rates. Under this financial regime, banking institutions provided GOP with captive funds at low interest rates through investment in government securities like treasury bills at 6 per cent or less. The key element of the reforms with direct implications on the cost of government borrowings was the introduction of an auction system both for short term debt (treasury bills) and medium-to-long term debt (FIBs). Interest rates on treasury bills have generally fluctuated between 12 and 13 per cent while the rate of return on FIBs ranges from 13 per cent to 15 per cent. As a consequence it appears that the effective interest cost on public debt which had stabilised at around 6½ per cent rose rapidly after 1990-91, reaching a peak close to 8 per cent in 1993-94.

Formal analysis in a model framework has been undertaken to quantify the impact of the financial sector reforms on the level of public debt, budget deficit and interest payments. It appears that by 1995-96, the process of financial sector reform will have implied a higher public debt to GDP ratio of about 2½ percentage points, equivalent to Rs 50 billion. The difference (compared to the projection in the absence of the reforms) is expected to increase to about 6 percentage points by the turn of the century.

Rising interest rates associated with the process of financial sector liberalisation have already implied higher interest payments of about ½ to 1 percentage point of the GDP. The budget deficit has also been higher by the same magnitude. Over the next few years, the higher interest rates will imply that interest payments will be larger by about 1 per cent of the GDP.

The initial expectation that part of the higher interest costs will be recovered through larger non-tax revenues arising from correspondingly higher profits of the SBP and the nationalised commercial banks has largely not materialised because of losses incurred by SBP in providing foreign exchange cover and running concessionary credit lines while profitability of commercial banks has been impaired by rising overhead costs and debt default.

The adverse impact of the financial sector reforms on the fiscal deficit highlights that the sequencing of economic reforms in Pakistan during the 90s may not have been optimal. Perhaps a more prudent policy was first to bring about structural changes in fiscal policy so as to reduce the level of government borrowing and then remove the lid on interest rates as part of the liberalisation process. In the Pakistani setting, early adoption of financial sector reforms has made the task of reducing the budget deficit more difficult.

VI. THE POLICY PACKAGE

Scope for Seignorage in Pakistan's Economy

The first major issue of policy is the extent to which governments in Pakistan can resort to seignorage (money creation) to finance budget deficits in a way which does not add to debt servicing liabilities. This depends upon the demand for base money and the elasticity of demand for real balances with respect to inflation and income. The analysis undertaken focuses on the demand for currency (which constitute the dominant part of base money) in Pakistan. Econometric analysis reveals that, as expected, demand for currency increases with income (with a near unity elasticity) and decreases with the inflation rate. It appears from the estimated coefficients of demand that there is relatively greater scope for seignorage in Pakistan, perhaps because of repression historically of the financial sector and a relatively large cash transaction based black economy.

The results indicate that the scope for seignorage rises initially with the inflation rate and then falls. The maximum amount of seignorage possible is about 2.6 per cent of the GDP at an inflation rate of 25 per cent. Given the concomitant economic and political implications of such a high rate of inflation, the prudent policy for GOP is to target for lower levels of seignorage (about 2 per cent of GDP), which is consistent with an inflation rate close to 10 per cent. This is also in line with past level of seignorage in Pakistan which has averaged 1.7 per cent of the GDP during the last fifteen years.

Rationalisation of Interest Rates

Analysis of the determinants of rates of return on debt instruments indicates where the premia on different characteristics has not been consistently applied by GOP. It appears that there is primarily a need for rationalisation of the term structure of interest rates on a number of instruments like FIBs, DSCs and FEBCs whereby the return on earlier encashment is reduced and simultaneously enhanced for longer periods of holding. Also, return on relatively short/medium term instruments like SSCs needs to be brought down, rather than increased as has been done recently. This process of rationalisation of interest rates will encourage investment on a longer term basis and by increasing the maturity period of debt avoid frequent debt rollovers and potentially reduce fluctuation in interest rates.

Also, GOP needs to review its interest rate policy. Historically, a constant nominal return but variable real return (due to changes in rate of inflation) policy has been followed. From the viewpoint of sustaining a steady flow of funds it may be more appropriate to pursue a, more or less, constant real return but variable nominal return policy, through partial indexation of the latter to the underlying rate of inflation. The prospects of switching from low cost old debt to high cost new debt in the event that interest rates are adjusted upwards is limited by the presence of a 'lock-in' effect arising from the positive relationship between the rate of return and the period of holding and the payment of Zakat at encashment. In 1995-96, inflation is expected to come back to a single digit rate once again. This provides an opportunity for slowly bringing down rates of return on voluntary savings schemes.

Investment in Voluntary Saving Schemes

Econometric analysis of determinants of net flow of funds annually into major debt instruments like DSCs, SSCs and prize bonds reveals that these depend upon the overall quantum of private savings in the economy, their own real rates of return and return on competing investments like the stock market and bank deposits. DSCs appear to be the most responsive to increases in private savings followed by prize bonds. Also, DSCs have the highest elasticity with respect to changes in real rates of return. It is of significance to note the low elasticity of SSCs with respect to their real rate of

return. This indicates that flow of funds into SSCs may not rise substantially in response to the recent increase in returns. A more successful policy may have been to increase the return on DSCs.

Results of the analysis of the flow of funds into voluntary saving schemes have some significant policy implications. First, care must be exercised in the flotation of new instruments to ensure that they attract new funds and do not largely divert investment from existing schemes. There is some evidence that as the secondary market develops, FIBs may divert investment from DSCs, the latter having a lower effective interest cost. Second, the results indicate that during periods of high inflation or when the stock market is buoyant, there may be difficulties in attracting funds into voluntary saving schemes unless competitive returns are offered.

The estimated equations for investment in major debt instruments provide a basis for setting the interest policy. Given the projected requirement of domestic borrowings and expected values of variables like private savings, the government can derive the real rates of return required to achieve the borrowing targets. Interest rate policy can then be made consistent with these desired real rates of return.

Rationalisation and Innovation in Debt Instruments

There has been a proliferation of unfunded debt instruments in the economy. The Central Directorate of National Savings has diversified its activities by allowing special saving and other types of accounts with its branches. This has greatly increased the workload and led to deterioration in the quality of services. Given the relatively favored tax treatment, it has also placed the banking system at a competitive disadvantage in mobilising saving deposits. As a policy the opening of new accounts at the centres may be stopped and emphasis placed in future on sale of certificates through the banking system at a suitable commission.

A prime area of innovation is prize bonds, a low cost debt instrument. GOP has recently announced high denomination prize bonds of Rs 10,000 and Rs 25,000 with big first prizes of Rs 1 Crore and Rs 2½ Crores respectively. The policy intent does not appear to be to attract small savers but large holders of black money and risk prone investors. However, the target for mobilisation of funds from these new bonds has not been achieved. This is probably due to limited access given the high denomination and an apparent lack of promotion.

Given this experience, the most attractive prize bond scheme may be one which while having a relatively low denomination offers a big first prize, and appeals to the risk taking instincts of the multitude of small savers in the informal sector. A possible prize bond scheme with these features is one with a denomination of Rs 2000 with a big first prize of Rs 1 Crore but reduced probability of success (one fourth of the conventional scheme). Another innovation is the flotation of a foreign exchange prize bond scheme. In such a scheme the bonds would be denominated and purchased in foreign exchange (\$ 100) and the prize would be designated in foreign exchange (first prize of \$ 250,000) but payable in rupees at the exchange rate prevailing at the time of the scheme. The total value of prizes can thus be kept lower at say 6 percent of the total funds invested. This scheme is likely to be particularly attractive to Pakistani workers abroad and should be promoted by branches of commercial banks in the Middle East and elsewhere.

Other types of debt instruments which could be considered include a prize enhanced bond (PEB), floating rate bond (FRB), foreign exchange indexed bond (FEIB) and a gold linked bond (GLB). A PEB will carry a sub-market rate of return, say 9 per cent, plus the chance to win a substantial cash prize which could be equivalent to say 2 per cent of the amount issued. This instrument has the additional attraction, compared to the typical prize bond, of not only keeping the bondholder's capital

intact but also offering some return on investment. A floating rate bond (FRB) will be more successful in hedging against inflationary expectations of investors. In this bond coupon payments will be refixed periodically by reference to some independent interest rate or index, like an additional 2 to 3 percentage points on the weighted average T-bill auction rate during the six months prior to the coupon payment. In this way interest rates will become more market driven.

A FEIB will have an issue price equivalent to US dollars payable in rupees at the prevailing exchange rate. Redemption and/or interest payments could also be denominated in US dollars, payable at the exchange rate prevailing at the time of payment. Given the steady depreciation of the Pak rupee against the US dollar, this bond may find a ready market among investors. It will tackle the speculation that is already taking place in dollars. Effective interest costs to GOP in the short run will be low as most of the return will accrue in the form of capital gains at the time of redemption. A gold linked bond (GLB) is most likely to appeal to the social and cultural values of the people and also act as a long run inflation hedge. It has the characteristics of a DSC in that the entire return will be realised at the time of maturity and effective interest costs to GOP will also be low initially. GLBs are likely to attract significant savings from the informal sector.

Public Debt Management and Monetary Policy

There is need for proper co-ordination between public debt management and monetary policy, especially in view of the financial sector reforms and in the presence of high levels of government borrowing. This co-ordination is required in the setting of quarterly and annual targets for sale of government securities, assessing demand for different types of instruments, determining the size and timing of auctions and in developing an adequate base of financial information to promote effective open market operations (OMOs), especially following the transition to indirect instruments of monetary policy.

Directions of future reform must include development of markets for government securities, especially a sufficiently deep secondary market. In terms of efficient conduct of OMOs, the objective must eventually be for SBP to intervene in the securities market through purchases and sales in the market and less by varying the size of primary issues. Repurchase and reverse repurchase agreements must be used increasingly to achieve short term, reversible adjustments in financial sector liquidity. In future, government may also want to focus more on placement of long term securities (like FIBs) rather than T-bills, in view of the need to finance projects of a long term nature through the ADP.

Effective co-ordination of public debt management and monetary policy calls for a more effective use not only of the Monetary and Fiscal Policies Co-ordination Board but also for greater day-to-day interaction between middle level officials of the MOF and the SBP. It needs to be recognised that it is not only the size of the budget deficit which places a burden on monetary management but also that poorly conceived and operated monetary instruments can make the task of public debt management more difficult.

VII. MEDIUM TERM PROJECTIONS

A Projection Model of Budget Deficit, Seignorage and Debt

A handy and user friendly twenty equation projection model has been developed by us which incorporates the impact of key macroeconomic and policy variables on the size of the budget deficit and public debt. The model has two basic uses, first, it enables the development of medium run scenarios and identifies the set of policy actions required to achieve pre-specified targets for the

budget deficit and public debt to GDP ratio. Second, it quantifies the impact of 'shocks' like devaluation, decline in GDP growth rate, rise in rate of inflation, etc., on the state of public finances.

Projections under Different Scenarios

The model highlights that Pakistan can achieve significant reductions in the budget deficit and the public debt to GDP ratio by the turn of the century if the following targets/policy actions are achieved:

- (i) There is a primary budget surplus of 1 per cent of GDP in 1995-96 and a zero primary budget deficit in subsequent years.
- (ii) Balancing of the primary budget in the next few years will require significant levels of fiscal effort, in the face of import tariff reductions. Cut backs in non-interest current expenditure will also be required as development expenditure has already been scaled down substantially and further reductions may jeopardise the growth potential of the economy.
- (iii) stability in interest rates on debt instruments, achieved primarily by reduction in the quantum of government borrowing, which decreases the pressure on the capital market, rationalisation of interest rates and innovation in debt instruments, of the type described above, such that effective interest cost on domestic debt can be contained in the presence of financial sector reforms to about 3 per cent in real terms.
- (iv) somewhat greater reliance on external borrowing, which implies lower interest payments although the debt repayment is larger.
- (v) exchange rate policy is pursued such that the real effective exchange rate remains, more or less, constant. This implies a nominal rate of depreciation annually of the rupee by about 7 per cent. Such a policy will restrict the capital losses on external debt.
- (vi) a level of seignorage (money creation) of about 1.8 per cent of the GDP which is consistent with an annual inflation rate of less than 10 per cent.
- (vii) privatisation proceeds are used entirely to finance the budget deficit, thereby reducing the quantum of borrowing, and not diverted into any form of expenditure.

Successful implementation of the above policy package will lead to a major improvement in all the key public finance magnitudes. The budget deficit will fall steeply in 1996-97 and 1997-98 and then stabilise at between 4 to 4½ per cent. Interest payments will fall sharply to about 4.8 per cent of the GDP by 1999-2000. The overall level of public debt to GDP can be brought down from 78 per cent in 1994-95 to just over 63 per cent in five years, with most of the reduction in the domestic debt to GDP ratio. Altogether, it appears that prudent, rational and co-ordinated fiscal and monetary policies can achieve a big reduction in the public debt and debt servicing to GDP ratios by the turn of the century.

PART ONE
INTRODUCTION

Chapter One

TREND IN THE FISCAL DEFICIT

One of the major economic problems confronting policy makers in the country is the structural imbalance in public finances whereby expenditure consistently exceeds revenues. This phenomenon is not a random event occurring in some years nor is it associated with particular regimes in the country. As can be seen from Table 1.1, budget deficit has been above 5 percent of the GDP every year from 1980-81 onwards. Consequently, the key

TABLE 1.1
TREND IN BUDGET DEFICIT OF PAKISTAN
(Consolidated Federal and Provincial Governments)

Years	[RS IN BILLION]			[% OF GDP]		
	Budget Deficit	Primary Deficit	Interest* Payments	Budget Deficit	Primary Deficit	Interest Payments
1980-81	14.6	8.7	5.9	5.3	3.2	2.1
1981-82	17.2	9.5	7.7	5.3	2.9	2.4
1982-83	25.7	14.5	11.1	7.0	4.0	3.0
1983-84	25.1	11.0	14.1	6.0	2.6	3.4
1984-85	36.8	20.3	16.5	7.8	4.3	3.5
1985-86	41.8	21.9	19.7	8.1	4.3	3.8
1986-87	46.7	22.8	23.9	8.2	4.0	4.2
1987-88	57.6	24.4	33.2	8.5	3.6	4.6
1988-89	56.9	18.8	38.1	7.4	2.4	5.0
1989-90	56.1	9.4	46.7	6.5	1.1	5.4
1990-91	89.2	39.2	50.0	8.7	3.8	4.9
1991-92	90.0	27.2	62.4	7.4	2.3	5.1
1992-93	107.5	28.7	78.8	7.9	2.1	5.8
1993-94	92.2	1.3	90.9	5.9	0.1	5.8
1994-95	103.4	1.3	101.2	5.5	0.1	5.4
Average in 1980s	—	—	—	7.0	3.2	3.7
Average in 1990s	—	—	—	7.1	1.7	5.4
Average for Period	—	—	—	7.0	2.7	4.3

* These differ somewhat with the Ministry of Finance estimates, which are given in Table 2.1.

SOURCES:
 Pakistan Economic Survey
 SBP Annual Report

macro economic indicators show signs of stress. The debt burden is rapidly becoming unsustainable, debt servicing is pre-empting scarce resources resulting in inadequate

investment in and maintenance of key economic and social infrastructure, the inflation rate is in double digits, interest rates are on the rise adversely affecting investment and thereby the growth rate of the economy.

It is, therefore, essential to examine factors responsible for the persistence of fiscal deficits and to tackle them on a priority basis. In this chapter we analyse the trends in budget deficit, examine the causative factors and discuss prospects for the future.

1.1 Trend in the Budget Deficit

The overall budget deficit has increased from about Rs 15 billion in 1980-81 to Rs 103 billion by 1994-95, at an average annual rate of 15 percent. As a percentage of GDP, budget deficit reached its peak in 1990-91, at 8.7 percent. Since then an effort has been made to bring it down to the level of 5½ percent in 1994-95.

For the purpose of this study, perhaps a more useful way of examining the structural fiscal imbalance is to see what has been happening to the primary budget deficit. Primary budget deficit is the overall budget deficit, net of interest payments. Increase in interest payments besides being a cause is also an effect of an increase in budget deficit. Since the budget deficit is financed by borrowings, interest payments increase with a rise in the budget deficit. Furthermore, these payments introduce a strict rigidity on the expenditure side which restricts the remedial options available. Moreover, trend in the primary budget deficit may be different from the overall budget deficit, due to the the magnitude of interest payments, the latter being largely exogenous to policy makers.

Table 1.1 shows that this is indeed the case in Pakistan. In the early and mid-80s, the contribution of primary budget deficit to the overall budget deficit was larger. Since then

interest payments account for the major share of the budget deficit. In fact, the primary budget deficit has tended to decline over the years (see Chart One). It has been almost halved from an average level of 3.2 percent of GDP in the 80s to 1.7 percent in the 1990s. As such, it is clear that the rapid rise in interest payments is the root cause of the current fiscal imbalance in the country. During the last two years, in particular, the government has been successful in substantially bringing down the primary budget deficit to about Rs 1 billion, equivalent to only about 0.1 percent of the GDP. Therefore, in 1993-94 and 1994-95, the entire budget deficit is due to interest payments on outstanding debt. If the primary budget deficit can be contained at its present level, then future reductions in the budget deficit will require scaling down of interest payments as a percent of the GDP.

How has the decline in the primary budget deficit been achieved? Table 1.2 shows that public expenditures (net of interest payments) have always been higher than revenues. On an average, annual expenditure has been about 20 percent of GDP while average revenue generation has been lower at about 18 percent of GDP. Notice, however, that some effort has been made to control the rate of increase in expenditure and enhance it in the case of revenues, thereby narrowing the gap between the two over time. The government appears, however, to have been more successful in controlling the growth of expenditures than enhancing revenues. As can be seen from Table 1.2, revenues have remained at around 17 to 18 percent of GDP. In fact, there has been a decline of about 0.6 percentage points in the last two years. As such, the decline in the primary budget deficit is principally a consequence of the decline in the expenditure-to-GDP ratio of almost 2½ percentage points, from 20 percent of GDP in 1992-93 to 17.5 percent in 1994-95.

We next analyse the structure of revenues and expenditures to examine factors determining these trends.

Chart One
Trend in Budget Deficit, Primary Deficit and Interest Payments
(As % of GDP)

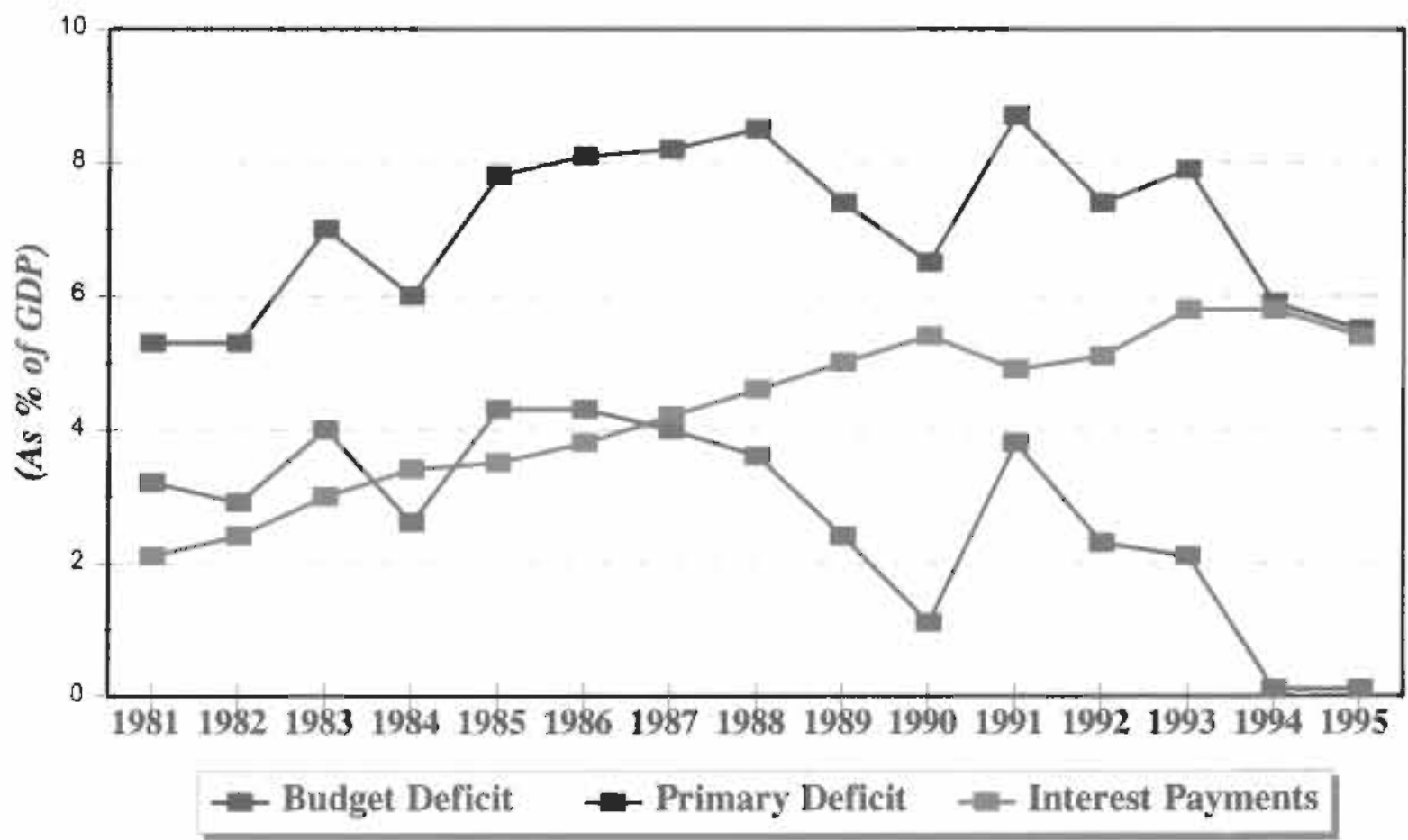


TABLE 1.2
TRENDS IN REVENUES AND EXPENDITURES
(Consolidated Federal and Provincial Governments)

Years	[RS IN BILLION]			[AS % OF GDP]		
	Revenue	Expenditure [Exc. Interest]	Primary Budget Deficit	Revenue	Expenditure	Primary Budget Deficit
1980-81	49.0	57.8	8.9	17.8	21.0	3.2
1981-82	53.8	64.1	9.5	16.6	19.5	2.9
1982-83	61.4	76.0	14.6	16.9	20.8	4.0
1983-84	74.9	85.9	11.0	17.8	20.5	2.6
1984-85	80.0	100.4	20.3	16.7	21.3	4.3
1985-86	92.7	114.8	21.9	18.2	22.3	4.3
1986-87	105.6	128.5	22.8	18.5	22.4	4.0
1987-88	122.9	147.2	24.4	18.2	21.8	3.6
1988-89	144.2	163.0	18.8	18.7	21.2	2.4
1989-90	165.5	174.9	9.4	19.3	20.4	1.1
1990-91	171.7	211.0	39.2	16.8	20.6	3.8
1991-92	231.4	259.1	27.2	19.1	21.4	2.3
1992-93	241.1	269.8	28.7	18.0	20.1	2.1
ACGR-94*	212.5	213.9	-12.8	17.2	17.5	-21.9
1994-95	324.9	326.2	1.3	17.4	17.5	0.1
Average in 1980s				17.9	21.1	3.2
Average in 1990s				17.7	19.4	1.7
Average for Period				17.8	20.5	2.7

* Annual cumulative growth rate = ACGR
SOURCES:
• Pakistan Economic Survey
• SBP Annual Report

1.2 Structure of Revenues

Revenues of federal and provincial governments in Pakistan have remained largely stagnant at about 17 to 19 percent of the GDP over the last fifteen years. This is primarily because tax revenues, which account for 79 percent of total revenues, have not been able to increase at a rate faster than the GDP. As such, there exist basic structural defects in the taxation structure in Pakistan whereby bulk of the tax sources have a low elasticity with respect to income. Factors contributing to the low elasticity of taxes include specific rate structure, narrow and non-buoyant tax bases, large and growing number of exemptions, revenue leakages due to inefficient tax administration and evasion and corruption and, in general, a

low level of fiscal effort (particularly in the case of provincial taxes). Compared internationally, Pakistan demonstrates a low level of tax effort. Tax revenues as a percentage of GDP for developing countries with per capita income of \$ 360 to \$ 750 is 19.7 percent. In Pakistan, it ranges between 13 and 14 percent (see Table 1.3). On the non-tax side, the low level of cost recovery in economic and social services severely limits their revenue contribution to the exchequer. The decline in the self-financing by autonomous bodies after 1991-92 is because of their exclusion from the federal budget. The consequent decline in revenues is approximately one percentage point of the GDP.

1.3 Structure of Expenditures

As highlighted above, the decline in the growth rate of expenditures has been the key to the reduction of primary budget deficit in Pakistan. While this is a favourable development from the budgetary point of view it needs to be emphasised that public expenditures, in particular on development, enhance the growth potential of the economy. This is the case because the public sector continues to be the prime provider of key economic and social infrastructure which constitute an important pre-requisite to growth in any economy. Therefore, it is important that fiscal considerations do not totally overwhelm growth objectives. This is best achieved if fiscal concerns are addressed largely by reduction in non-productive, non-development expenditure and the public sector development outlay is not severely curtailed.

Table 1.4 shows, however, that exactly the opposite has been happening in Pakistan. It appears that the strategy for controlling expenditure growth has focused largely on development expenditure which has resulted in less than a nine percent annual increase in development outlays compared to about a 16 percent growth in non-interest current expenditures. Consequently, the imbalance between current and development expenditures has increased over time. Currently, development expenditure is just over four percent of

TABLE 1.3
COMPOSITION OF REVENUES
(Consolidated Federal and Provincial Governments)

Years	[RS IN BILLION]				[AS % OF GDP]			
	Tax Revenue	Non-Tax Revenue	Self Financing by Auto. Bodies & Other Sources	Total Revenue	Tax Revenue	Non-Tax Revenue	Others	Total Revenue
1980-81	38.3	8.1	2.0	48.0	14.1	2.9	0.7	17.8
1981-82	43.0	8.9	1.9	53.8	13.3	2.7	0.6	16.6
1982-83	48.8	10.1	2.3	61.4	13.4	2.8	0.8	16.9
1983-84	55.4	13.9	2.0	71.3	13.9	3.3	0.8	17.9
1984-85	61.2	16.2	2.6	80.0	13.0	3.4	0.8	16.7
1985-86	72.4	17.4	2.8	92.7	14.1	3.4	0.8	18.2
1986-87	82.3	20.9	1.8	105.0	14.5	3.6	0.3	18.5
1987-88	93.8	23.6	5.8	122.9	13.8	3.5	0.8	18.2
1988-89	110.3	28.8	5.1	144.2	14.3	3.7	0.7	18.7
1989-90	119.4	30.3	6.8	156.5	13.9	4.0	0.8	18.7
1990-91	129.6	32.2	7.9	171.7	12.7	3.1	0.8	16.6
1991-92	164.3	31.1	14.9	210.4	13.6	4.3	1.2	19.1
1992-93	178.4	32.3	1.6	211.1	13.3	4.5	0.1	18.0
1993-94	208.4	33.1	3.0	244.5	13.3	4.0	0.1	17.4
1994-95	258.8	38.0	5.0	301.8	13.7	3.3	0.3	17.4
ACGR %	14.4	15.8	6.7	14.5	-0.2	0.9	-0.9	-0.2
SOURCES: • Pakistan Economic Survey • SBP Annual Report								

TABLE 1.4
COMPOSITION OF EXPENDITURES
(Consolidated Federal and Provincial Governments)

Years	[RS IN BILLION]			[AS % OF GDP]		
	Current Expenditure [Exc. Interest]	Development Expenditure	Total Expenditure	Current Expenditure	Development Expenditure	Total Expenditure
1980-81	31.9	25.8	57.8	11.6	9.4	21.0
1981-82	36.8	26.5	64.1	11.3	8.2	19.5
1982-83	46.6	29.4	76.0	12.8	8.1	20.9
1983-84	57.8	28.1	85.9	13.8	6.7	20.5
1984-85	67.3	33.0	100.4	14.2	7.0	21.3
1985-86	75.0	39.8	114.8	14.6	7.7	22.3
1986-87	92.3	36.2	128.5	16.1	6.3	22.4
1987-88	100.4	46.7	147.2	14.9	6.9	21.8
1988-89	114.9	48.1	163.2	14.9	6.2	21.2
1989-90	118.9	56.1	174.9	13.9	6.6	20.4
1990-91	145.7	65.3	211.0	14.3	6.4	20.6
1991-92	167.7	91.3	259.1	13.8	7.5	21.4
1992-93	193.7	76.2	269.8	14.4	5.7	20.1
1993-94	202.6	74.1	274.0	12.9	4.7	17.5
1994-95	244.6	81.9	326.5	13.1	4.4	17.5
ACGR %	15.7	8.6	13.2	0.9	-5.3	-1.3
SOURCES:						
• Pakistan Economic Survey						
• SBP Annual Report						

GDP while the same ratio for current expenditure is over 13 percent. As such, improvement in the primary budget deficit has largely been achieved by slashing development outlays. It appears that the contraction in development expenditure of about one percentage point of the GDP is a consequence of the exclusion of development outlays of autonomous bodies, like WAPDA and PTC, from the budget. The rest is attributable to a reduction in expenditure on other social, economic and community services.

Current expenditure continues to increase at a moderately rapid rate. Within current expenditure fastest growth has been in service-related expenditures and general administration while expenditure on defence continues to remain the largest claimant of public resources, accounting for over 41 percent of non-interest current expenditures (see Table 1.5). However, there has been a noticeable decline in share of defence in GDP in recent years.

TABLE 1.5
COMPOSITION OF NET OF INTEREST CURRENT EXPENDITURES
(Consolidated Federal and Provincial Governments)

Years	[RS IN BILLION]					[AS % OF GDP]				
	Total General Admin	Defence	Services	Subsidies	Others	General Admin	Defence	Services	Subsidies	Others
1980-81	2.9	15.3	5.1	2.4	6.2	1.1	5.6	1.8	0.9	2.2
1981-82	3.4	18.6	5.4	2.5	6.9	1.0	5.7	1.7	0.8	2.1
1982-83	4.2	23.2	7.4	2.8	9.0	1.2	6.4	2.0	0.8	2.5
1983-84	5.9	26.8	9.8	4.7	10.6	1.4	6.4	2.3	1.1	2.5
1984-85	6.6	31.9	10.5	5.4	13.0	1.4	6.7	2.2	1.1	2.8
1985-86	7.4	35.6	12.4	5.7	13.9	1.4	6.9	2.4	1.1	2.7
1986-87	10.4	41.3	15.4	5.8	19.3	1.8	7.2	2.7	1.0	3.4
1987-88	8.6	47.0	17.3	7.9	19.6	1.3	6.9	2.6	1.2	2.9
1988-89	10.2	51.0	19.3	13.3	21.2	1.3	6.6	2.5	1.7	2.7
1989-90	11.9	58.7	20.2	9.0	19.0	1.4	6.8	2.4	1.1	2.2
1990-91	13.5	64.6	28.1	10.7	28.7	1.3	6.3	2.7	1.0	2.8
1991-92	17.9	75.8	45.4	7.9	20.7	1.5	6.2	3.7	0.6	1.7
1992-93	20.3	87.5	54.6	7.3	24.0	1.5	6.5	4.1	0.5	1.8
1993-94	25.5	91.8	56.5	5.1	23.7	1.6	5.9	3.6	0.3	1.5
1994-95	32.6	100.2	70.8	6.5	34.5	1.7	5.4	3.8	0.3	1.8
ACGR %	18.9	14.4	20.7	7.4	13.0	3.2	-0.3	5.5	-7.5	-1.4
SOURCES:										
• Pakistan Economic Survey										
• SBP Annual Report										

Also, subsidies have largely been phased out, primarily as a consequence of the IMF conditionalities.

1.4 Prospects

It is clear that Pakistan cannot continuously carry fiscal deficits of a high magnitude, if the debt burden is to be kept within manageable limits. Continued efforts will have to be made to keep the primary budget deficit under check as has been done in the last two years. The strategy of primary budget deficit reduction needs, however, to be reviewed. As pointed out earlier, achievement of a fiscal balance by primarily targeting development expenditures is counter productive as growth objectives are eventually compromised. Also, there exist clear rigidities in current expenditures, arising from debt servicing and debt obligations. Therefore, the primary element in the strategy must be higher resource mobilisation through enhancements in the tax to GDP ratio.

Both federal and the provincial governments will have to increase the level of their fiscal effort by revising and rationalizing the existing tax rates, making the tax structure more progressive, broadening the various tax bases, (especially for income and sales taxes) reviewing the exemption policy and improving tax administration. Greater provision of economic and social services will have to be accompanied with enhanced cost recovery. Simultaneously, measures to achieve some economy in current expenditure will have to be implemented. These may include rationalisation of federal ministries, ban on employment other than project related, improved public debt management and economies in non-salary heads of the budget.

Chapter Two

BURDEN OF DEBT SERVICING

Persistence of a high and rising fiscal imbalance, largely financed by borrowings, has resulted in a heavy debt servicing burden on the public exchequer. The situation has been exacerbated by the fact the access to low cost debt has become increasingly difficult and the government has had to resort to expensive borrowing. Currently, debt servicing is the largest single expenditure item in the budget, accounting for 37 percent of total government expenditure. It thus seems that in the future government's ability to raise incremental borrowings is likely to be constrained by its capability to service debt. In this chapter we examine trend in debt servicing and quantify, using different measures, the burden of debt servicing.

2.1 Trend in Debt Servicing

Trend in debt servicing is given in table 2.1. Debt servicing has increased at an annual average rate of over 22 percent to the current level of Rs 160 billion. Out of this Rs 78 billion, equivalent to 48 percent of the total, is paid as interest on domestic debt. Repayment of external debt is the other big component, amounting to over Rs 59 billion.

Over the period 1980-81 to 1994-95, fastest growing component has been interest on domestic debt, which has increased at a rate of 25 percent per annum. Annual growth rate of interest on external debt has been 18 percent.

The wedge in the level and growth of interest payments on domestic and external debt is both a consequence of the underlying composition of debt and the respective interest rates. Access to concessional external borrowing has been increasingly constrained thereby resulting in a

heavier reliance on domestic debt sources. Also, as is highlighted in subsequent chapters, the interest rates on the two are substantially different, being higher on domestic debt.

TABLE 2.1
TREND IN DEBT SERVICING

(Rs in Billion)

Years	Interest on Domestic Debt	Interest on External Debt	Repayment of External Debt	Total External Debt Servicing	Total Domestic & External Debt Servicing
1980-81	3.4	2.3	3.6	5.9	9.3
1981-82	4.6	2.8	5.9	8.7	13.3
1982-83	6.5	4.3	8.7	13.0	19.5
1983-84	8.6	5.1	8.6	13.7	22.3
1984-85	10.2	5.9	9.0	14.9	25.1
1985-86	12.6	6.4	10.8	17.2	29.8
1986-87	15.9	7.4	11.8	19.2	35.1
1987-88	22.9	8.2	13.5	21.7	44.6
1988-89	28.3	9.4	18.3	27.7	56.0
1989-90	35.3	11.4	19.4	30.8	66.1
1990-91	35.2	13.0	23.5	36.5	71.7
1991-92	50.8	14.6	29.0	43.6	94.4
1992-93	64.4	15.9	29.1	45.0	109.4
1993-94	79.0	19.6	43.5	63.1	142.1
1994-95	77.7	23.2	59.3	82.5	160.2
ACGR %	25.0	17.9	22.2	20.7	22.5

SOURCE: Ministry of Finance, Government of Pakistan.

2.2 Measures of Debt Servicing Burden

Has the debt servicing become unsustainable in Pakistan? Different measures of the debt servicing burden are presented in table 2.2. Interest on domestic debt pre-empts about non-fourth of the total public sector (federal and provincial governments combined) revenues. The burden has been increasing over time as is indicated by a higher average burden for the 1990s compared to the 1980s. Interest on domestic and external debt accounts for about one-third of public sector current expenditures. In the 80s, interest payment was, on an average, about 20 percent of current expenditure. This proportion has increased to 29 percent in the 90s. Inclusive of repayment of external debt, debt servicing accounts for about 39 percent

TABLE 2.2
DIFFERENT MEASURES OF THE BURDEN OF DEBT SERVICING

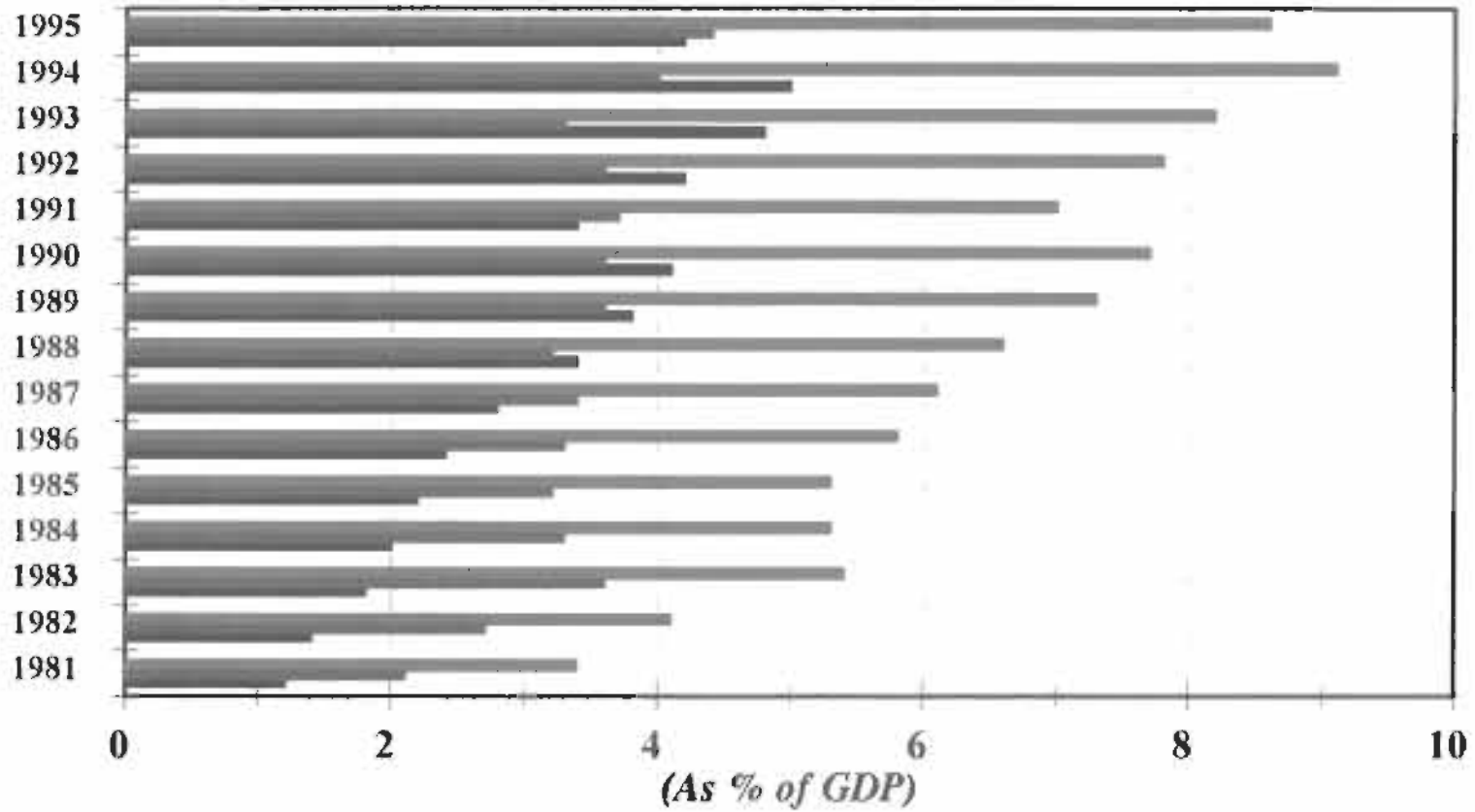
Years	Interest on Domestic Debt as % of Revenues	Total Interest Payment as % of Current Expenditure	Total Debt Servicing as % of Total Expenditure	Total Debt Servicing as % of GDP	External Debt Servicing as % of Export Earning
1980-81	7.2	15.1	14.6	3.4	20.4
1981-82	8.9	16.6	18.7	4.1	20.0
1982-83	11.0	18.7	22.4	5.4	23.5
1983-84	11.9	19.1	22.3	5.3	26.3
1984-85	13.2	19.2	21.5	5.3	31.5
1985-86	14.0	20.1	22.0	5.8	29.5
1986-87	15.3	20.1	23.0	6.1	29.9
1987-88	19.6	23.3	24.7	6.6	25.1
1988-89	20.3	24.6	27.8	7.3	24.1
1989-90	22.2	28.2	29.8	7.7	24.9
1990-91	21.5	24.6	27.5	7.0	21.5
1991-92	23.5	28.4	29.4	7.8	21.9
1992-93	26.9	29.5	31.4	8.2	24.2
1993-94	29.2	33.6	38.9	9.1	25.7
1994-95	24.3	29.1	37.4	8.6	25.1
ACGR %	9.1	4.8	6.9	6.9	1.5
Average 80s	14.4	20.5	22.7	5.7	25.5
Average 90s	25.1	29.0	32.9	8.1	23.7
Total Average	17.9	23.3	26.1	6.5	24.9

SOURCE: Derived.

of the total public expenditures (both current and development), and is about 9 percent of the GDP (see Chart Two). As such, the burden of debt servicing on the domestic economy is high and rapidly rising over time.

The high ratio of external debt servicing to exports illustrates the high incidence of debt servicing on the external sector. Currently, external debt servicing drains out about one-fourth of export earnings. Compared to this, the average value of this ratio for Asian and African countries at comparable level of development is about 23 percent. As such, viewed internationally Pakistan carries a somewhat higher than a normal burden of debt servicing. The increase in the burden has, in particular, been a consequence of the rapid increase in recent years in external debt repayment.

Chart Two
Trend in Debt Servicing Burden
(As % of GDP)



■ Domestic Debt Servicing ■ External Debt Servicing ■ Total Debt Servicing

In sum, the burden of debt servicing is high and rising rapidly. The high incidence is pre-empting scarce public resources and suffocating public sector development efforts. It also places a high burden on the current account and drains away a substantial proportion of export earnings.

Chapter Three

MACROECONOMIC CONSEQUENCES OF BUDGET DEFICIT AND PUBLIC DEBT

There is a growing recognition in Pakistan of the macroeconomic consequences of high levels of public debt resulting from the cumulative impact of large and growing budget deficits and the concomitant needs for borrowing. The heavy burden of debt servicing on the budget (discussed in the previous chapter) has frequently been highlighted by government, media and concerned citizens. In recent years, it has emerged as the biggest claimant of public resources, even more than defence expenditure and outlays on development. The resulting resource squeeze has implied a cut back in subsidies, expenditures on social development and economic infrastructure, etc (as described in Chapter 1).

The objective of this chapter is to analyse the consequences of public debt and budget deficits in a proper macro economic framework. We describe first the 'debt trap' whereby a country like Pakistan finds itself in a situation of explosive debt dynamics in terms of a vicious circle in which the debt and budget deficits feed into each other.

3.1 *The Debt Trap*

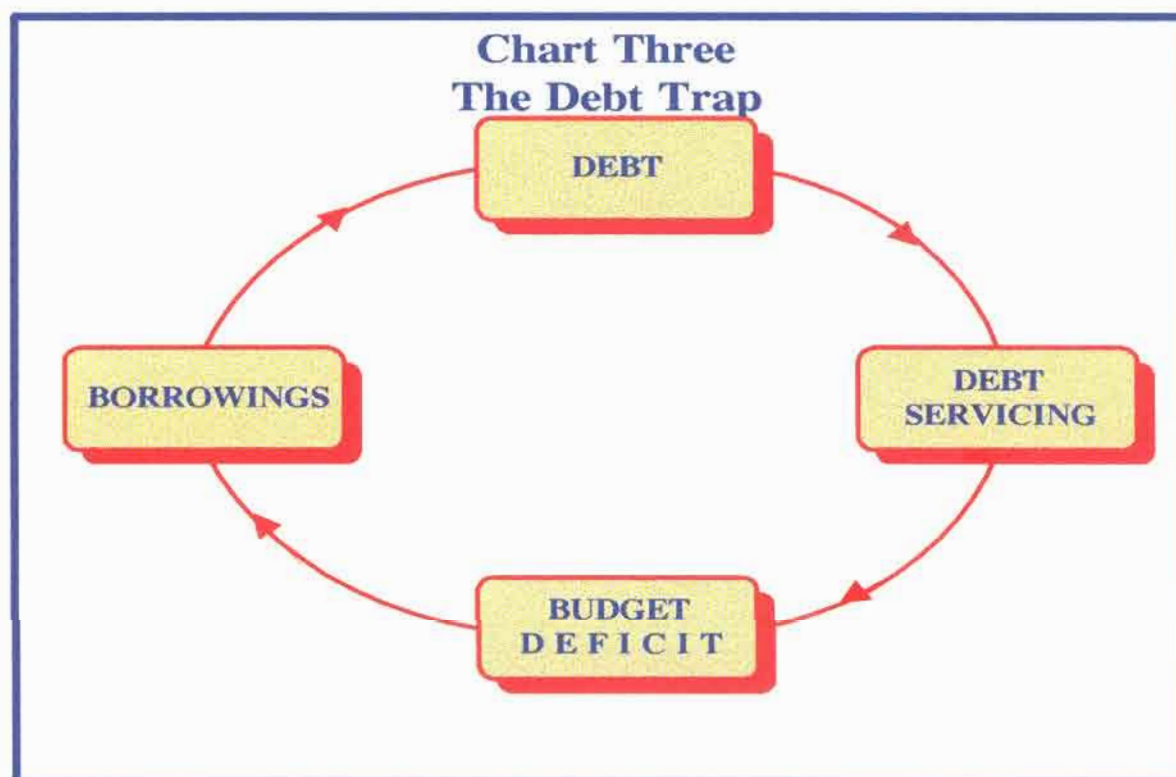
In order to determine if the country is in a debt trap we set up the basic accounting identity for the budget deficit as follows:

$$\text{Budget Deficit} = \text{Primary Budget Surplus/Deficit} + \text{Interest Payments on Outstanding Public Debt} \quad [1]$$

The primary budget surplus or deficit is the excess or shortfall in revenues (*tax + non-tax*) of the government (*federal and provincial governments combined*) over expenditures (*current + development*), excluding interest payments, as defined earlier. In the event that there is a primary budget surplus then this surplus can be used to defray some of the interest payments on

outstanding debt and consequently the increase in debt is less than the interest payments. However, if there is a primary budget deficit then all interest payments translate one-to-one into an increase in public debt. In such a situation if interest payments are high as in Pakistan, at over 5 percent of the GDP, then the annual budget deficit remains high, exerting a strong upward pressure on the outstanding level of public debt.

In this way, the country funds itself in a 'debt trap', as shown in Chart three, whereby a high existing level of outstanding debt implies a high level of interest payments which lead to a large



budget deficit that has to be financed by correspondingly large borrowings which add to the debt and so on. The result is explosive growth in debt and budget deficits which creates fundamental macro economic imbalances and has a number of unfavourable consequences identified below. The only way to break out of this trap is to generate significant primary budget surpluses either by substantially raising the level of resource mobilisation through the tax system or by economy

generally in non-interest expenditures (as described in Chapter 1). There is some evidence that such attempts have begun in Pakistan in recent years.

3.2 'Crowding-Out' of the Private Sector

In order to understand the 'crowding-out' phenomenon we take recourse to the basic Keynesian national income accounting identity, which is:

$$\text{Investment} = \text{Savings} + \text{Current Account Deficit}$$

This can be expressed as

$$\text{Public Investment} + \text{Private Investment} = \text{Public Savings} + \text{Private Savings} + \text{Current Account Deficit}$$

or

$$(\text{Public Investment} - \text{Public Savings}) = (\text{Private Savings} - \text{Private Investment}) + \text{Current Account Deficit}$$

which transforms to

$$\text{Budget Deficit} = (\text{Private Savings} - \text{Private Investment}) + \text{Current Account Deficit} \quad [2]$$

The budget deficit in this case is macro in character and relates to the overall deficit of the consolidated public sector, including public enterprises. Equation (2) can be used to highlight the potential 'crowding-out' problem. For example, if the budget deficit is larger then this can be financed either by an increase in the surplus of the private sector, caused either by a rise in private savings or a fall in private investment or by an increase in the current account deficit which implies a strain on the balance of payments position of the country and a possible drain on the foreign exchange reserves in the event of constraints on external borrowing. If bulk of the adjustment to a larger budget deficit falls on private investment then this tantamounts to a 'crowding-out' of the private sector. The mechanics whereby this happens is the rise in interest rates due to higher government borrowings which makes private investment less attractive.

However, equation (2) indicates that a rise in the budget deficit need not necessarily lead to crowding out if there is a corresponding increase in the current account deficit or somehow private savings increase. The former response is, in fact, frequently observed. In many countries a strong relationship has been observed between budget deficits and current account deficits. We discuss the relationship in the Pakistani context below.

An interesting argument, frequently referred to as the Ricardian Equivalence Hypothesis, has been put forward to explain why private savings may actually increase in response to a larger budget deficit. If this hypothesis holds then budget deficits do not affect national savings, interest rates or balance of payments and in this respect the level of public debt does not matter. The startling policy implications are that governments need not worry about incurring additional debt because this does not have any adverse macroeconomic implications. The theoretical underpinning of this argument is the life-cycle hypothesis which asserts that peoples' consumption decisions are linked to permanent income and not to current income. Accordingly, it is argued that a far-seeing consumer will recognise that government debt generated through deficit spending will eventually be paid off by increased taxes which will reduce his permanent income. Therefore, he will cut back on his current consumption and increase his savings.

This ingenious argument has generally not found much empirical support. Haque and Montiel (1987) reject Ricardian equivalence for fifteen out of a sample of sixteen developing countries, including Pakistan. More recently, Kazmi [1994] has tested the Ricardian equivalence hypothesis in the Pakistani setting and found no conclusive evidence. Ahmed (1995) has empirically demonstrated that most of the adjustment to a higher fiscal deficit in Pakistan has come via a rise in the current account deficit and not via an increase in private savings. For

the period, 1971-72 to 1991-92, he finds that a one percentage point increase in the budget deficit in relation to the GDP leads to almost 0.8 percentage point increase in the current account deficit. Therefore, the maximum possible impact on private investment is 0.2 percentage points. As such, the crowding out of the private sector in Pakistan due to budget deficits is not so pronounced.

3.3 *Financing of the Budget Deficit*

The basic financing equation is

$$\text{Budget Deficit} = \text{Money Printing} + \text{Foreign Reserve Use} + \text{Foreign Borrowing} + \text{Domestic Borrowing} \quad [3]$$

The terms on the right hand side can be grouped in different ways. For instance, the parentheses around the foreign components emphasise the link between the budget deficit and the current account. Alternatively, parentheses could be placed around (money printing + foreign reserve use) which is equal to the creation of credit by the Central Bank; this emphasises that domestic credit creation is an alternative to borrowing.

Fisher and Easterly (1990) indicate that as a useful first approximation each form of financing in equation (3) is associated with a major macroeconomic imbalance. Money printing is associated with inflation, foreign reserve use is associated with the onset of an exchange crisis; foreign borrowing is associated with an external debt crisis; domestic borrowing is associated with higher real interest rates and possibly explosive debt dynamics as described earlier.

It is important to realise that persistent budget deficits will eventually lead to more inflation. In the short run there may not be a strong correlation between the size of the budget deficit and the rate of inflation. For example, if budget deficit reduction is brought about through increases in

administered prices of goods and services provided by government then there may even be a negative correlation. It is important to remember, however, that budget deficits will eventually be monetised as people shy away from investing in government paper in the face of high levels of public debt. This will create strong inflationary pressures on the economy and the possibility of hyper inflation.

PART TWO
LEVEL AND
COMPOSITION OF DEBT

Chapter Four

THE SIZE OF PUBLIC DEBT OF PAKISTAN

The quantum of debt servicing annually depends essentially on the stock of outstanding debt and the average interest cost of this debt. We first determine in this Chapter the size of public debt of Pakistan, both domestic and external, during the period, 1980-81 to 1994-95. This is compared with the GDP of the country to get an assessment of the magnitude of the debt burden. In addition, we make international comparisons of the debt burden to determine if the level of indebtedness is higher or lower in Pakistan.

4.1 Estimates of Debt

The estimates of domestic debt are prepared by the Finance Division, GOP and published annually in the Pakistan Economic Survey. Domestic debt is categorised into three types - permanent debt, floating debt and unfunded debt (see Chapter 5). Outstanding domestic debt figures from 1980-81 to 1994-95 are given in Table 4.1. In its latest Annual Report, the State Bank of Pakistan has also given its estimates of public debt. Domestic debt estimates correspond very closely to those of the Finance Division. Minor differences are observed in earlier years due to exclusion by SBP of flow of funds into schemes like postal life insurance.

Estimates of external debt which is outstanding are generated by the Economic Affairs Division, GOP. SBP has also published its estimates recently in the 1994-95 Annual Report and differ somewhat from those of the EAD, but are available only from 1985-86 onwards. As such EAD estimates are used for earlier years and the SBP figures from 1985-86 onwards. According to the SBP, estimates of outstanding external debt include long term, medium term and short term debt. The time series of outstanding external debt (converted into rupees) is also given in table 4.1.

TABLE 4.1
ESTIMATES OF DOMESTIC, EXTERNAL AND
PUBLIC DEBT OF PAKISTAN

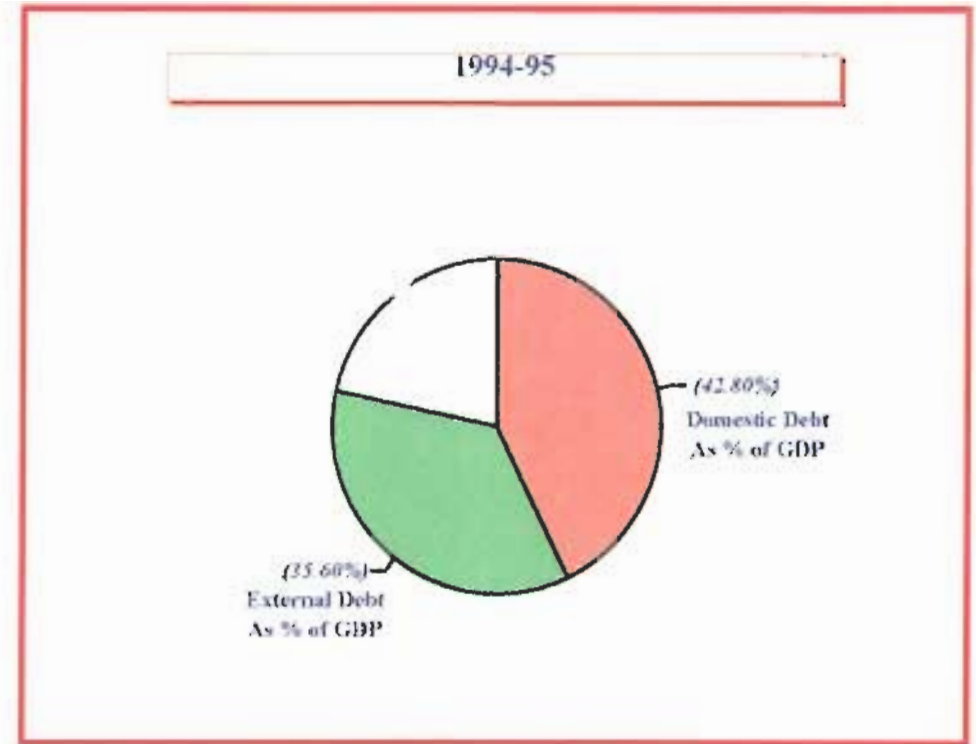
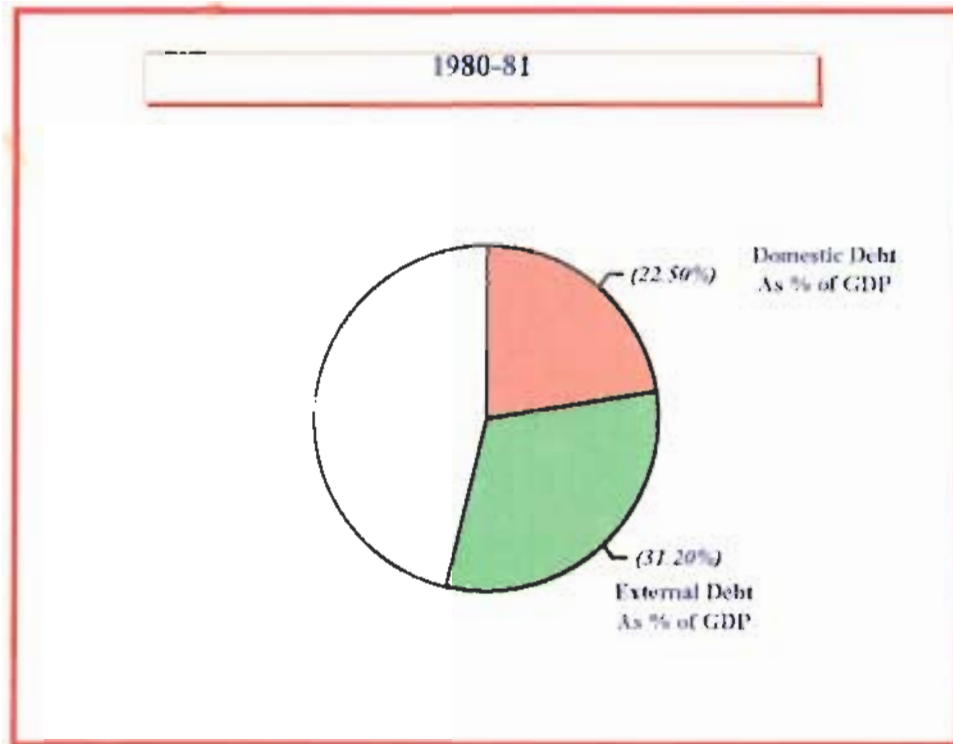
Years	(RS IN BILLION)			(AS % OF GDP)		
	Domestic Debt	External Debt	Total Public Debt	Domestic Debt	External Debt	Total Public Debt
1980-81	62.5	86.8	149.8	22.5	31.2	53.7
1981-82	79.1	107.4	186.5	24.4	33.1	57.5
1982-83	101.7	122.7	224.4	27.9	33.7	61.6
1983-84	122.7	132.5	255.2	29.2	31.6	60.8
1984-85	149.9	155.8	305.7	31.7	33.0	64.7
1985-86	203.1	186.8	389.9	39.5	36.3	75.8
1986-87	248.5	208.6	457.1	43.4	36.4	79.8
1987-88	290.1	232.4	522.5	43.0	34.4	77.4
1988-89	333.2	299.4	632.6	43.3	38.9	82.9
1989-90	381.3	328.9	710.2	44.6	38.4	83.0
1990-91	448.2	376.0	824.2	43.9	36.8	80.7
1991-92	525.1	436.3	961.4	43.3	36.0	79.3
1992-93	608.0	517.2	1125.2	45.3	38.6	83.9
1993-94	700.1	622.1	1322.2	44.9	39.8	84.7
1994-95	805.0	668.4	1473.4	42.8	35.6	78.4

SOURCES:
• Pakistan Economic Survey.
• Annual Report, SBP.
• Ministry of Finance. Figures for 1993-94 and 1994-95 do not tally with PES.

According to table 4.1, the outstanding public debt stood at Rs 1473 billion at the end of the last financial year, equivalent to 78 percent of the GDP, with Rs 805 billion as domestic debt and Rs 668 billion as external debt. During the 90s, public debt has increased annually on average by about Rs 150 billion. A number of trends are revealed by the table as follows:

- (i) External debt has grown less rapidly than domestic debt. In 1980-81, external debt was over 31 percent of the GDP and domestic debt, less than 23 percent. In 1985-86, the latter exceeded the external debt/GDP ratio by over three percentage points (see Chart Four).

Chart Four
Domestic and External Debt Burden
(As % of GDP)



- (ii) The domestic debt to GDP ratio increased very rapidly during the decade of the 80s, especially upto 1986-87. From there onwards, the ratio has tended to remain, more or less, constant. The external debt to GDP ratio continued to increase throughout the decade of the 80s, albeit at a more moderate rate. The overall public debt to GDP ratio mirrors these trends. It increased rapidly from about 54 percent in 1980-81 to 83 percent by 1989-90. The growth has been largely arrested since then, with a significant decline last year of almost 6 percentage points. This highlights some success in debt management in recent years.

TABLE 4.2
SIZE OF THE DOMESTIC AND EXTERNAL DEBT
IN A SAMPLE OF DEVELOPING COUNTRIES

(% of GDP)

Country	1988			1993		
	Domestic Debt	External Debt	Total Public Debt	Domestic Debt	External Debt	Total Public Debt
Ethiopia	28.5	24.6	53.1	35.1 ^a	33.1 ^a	68.2 ^a
India	46.2	6.5	52.7	46.7	5.9	52.6
Indonesia	2.3	54.1	56.4	1.5	36.0	37.0
Korea	5.7	4.5	10.2	4.7	2.1	6.8
Malaysia	69.4	28.5	97.9	46.9	11.9	58.8
Morocco	28.3	86.0	114.3	27.4 ^b	55.8 ^b	83.2 ^b
Nepal	14.4	27.1	41.5	14.1	36.5	50.6
Nigeria	32.4	92.2	124.6	36.2	90.8	127.0
Pakistan	43.0	34.4	77.4	45.3 ^c	38.6	83.9
Phillipines	32.6	20.7	53.3	43.3	23.7	67.0
Sierra Leone	18.5	53.9	72.4	6.1	134.9	141.0
Sri Lanka	44.4	56.8	101.2	40.9	57.6	98.5
Thailand	20.5	8.5	29.0	5.2	3.3	8.5
Tunisia	12.2	43.2	55.4	16.3	36.9	53.2
Turkey	22.6	23.4	46.0	18.4	16.1	34.5
Uruguay	9.0	23.0	32.0	5.7	19.9	25.6
Zaire	8.1	116.4	124.5	16.4 ^a	103.9 ^a	120.3 ^a
AVERAGE	25.8	41.6	67.4	24.1	41.6	65.7

^a for 1991; ^b for 1992; ^c for 1990
SOURCE: International Financial Statistics, IMF.

4.2 International Comparisons

Data on levels of domestic and external debt in different countries have been obtained from the publication, *International Financial Statistics*, of the IMF. Table 4.2 gives estimates of

debt to GDP ratios for 17 developing countries in different parts of the world for the years, 1988 and 1993. A number of conclusions also emerge from this table. First, the public debt to GDP ratio appears to be relatively high in Pakistan. In 1993, this ratio was 84 percent in Pakistan as compared to 53 percent in India, 67 percent in Phillipines, 35 percent in Turkey, 51 percent in Nepal and 99 percent in Sri Lanka. Among the 17 countries, Pakistan ranks fifth in terms of the level of indebtedness (see Chart Five).

Second, domestic debt levels, rather than external debt, are relatively high in Pakistan. In the domestic debt to GDP ratio Pakistan ranks third while in the external debt/GDP ratio it has a ranking of sixth. Third, between 1988 to 1993 there appears to have been a decline in the public debt/GDP in eleven countries and a rise in a six countries, including Pakistan.

4.3 Alternative Estimates of External Debt

World Bank gives estimates of the outstanding level of external indebtedness of its member countries in the publication, World Tables. These estimates include all external obligations of both public and private debtors with maturity of more than one year. It comprises both public and publicly guaranteed debt and non-guaranteed debt.

As can be seen from table 4.3, these estimates diverge significantly from those of the Economic Affairs division or the State Bank of Pakistan. In 1987-88, the difference was at its peak with the World Bank estimates being higher by over 29 percent. In 1993-94, the absolute magnitude of the difference was over \$ 2.5 billion.

What explains the differences in external debt estimates? One likely explanation is the difference in coverage among these estimates, especially relating to the extent to which short term commercial debt is included in these estimates. According to table 4.4, the World Bank

Chart Five
International Comparison of Domestic, External and Public debt, 1993
(As % of GDP)

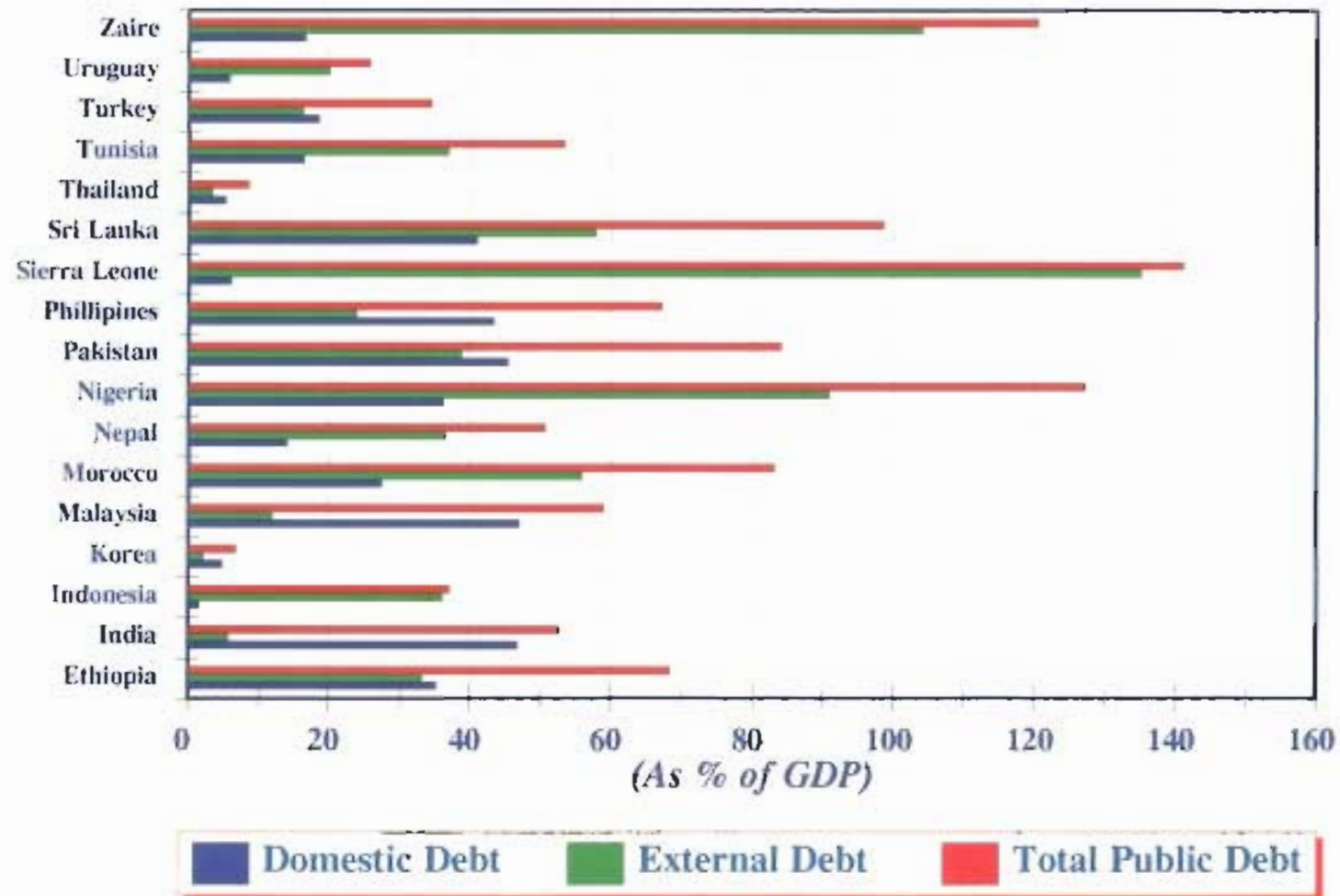


TABLE 4.3
ESTIMATES OF OUTSTANDING EXTERNAL DEBT
FROM DIFFERENT SOURCES

(in \$ Million)

Years	Economic Affairs Division*	State Bank of Pakistan**	World Bank***	Difference in Estimates***	Percentage Difference
1980-81	8765	N.A	9936	1171	13.4
1981-82	8799	N.A	10532	1733	19.7
1982-83	9312	N.A	11633	2321	24.9
1983-84	9469	N.A	11927	2458	26.0
1984-85	9732	N.A	12123	2391	24.6
1985-86	11108	11108	13355	2247	20.2
1986-87	12023	12023	14899	2876	23.9
1987-88	12913	12913	16704	3791	29.4
1988-89	14190	14190	16961	2771	19.5
1989-90	15094	15247	18305	3058	20.0
1990-91	15471	16573	20663	4090	24.7
1991-92	17361	18384	23046	4662	25.4
1992-93	19044	20814	24072	3258	15.7
1993-94	20322	23497	26050	2553	10.9
1994-95	21555	24437	N.A.	—	—

* as of the end of the financial year
 ** as of the end of the calendar year
 *** Between World Bank and EAD for 1980-81 to 1984-85; Between World Bank and SBP for 1985-86 to 1994-95.

SOURCES:

- Pakistan Economic Survey
- State Bank of Pakistan, Annual Report
- World Bank, World Tables

estimates do include a higher component of short/medium term debt of about \$ 1.2 billion. However, these estimates are larger even in the case of long term debt. Also, World Bank estimates include private debt, but this is very small in the case of Pakistan. It is essential, therefore, that attempt is made by the EAD and the SBP to reconcile their estimates of external debt with those of the World Bank. The coverage must be comprehensive enough to cover all debt which is serviced through the federal budget and interest plus debt repayments of which are included in the debt servicing figure mentioned in the budget documents.

TABLE 4.4
COMPARISON OF LONG TERM AND SHORT/MEDIUM
ESTIMATES OF EXTERNAL DEBT BY WORLD BANK AND
STATE BANK OF PAKISTAN

(\$ Million)

Source	Long Term	Short/Medium Term	Total
1990-91			
World Bank*	17475	3188	20663
State Bank of Pakistan**	15781	792	16573
Difference	<u>1694</u>	<u>2396</u>	<u>4090</u>
1991-92			
World Bank	18889	4157	23046
State Bank of Pakistan	16562	1821	18383
Difference	<u>2327</u>	<u>2336</u>	<u>4663</u>
1992-93			
World Bank	19678	4394	24072
State Bank of Pakistan	18507	2304	20810
Difference	<u>1171</u>	<u>2090</u>	<u>3262</u>
1993-94			
World Bank	21551	4500	26050
State Bank of Pakistan	20216	3282	23498
Difference	<u>1335</u>	<u>1218</u>	<u>2552</u>
* At end of calendar year			
** At end of fiscal year			
SOURCES:			
• Annual Report, SBP			
• World Bank, World Tables.			

A comparison of different estimates of external debt of Pakistan for the period 1980-81 to 1992-93 is given in table 4.5. Estimates of the external debt/GDP ratio by the World Bank are substantially higher. For example, the World Bank estimates this ratio at over 50 percent in 1992-93 whereas the SBP estimate is 39 percent. If the former estimates are accepted then the total public debt to GDP ratio of Pakistan was 96 percent in 1992-93, implying a much higher debt burden.

4.4 Other Approaches to Estimation of Debt Burden

We have indicated above that according to one set of estimates the total public debt has by now approached the total GDP of Pakistan. This indicates that the overall debt burden is very large and explains the high debt servicing/GDP ratio. It has, however, been argued that

TABLE 4.5
ALTERNATIVE ESTIMATES OF EXTERNAL DEBT
TO GDP RATIO OF PAKISTAN

Years	(Rs in Billion)		(% of GDP)	
	EAD/SBP Estimate	World Bank Estimate*	EAD/SBP Estimate	World Bank Estimate
1980-81	86.8	101.4	31.2	36.4
1981-82	107.4	135.3	33.2	41.7
1982-83	122.7	155.2	33.7	42.6
1983-84	132.5	168.2	31.6	40.1
1984-85	155.8	203.9	33.0	43.2
1985-86	186.8	237.7	36.3	46.2
1986-87	208.6	274.9	36.4	48.0
1987-88	232.4	301.0	34.4	44.6
1988-89	299.4	373.0	28.9	48.5
1989-90	328.9	427.2	38.4	49.9
1990-91	376.0	527.6	36.8	51.7
1991-92	436.3	585.3	36.0	48.3
1992-93**	517.2	680.3	38.6	50.7

* World Bank estimates are as of the end of calendar year. These have been converted into end-of-financial-year estimates by taking two year moving averages

** World Bank estimates were available only upto the end of 1993

SOURCE: Derived

the gross outstanding public debt to GDP ratio is not a 'true' measure of the debt burden. For this purpose, it is essential to determine the uses of this debt and the ownership profile of public debt. Buiter and Patel [1992] have analysed the problem of debt, deficits and inflation in India. They argue that to arrive at a correct measure of the magnitude of public debt liabilities two adjustments need to be made. First, foreign exchange reserves must be netted out from external debt, because the former represent assets which can be used to retire part of the debt liability. Second, domestic debt should include only private sector holdings of government debt created by national and state governments. Intra-public sector assets and liabilities must be netted out to arrive at the correct estimate of the effective burden. Based on this consideration, Ahmed [1995] reduces domestic debt by the extent of government

obligations to the State Bank of Pakistan because this is simply the counterpart of 'seignorage' (see Chapter 12).

We have also made the above adjustments to arrive at a perhaps more accurate estimate of the effective debt burden in Pakistan. Foreign exchange reserves have been excluded from external debt and debt held by SBP has been netted out from domestic debt. The resulting estimates are presented in table 4.6 and are compared with our earlier estimates. The

TABLE 4.6
ESTIMATES OF DEBT BURDEN OF PAKISTAN

(Rs in Billion)

Years	Domestic Debt	Domestic Debt (excluding Debt with SBP)	External Debt*	External Debt (Excluding F.E. Reserves)	PUBLIC DEBT TO GDP (%)		
					Overall	Effective	Difference
1980-81	62.5	36.7	86.8	68.3	53.7	37.8	15.9
1981-82	79.1	44.3	107.4	89.6	57.5	41.3	16.2
1982-83	101.7	74.6	122.7	86.4	61.6	44.2	17.4
1983-84	122.7	87.1	132.5	97.7	60.8	43.9	16.9
1984-85	149.9	95.2	155.8	136.8	64.7	49.2	15.5
1985-86	203.1	143.3	186.8	159.2	75.8	58.8	17.0
1986-87	248.5	192.8	208.6	177.0	79.8	64.6	15.2
1987-88	290.1	208.1	232.4	208.7	77.4	61.7	15.7
1988-89	333.2	243.2	299.4	273.4	82.9	67.1	15.8
1989-90	381.3	270.5	328.9	297.1	83.0	66.3	16.7
1990-91	448.2	328.4	376.0	342.5	80.7	65.8	14.9
1991-92	525.1	366.7	436.3	391.6	79.3	62.6	16.7
1992-93	608.0	424.6	517.2	480.0	83.9	67.4	16.5
1993-94	700.1	528.7	622.1	519.6	84.7	67.0	17.7
1994-95	805.0	596.0**	668.4	577.0	78.0	62.4	15.6

* According to SBP/EAD
** Estimated.

SOURCES:

- Pakistan Economic Survey
- Annual Reports, SBP

effective public debt/GDP ratio, as a measure of the debt burden, is about 62 percent in 1994-95 as compared to our earlier estimate of 78 percent which rises to over 95 percent if we accept the World Bank estimates of outstanding external debt of Pakistan. The absolute difference in public debt estimates for 1994-95 is about Rs 291 billion, about Rs 200 billion

due to debt held by SBP and the remainder, Rs 91 billion, representing the value of foreign exchange reserves. It is interesting to note that the pattern of evolution of the debt burden is similar to the that described earlier, with much of the increase taking place during the decade of the 80s.

Chapter Five

STRUCTURE OF PUBLIC DEBT

Debt in Pakistan is raised in a number of ways. Over 54 percent of the total outstanding debt has been raised within the country while the remaining has been obtained internationally. Within the country, government has access to a variety of options for borrowing. Currently, there exist almost fifteen debt instruments domestically. In this chapter, we examine the level and composition of public debt in Pakistan. The analysis is important because different debt options have different underlying terms and conditions. For example, some forms of debt may be more expensive than others or some may have to be repaid/rolled over earlier than others. This has implications for debt servicing obligations. We first describe the characteristics of domestic debt and then external debt.

5.1 Composition of Domestic Debt

Government classifies domestic debt into three categories: permanent, floating and unfunded. Table 5.1 gives the level and composition of outstanding domestic debt in Pakistan. Currently, out of the total of Rs 805 billion of outstanding debt, the highest amount of Rs 301 billion, is of floating debt, followed by permanent debt of Rs 288 billion. However, the fastest increase over the last decade or so has been in unfunded debt, of about 24 percent per annum. The largest component of debt, the floating debt, shows the least buoyancy, increasing at a rate of less than 18 percent.

The structure of domestic debt has changed significantly over time (see Chart Six). In the early 80s, over 49 percent of the total was floating debt. Its share has decreased to 37 percent by 1994-95. Unfunded debt has increased in share from 17 percent in 1980-81 to the current level of 27 percent. Permanent debt continues to account for, more or less, one-

Chart Six
Composition of Domestic Debt

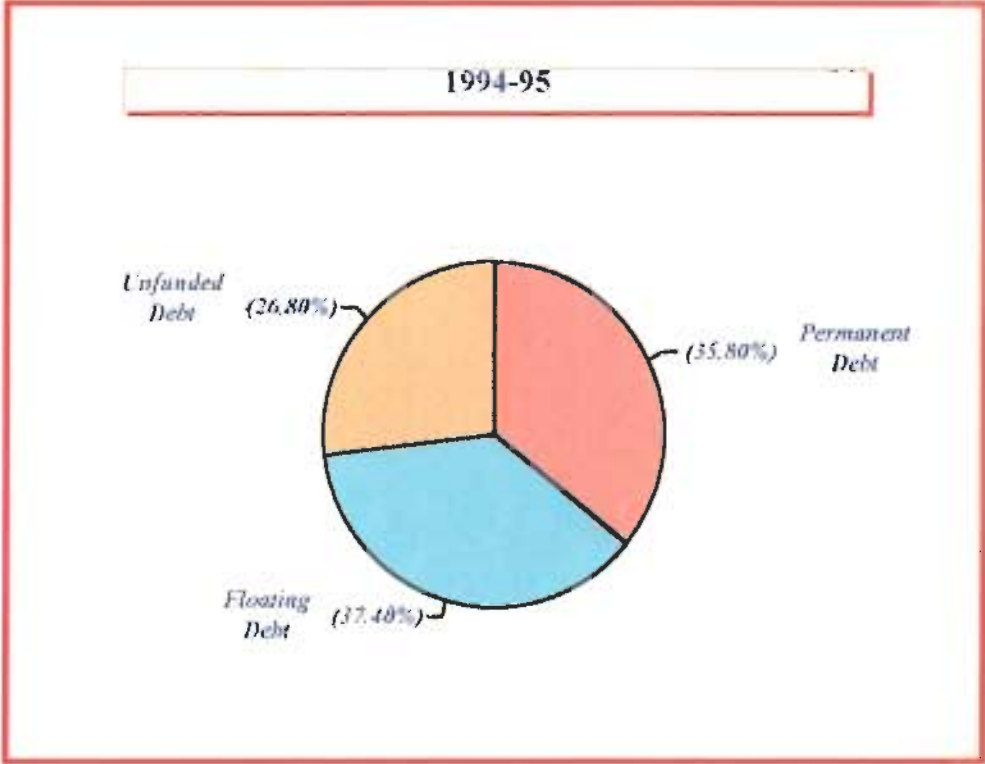
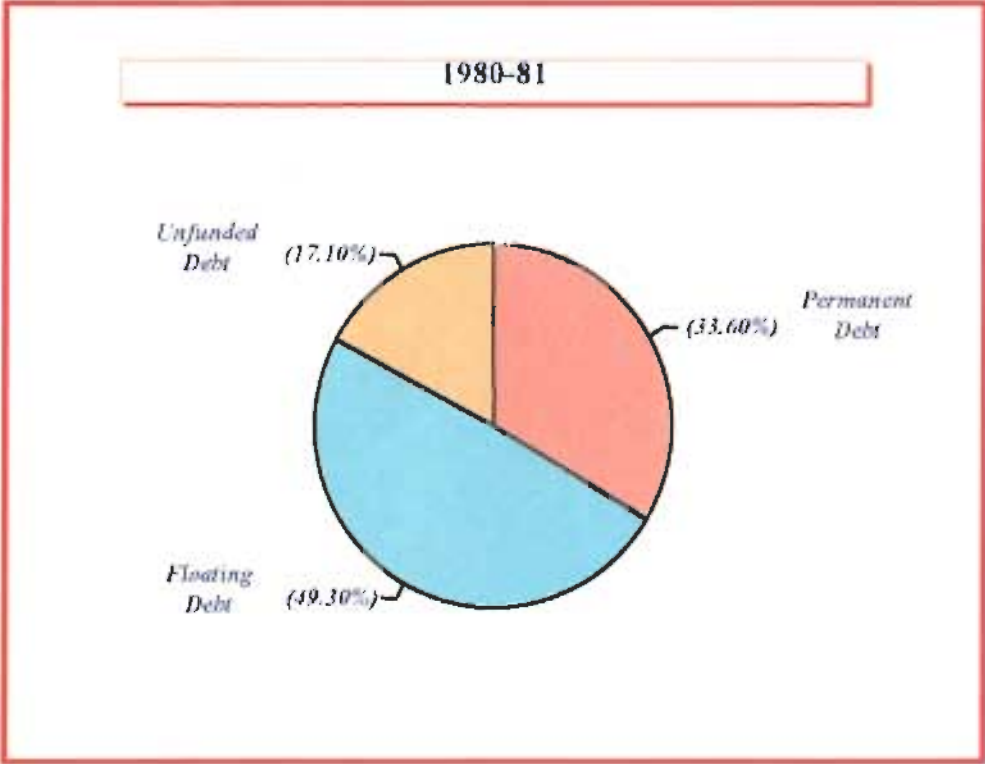


TABLE 5.1
LEVEL AND COMPOSITION
OF OUTSTANDING DOMESTIC DEBT

(Rs in Billion)

Year (end June)	Permanent Debt	Floating Debt	Unfunded Debt	Total Domestic Debt
1980-81	21.0	30.8	10.7	62.5
1981-82	24.8	40.3	14.0	79.1
1982-83	31.8	48.4	21.6	101.7
1983-84	36.0	56.9	29.7	122.7
1984-85	36.8	72.8	40.3	149.9
1985-86	58.2	87.3	57.6	203.1
1986-87	68.6	104.9	75.0	248.5
1987-88	63.8	127.5	98.8	290.1
1988-89	78.8	135.3	119.1	333.2
1989-90	98.7	145.0	137.6	381.3
1990-91	157.0	150.9	140.2	448.2
1991-92	185.1	197.3	142.8	525.1
1992-93	245.5	215.8	146.7	608.0
1993-94	264.2	225.7	180.2	700.1
1994-95	288.4	301.1	215.7	805.2
ACGR (%)	20.6	17.7	23.9	20.0
SHARES (%)				
1980-81	33.6	49.3	17.1	100.0
1984-85	24.7	49.0	26.3	100.0
1990-91	35.6	34.3	30.1	100.0
1994-95	35.8	37.4	26.8	100.0
SOURCE: Pakistan Economic Survey				

third of the total. An important factor contributing to changes in the structure of domestic debt has been the financial sector reforms introduced in 1990-91. These reforms abolished the captive market for government securities thereby limiting access to borrowing and increased the interest cost of floating debt. Consequently, the government has had to more aggressively explore other avenues for mobilising funds, in particular, it has increased resort to unfunded and permanent debt. These changes have not only resulted in an increase in the effective interest costs of debt but also an increase in the average maturity period of domestic debt. Unlike floating debt, unfunded and permanent debt instruments generally are in the nature of medium and long run debt. Arise in maturity period potentially reduces borrowing

requirements for debt roll-over and, therefore, reduces volatility in the capital market and fluctuation in interest rates.

For an in-depth understanding of the structural changes we turn next to the composition of permanent, unfunded and floating debt.

TABLE 5.2
LEVEL AND COMPOSITION OF PERMANENT DEBT

[Rs in Billion]

Years	Market Loans	Bearer National Fund Bonds	Special National Fund Bonds	Federal Investment Bonds	FEBCs	Prize Bonds	Other	Total
1980-81	18.7	—	—	—	—	1.6	0.7	21.0
1981-82	19.7	—	—	—	—	3.5	1.6	24.8
1982-83	20.2	—	—	—	—	9.3	2.3	31.8
1983-84	19.5	—	—	—	—	13.5	3.0	36.0
1984-85	19.4	—	—	—	—	13.9	3.5	36.8
1985-86	18.6	1.5	15.2	—	2.4	16.3	4.2	58.2
1986-87	17.8	7.1	15.2	—	3.5	20.1	4.9	68.6
1987-88	21.7	9.7	—	—	5.5	20.1	5.8	63.8
1988-89	21.4	18.1	—	—	5.9	22.5	10.8	78.7
1989-90	21.3	32.5	—	—	7.7	24.8	12.3	98.6
1990-91	21.0	43.9	—	38.7	9.3	27.9	16.0	156.8
1991-92	21.1	23.7	—	83.4	8.5	29.7	18.7	185.1
1992-93	20.7	22.3	—	137.0	11.0	34.6	19.9	245.5
1993-94	20.7	22.3	—	149.7	11.8	39.3	20.4	264.2
1994-95	19.9	20.7	—	168.8	13.5	44.7	20.8	288.4
ACGR (%)	0.4	33.9	—	44.5	21.2	26.8	27.4	20.6
SHARES (%)								
1980-81	89.0	—	—	—	—	7.6	3.3	100.0
1984-85	52.7	—	—	—	—	37.8	9.5	100.0
1990-91	13.3	28.0	—	24.7	5.9	17.8	7.8	100.0
1994-95	6.9	7.2	—	58.5	4.7	15.5	7.2	100.0
SOURCES:								
• Pakistan Economic Survey								
• SBP Annual Report								

5.2 Structure of Permanent Debt

Table 5.2 gives the composition of permanent debt. Permanent debt includes long term market loans, bearer national fund bonds (BNFB), federal investment bonds (FIBs), foreign exchange bearer certificates (FEBCs), prize bonds and other instruments. In the early 80s flotation of market loans was the key mechanism for raising permanent debt. Prize bonds existed but accounted for a nominal share. Over the years, new instruments have been introduced like BNFBs, SNFBs and FEBCs changing the structure of permanent debt.

Currently, FIBs, which have boomed since their introduction in 1990-91, generate bulk of the permanent debt.

FIBs are of three different maturity periods viz. 3 years, 5 years and 10 years, carrying profit at the rate of 13 per cent, 14 per cent and 15 per cent respectively payable biannually. The issue price is governed by auction. Bonds can be purchased by individuals, institutions and corporate bodies including banks, irrespective of their residential status. The minimum limit on purchase is Rs.1000/-. Individuals and institutional investors may approach the primary dealers, viz, Central Directorate of National Savings, banks and DFIs at negotiable market rates. There is no compulsory deduction of Zakat at source. Profit is subject to income tax, deductible at source except for charitable trusts and provident funds. Key characteristics of major public debt instruments is given in table 5.3.

The significance of prize bonds has increased over time. This is a bearer type short term investment available in the denomination of Rs.50, Rs.100, Rs.500, Rs.1000, Rs.10,000 and Rs.25,000 respectively. The last two were introduced in December and November 1995 respectively. No fixed return is paid on investment but prizes are drawn and paid periodically. The prize draws are held every alternate month for Rs.100 prize bond and quarterly in other cases. Prize money of Rs.25,000 and above is subject to 7.5 per cent withholding tax at source.

BNFBs and FEBCs contribute a small share to permanent debt. Primarily introduced to launder black money, increase in investment in FEBCs appears to have somewhat moderated in the last few years, while issue of new BNFBs has ceased and only roll-over is permitted.

TABLE 5.3
CHARACTERISTICS OF KEY PUBLIC DEBT INSTRUMENTS

PARTICULAR	FIBs	Prize Bonds	D.S.C	S.S.C(R)	S.S.S(B)	Savings Account	Mahana Amdani A/C	R.I. Certificates
Eligible Holders	All	All except banks and DFIs	All except banks and DFIs	All except banks and DFIs	All except banks and DFIs	All except banks and DFIs	Individuals only	All except banks, Fis, and DFIs
Rate of Return	13% for 3 years 14% for 5 years 15% for 10 years	—	16% for 10 years	15% for first two years 17% for third year	12% for first two years 14% for third year	11% p.a.	monthly return same as monthly contribution for five years	14.65% p.a.
Rate of Withholding Tax	10%*	7.5% on prize money amounting to Rs.25,000 and above	—	10% to all except individuals and local authorities	2% on principal amount	—	—	10%
Zakat Deduction	—	—	Deducted at the time of encashment on payable value	On Principal when encashed	—	Deducted at source every year	Deducted at the time of encashment	—
Maturity Period	3,5 and 10 years	Minimum 2 months holding period for eligibility to prize draw	10 Years	3 Years	3 Years	—	5 Years	5 Years
Encashability	—	Any time	On Maturity but encashable after one month	On Maturity but encashable after one month	One Maturity but encashable after one month	Encashable any time	On Maturity but encashable at any date with no return	On Maturity but encashable after six months & earlier with service charge

* not on individuals.
SOURCE: Publications of Central Directorate of National Savings

Recent changes in the structure of permanent debt have had a number of impacts. First, the interest cost is higher. FIBs have higher interest costs than prize bonds or market loans. Second, the frequency of interest payment has risen even though the maturity period of government debt has increased, as interest on FIBs is payable biannually. Both these changes are likely to have a bearing on the debt servicing burden of the government. Finally, shift from BNFB and prize bonds to FIBs (which are registered) and a slight moderation in the rate of increase of FEBCs indicates a decline in the importance of bearer instruments in the country. While this contributes to higher documentation of the economy it, however, indicates that black money is perhaps not being channelled into the government securities to the same extent as in the mid 80s.

TABLE 5.4
LEVEL AND COMPOSITION OF FLOATING DEBT

[Rs in Billion]

Years	Ad hoc Treasury Bills	Treasury Bills (Tap)	Treasury Bills (Auction)	Treasury Bills (SBP)	Government Treasury Deposit Receipts	Others	Total
1980-81	21.4	6.0	—	—	3.4	—	30.8
1981-82	30.4	5.7	—	—	3.5	0.7	40.3
1982-83	22.9	20.3	—	—	4.5	0.7	48.4
1983-84	32.1	20.1	—	—	4.2	0.5	56.9
1984-85	50.6	17.6	—	—	4.1	0.5	72.8
1985-86	56.4	26.6	—	—	4.3	—	87.3
1986-87	52.3	44.9	—	—	7.7	—	104.9
1987-88	71.7	48.5	—	—	7.3	—	127.5
1988-89	60.6	57.5	—	—	17.1	—	135.2
1989-90	69.6	58.7	—	—	16.1	0.6	145.0
1990-91	69.5	—	45.6	30.5	5.3	—	150.9
1991-92	61.4	—	44.3	91.5	—	—	197.3
1992-93	61.4	—	38.9	115.5	—	—	215.8
1993-94	61.4	—	78.7	117.5	—	—	255.7
1994-95	61.4	—	55.1	184.5	—	—	301.1
ACGR (%)	7.8	28.8	4.8	56.8	4.5	—	17.7
SHARES (%)							
1980-81	69.5	19.5	—	—	11.0	—	100.0
1984-85	69.5	24.2	—	—	5.6	0.7	100.0
1990-91	46.1	—	30.2	20.2	3.5	—	100.0
1994-95	20.4	—	18.3	61.3	—	—	100.0
SOURCES:							
• Pakistan Economic Survey							
• Annual Reports SBP							

5.3 Structure of Floating Debt

Floating debt essentially consists of short term government debt raised through the sale of government treasury bills. Prior to financial sector liberalisation, treasury bills were 'on-tap' for issue to commercial banks or issued on ad-hoc basis to SBP.

5.4 *Structure of Unfunded Debt*

Broadly speaking, debt raised through government voluntary saving schemes is referred to as unfunded debt. Currently, there are four major government saving schemes in operation, the Defence Saving Certificates (DSCs), the Special Saving Certificates (SSC) [which have replaced Khas Deposit Certificates (KDCs)], Special Saving Accounts and Saving Accounts. Over 70 percent of the unfunded debt is raised by two of these schemes - the DSCs and SSCs (See table 5.5). DSC scheme is one of the oldest government saving schemes, largely attracting individual investors. It is a long-term scheme with a maturity period of 10 years. An investment of Rs.100 becomes Rs.113, Rs.128, Rs.147, Rs.170, Rs.198, Rs.232, Rs.272, Rs.319, Rs.375, and Rs.441 respectively on completion of one, two, three, four, five, six, seven, eight, nine and ten years respectively. Average compound rate of return comes to about 16 per cent on maturity. The return is income tax free. Zakat is deducted at the time of encashment on payable value as on valuation date. All institutions, except banks and DFIs, are eligible to invest following the liberalisation in 1993.

The SSC scheme has both a registered and a bearer component. It is a three-year scheme, but investment can be withdrawn anytime after one month. All individuals and institutions, other than banks and non-bank DFIs, are eligible to invest. The return is currently paid on six monthly basis at the rate of 15 per cent per annum for first 2 years and 17 per cent per annum for the last one year on the registered certificates. The return is lower on bearer certificates of 12 per cent for first two years and 14 per cent for the last year. Individuals, are exempt from income tax. However, institutions investing in registered securities pay withholding tax at 10 per cent on the profit. Zakat is deducted once at the time of encashment on the principal amount. No Zakat is deducted on bearer certificates.

TABLE 5.5
LEVEL AND COMPOSITION OF UNFUNDED DEBT

(Rs in Billion)

Years	Defence Saving Certificates	Khas Deposit Certificates	Special Savings Certificates	Other Certificates	Special Savings Accounts	Savings Accounts	Other Accounts	Others	Total
1980-81			6.9			3.4		0.4	10.7
1981-82			9.1			4.4		0.5	14.0
1982-83			13.0			8.0		0.6	21.6
1983-84			17.9			11.1		0.7	29.7
1984-85			24.4			14.9		1.0	40.3
1985-86	11.8	37.2	—	2.5	—	1.3	—	4.8	57.6
1986-87	15.7	49.7	—	2.5	—	2.0	—	5.1	75.0
1987-88	20.9	66.8	—	3.0	—	2.5	—	5.6	98.8
1988-89	25.4	80.9	—	3.8	—	2.9	—	6.1	119.1
1989-90	35.2	79.0	7.0	4.2	1.7	3.5	—	7.0	137.6
1990-91	41.9	48.8	26.7	3.1	6.6	5.4	—	7.7	140.2
1991-92	47.5	19.9	45.9	2.4	11.9	5.6	0.8	8.8	142.8
1992-93	53.0	-2.8	62.2	2.8	15.7	5.2	1.1	9.5	146.7
1993-94	62.2	-3.6	67.7	6.2	16.6	12.0	1.2	17.9	180.2
1994-95	85.0	0.5	76.8	11.7	18.8	15.6	2.3	4.9	215.7
ACGR %	23.1	—	76.3	12.0	76.8	32.0	—	33.9	23.9
SHARES (%)									
1985-86	20.5	64.6	—	4.3	—	2.3	—	8.3	100.0
1990-91	29.9	34.8	19.0	2.2	4.7	3.9	—	5.5	100.0
1993-94	34.5	-2.0	37.6	3.4	9.2	6.7	0.7	9.9	100.0
SOURCE:									
• Pakistan Economic Survey									
• Annual Report, SBP									

Since its introduction, KDCs and subsequently SSCs have been the largest debt raiser for the government within unfunded debt. KDCs/SSCs have a number of obvious attractions for the investors. Compared to DSCs, KDCs/SSCs offer a higher nominal return (for the same period of investment), have a shorter maturity period, have optional registration and interest is paid bi-annually instead of on maturity.

Saving accounts together account for about one-fourth of the total unfunded debt. The saving account is an ordinary savings bank account. A tax free profit of 11 per cent per annum is calculated on the minimum monthly balance. Both individuals and institutions, are allowed

to invest. Zakat is deducted at source from the balance at credit as on the valuation date each year.

5.5 Structure of External Debt

Turning now to external debt, there are indications of a structural change, largely resulting from a shift from long term to short/medium term debt. In the 90s, short/medium term debt in US dollars, has increased at an annual rate of 40 percent while growth in long term debt has been less than 8 percent. It appears that for immediate balance of payments support, government in recent years has had to increasingly resort to short term, commercial borrowings.

In conclusion, public debt in Pakistan has undergone major structural change in the last decade or so. There is higher resort to domestic debt and within domestic debt to unfunded and permanent debt. Easy access to cheap funds has become increasingly difficult, primarily because of financial sector reforms. Government has had to introduce new saving schemes to attract more investors, by and large, at relatively higher interest rates. As consequence there are currently multiple instruments to raise debt, some being partial substitutes for others. Major debt instruments for the government are treasury bills, saving schemes including DSCs, SSCs, FIBs, and prize bonds. Besides, there are number of other smaller saving schemes, which target specific categories of investors.

The change in the structure of public debt has had a number of key implications. It appears that within domestic debt the shift has been towards medium term and long term debt while the opposite trend is observed in the case of external debt. Also, there has been a decline in importance of bearer certificates and withholding taxes are increasingly being levied on debt instruments.

TABLE 5.5
STRUCTURE OF EXTERNAL DEBT

[In Billion US\$]

Years	Long Term Debt	Short/Medium Term Debt	Total External Debt
1990-91	15.8	0.8	16.6
1991-92	16.6	1.8	18.4
1992-93	18.5	2.3	20.8
1993-94	20.2	3.2	23.5
1994-95	21.3	3.1	24.4
ACGR %	7.7	40.3	10.1
SHARE (%)			
1990-91	95.2	4.8	100.0
1994-95	87.3	12.7	100.0
SOURCE: Annual Report, SBP.			

Chapter Six

FACTORS CONTRIBUTING TO GROWTH IN DEBT/INCOME RATIO

We analyse in this chapter the role of different factors in changing the outstanding debt to GDP ratio. As highlighted earlier, this is key indicator of the burden of debt on the national economy. Diagnosis of the contribution of different factors will help in designing a set of policies for managing the level of public debt.

The analysis is conducted separately for external debt and for public debt as a whole as different factors impact on the former. In particular, in the context of external debt, we have to quantify capital losses on the rupee denominated value of external debt caused by exchange rate depreciation. Section 1 deals with changes in external debt/GDP ratio and Section 2 with the total debt/GDP ratio.

6.1 Changes in External Debt to GDP Ratio

In order to derive the expression for changes in the external debt/GDP ratio we designate the following: D^{ϵ} = outstanding external debt in US\$; ϵ = exchange rate (rupees per US\$); $NICAD$ = non interest current account balance (in rupees); y = GDP; p = domestic price index; p_w = world price index, r = real interest rate on external debt; g = real GDP growth rate.

The external debt/GDP ratio is given by $\frac{D^{\epsilon} \epsilon}{y}$. The change in this ratio can be derived as follows:

$$d\left(\frac{d^{\epsilon} \epsilon}{y}\right) = \frac{\epsilon dD^{\epsilon}}{y} + \frac{D^{\epsilon} \epsilon}{y} \cdot \frac{d\epsilon}{\epsilon} - \frac{D^{\epsilon} \epsilon}{y} \cdot \frac{dy}{y} \quad [1]$$

Now

$$\frac{dD^\epsilon}{Y} = \frac{NICAD}{Y} + \frac{INT}{Y} \quad [2]$$

where INT = interest payments on external debt in US\$. We have

$$\frac{INT}{Y} = \frac{D^\epsilon \epsilon}{Y} \left[r + \frac{p_w}{P_w} \right] \quad [3]$$

and

$$\frac{dy}{Y} = \left[g + \frac{dp}{P} \right] \quad [4]$$

Substituting (2), (3) and (4) into (1) we obtain

$$d\left(\frac{D^\epsilon}{Y}\right) = \frac{NICAD}{Y} = \frac{D^\epsilon \epsilon}{Y} [r - g] + \frac{D^\epsilon \epsilon}{Y} \left[\frac{d\epsilon}{\epsilon} + \frac{dp_w}{P_w} - \frac{dp}{P} \right] \quad [5]$$

Now the real effective exchange rate, ϵ_r , can be defined as

$$\epsilon_r = \epsilon \cdot \frac{P_w}{P} \quad [6]$$

Therefore,

$$\frac{d\epsilon_r}{\epsilon_r} = \frac{d\epsilon}{\epsilon} + \frac{dp_w}{P_w} - \frac{dp}{P} \quad [7]$$

Substituting (7) into (5) we finally obtain

$$d\left(\frac{D^\epsilon \epsilon}{Y}\right) = \frac{NICAD}{Y} + \frac{D^\epsilon \epsilon}{Y} [r - g] + \frac{D^\epsilon \epsilon}{Y} \cdot \frac{d\epsilon_r}{\epsilon_r} \quad [8]$$

This is identical to the expression obtained by Sweder van Wijnbergen (1989).

Equation (8) reveals that the change in the external debt/GDP ratio is attributable to three factors as follows:

- (i) the non-interest current account balance. The larger the deficit in the current account of the balance of payments, excluding interest payments, the greater the increase in external debt due to larger borrowings;
- (ii) the extent to which the real interest rate, r , on foreign debt exceeds the growth rate, g , of the economy;

(iii) the rate of capital loss on external debt due to real exchange rate depreciation,

$$\frac{d\epsilon_r}{\epsilon_r}$$

The above formula in equation (8) has been applied on data from 1980-81 to 1994-95. In order to ensure consistency in terms of the following accounting identity

$$\text{absolute change in external debt} = \text{non interest current account deficit} + \text{interest payments on external debt} + \text{absolute magnitude of capital loss on external debt} \quad [1]$$

TABLE 6.1 MAGNITUDE OF FACTORS* CONTRIBUTING TO INCREASE IN EXTERNAL AND PUBLIC DEBT						
Years	i_e	$\left(\frac{\dot{P}}{P}\right)_{USA}$	g	$\frac{\dot{\epsilon}_r}{\epsilon_r}$	$\left(\frac{\dot{P}}{P}\right)_{PAK}$	i_d
1981-82	3.23	7.89	6.50	6.3	9.37	7.84
1982-83	4.10	5.12	6.92	19.0	5.28	8.47
1983-84	4.24	4.06	5.06	0.7	9.66	8.75
1984-85	4.45	3.79	7.58	11.6	4.54	18.64
1985-86	4.11	3.01	5.51	6.2	3.28	8.87
1986-87	4.01	2.71	6.46	4.6	4.52	8.03
1987-88	3.93	3.45	7.64	-3.3	9.61	10.06
1988-89	4.22	4.22	4.97	4.8	8.59	9.82
1989-90	3.81	4.14	4.45	9.2	6.45	10.59
1990-91	3.95	4.07	5.44	-3.8	13.07	9.73
1991-92	3.88	3.30	7.84	4.0	10.07	10.64
1992-93	3.78	3.00	1.91	-1.0	8.67	11.86
1993-94	3.94	3.00	3.80	5.6	13.08	13.57
1994-95	3.30	3.00	4.70	-8.2	14.08	12.29

* i_e = nominal interest rate on external debt, $\left(\frac{\dot{P}}{P}\right)_{USA}$ = rate of inflation in USA,
g = GDP growth rate
 $\frac{\dot{\epsilon}_r}{\epsilon_r}$ = % change in real effective exchange rate of Pak rupee with respect to USA \$,
 $\left(\frac{\dot{P}}{P}\right)_{PAK}$ = rate of inflation in GDP deflator in Pakistan, i_d = interest rate on domestic debt

SOURCE:

- World Bank, World Tables
- International Monetary Fund, International Financial Statistics
- Pakistan Economic Survey

We have taken the non interest current account deficit as the residual. Therefore, this is net of private capital inflows and changes in foreign exchange reserves, which constitute other mechanisms, besides borrowings, for financing the deficit.

The magnitude of some factors influencing the changes in external debt/GDP ratio is presented in table 6.1. The level of outstanding external debt corresponds to the World Bank estimates and as highlighted earlier are higher than those of the Economic Affairs Division and State Bank of Pakistan due perhaps to the inclusion of a larger component of short term and commercial borrowings. The world wide rate of inflation has been proxied by changes in the consumer price index in the USA.

Results of the application of the methodology in equation (8) are as follows:

- Between 1980-81 and 1994-95 the external debt/GDP ratio increased modestly by 7.8 percentage points as shown in table 6.2. Non interest current account deficits alone could have increased this magnitude by almost three times as much while capital losses on external debt, due to real exchange rate depreciation, made an even larger contribution. But the increase in the ratio was held back dramatically by the fact that throughout the period the real interest rate on external debt was substantially below the real growth rate of the economy. The access of Pakistan to concessionary financing from multilateral and bilateral agencies has been a major factor responsible for restricting the level of the external debt/GDP ratio. It is interesting to note that if the nominal interest rate on external debt had been higher by only one percentage point during the period then the ratio of external debt to GDP in 1994-95 would have stood at close to 60 percent instead of 50 percent, implying significantly higher level of foreign debt servicing.

TABLE 6.2 FACTORS CONTRIBUTING TO CHANGE IN EXTERNAL DEBT* TO GDP RATIO				
PERIOD	$\frac{NICAD}{Y}$	$\frac{\epsilon D_t}{Y} (r-g)$	$\frac{\epsilon D_t}{Y} \cdot \frac{d_{\epsilon_r}}{\epsilon_r}$	$\Delta \left[\frac{\epsilon D_t}{Y} \right]$
■ CUMULATIVE				
1980-81 to 1989-90	13.0	-24.5	25.0	13.5
1989-90 to 1994-95	6.8	-10.9	-1.6	-5.7
1980-81 to 1994-95	19.8	-35.4	23.4	7.8
■ ANNUAL AVERAGE				
1980-81 to 1989-90	1.4	-2.7	2.8	1.5
1989-90 to 1994-95	1.4	-2.2	-0.3	-1.1
1980-81 to 1994-95	1.4	-2.5	1.7	0.6
* External debt estimates according to World Bank.				
SOURCES: Derived.				

- The pattern of change in the external debt/GDP ratio differs fundamentally between the decade of the 80s and the first half of the decade of the 90s. In the former period the cumulative increase in the ratio was 13.5 percentage points whereas in the latter period there was an overall fall of 5.7 percentage points. Why has there been greater success in curtailing the external debt burden in recent years despite the sharp fall in the real growth rate of the economy? The main reason for this is the difference in the rate of real exchange rate depreciation and not in the size of the non-interest current account deficits. During the 80s Pakistan followed an aggressive exchange rate policy which actually led to increasing undervaluation of the rupee in terms of purchasing power parity, and the real exchange rate fall on average each year by as much as 2.8 percent. This implied major capital losses and rapid increases in the rupee value of external debt. During the 90s the rupee has moved, more or less, in line with changes in purchasing power parity with only marginal changes in the real effective exchange rate. Consequently, given, more or less, the same size of non-interest current account deficits and the differential between real interest rates and GDP growth there has been some fall in the external debt to GDP ratio during the

90s. It is likely, however, that due to the devaluation of the Pak rupee in November 1995 and the continued slide thereafter that the external debt/GDP ratio may jump up somewhat in 1995-96 by 3 to 4 percentage points.

Ahmed [1995] has analysed the pattern of change in the external debt/GDP ratio during the decade of the 70s, from 1972-73 onwards (after the massive devaluation). He concludes that during this period Pakistan experienced substantial non-interest current account deficits. By itself, this should have contributed significantly to raising the ratio. However, the ratio declined appreciably because the adverse implication of these deficits was more than offset by the contributions of a large negative real interest rate and GDP growth. The appreciation of the real exchange rate also contributed to a reduction in the external debt/GDP ratio.

6.2 Changes in The Public Debt to GDP Ratio

The expression for change in the public debt/GDP ratio can be derived in a similar manner to that adopted above for external debt. For this purpose we designate the following additional variables: D = total public debt, D^d = domestic debt, PBD = primary budget deficit, i = real interest rate on domestic debt.

We have that

$$D = D^d + D^e \epsilon \quad [10]$$

Therefore,

$$\begin{aligned} d\left(\frac{D}{Y}\right) + \frac{d(D^d + D^e \epsilon)}{Y} - \frac{D}{Y} \cdot \frac{dy}{Y} + \frac{D^e \epsilon}{Y} \cdot \frac{d\epsilon}{\epsilon} \\ = \frac{PBD}{Y} + \frac{TINT}{Y} - \frac{D}{Y} \cdot \frac{dy}{Y} + \frac{D^e \epsilon}{Y} \cdot \frac{d\epsilon}{\epsilon} \end{aligned}$$

where $TINT$ = total interest payments on domestic and external debt in local currency.

Now

$$\frac{TINT}{Y} = D^d \left(i + \frac{dp}{P} \right) + \frac{(D^e \epsilon)}{Y} \left[r + \frac{dp_w}{P_w} \right] \quad [11]$$

Substituting (11) into (10) we obtain

$$d\left(\frac{D}{Y}\right) = \frac{PBD}{Y} + \frac{D^d}{Y} (i-g) + \frac{D^e \epsilon}{Y} (r-g) + \frac{D^e \epsilon}{Y} \left[\frac{d\epsilon}{\epsilon} + \frac{dp_w}{p_w} - \frac{dp}{p} \right] \quad [12]$$

Substituting into (12) from (7) we have

$$d\left(\frac{D}{Y}\right) = \frac{PBD}{Y} + \frac{D^d}{Y} (i-g) + \frac{D^e \epsilon}{Y} (r-g) + \frac{D^e \epsilon}{Y} \cdot \frac{d\epsilon_r}{\epsilon_r} \quad [13]$$

According to (13) the change in the public debt to GDP ratio is caused by the following factors:

- (i) size of the primary budget deficit. The larger this deficit the greater the quantum of borrowing and, therefore, the bigger the increase in public debt;
- (ii) the extent to which the domestic real interest rate on public debt exceeds the real GDP growth rate;
- (iii) the extent to which the external real interest rate exceeds the real GDP growth rate;
- (iv) the rate of capital loss on external debt due to real exchange rate depreciation.

Equation (13) has also been applied to the data from 1980-81 to 1994-95. The primary budget deficit has been derived as a residual from the following accounting identity:

$$\begin{array}{l} \text{primary budget} \\ \text{deficit} \end{array} = \begin{array}{l} \text{total change in} \\ \text{public debt} \end{array} - \begin{array}{l} \text{total interest} \\ \text{payments} \end{array} - \begin{array}{l} \text{capital loss on} \\ \text{external debt} \end{array} \quad [14]$$

Therefore, this notion of the primary budget deficit not only covers the difference between revenues and non-interest expenditures (recurring plus development) of the federal and provincial governments combined but also other non plan expenditures and expenditures of semi-autonomous corporations which are financed through government borrowings. Significant differences are observed between the reported and the estimated primary budget deficits. Appendix I discusses these differences. Also, as before, World Bank estimates of external debt are used.

Results of the analysis are presented in table 6.3. The major conclusions are as follows:

- There was a big increase in the public debt to GDP ratio of almost 28 percentage points between 1980-81 and 1994-95, with most of the increase in domestic debt. The major factor contributing to the rise in the debt was the cumulative effect of successive large primary budget deficits. This was alleviated by the large differential between real external and domestic interest rate and the real growth rate of the economy. Capital losses on external debt due to real exchange rate depreciation also made a significant contribution.

TABLE 6.3 FACTORS CONTRIBUTING TO CHANGE IN PUBLIC DEBT TO GDP RATIO						(%)
Period	$\frac{PBD}{Y}$	$\left(\frac{Dd}{Y}\right)(i-g)$	$\left[\frac{\epsilon D_{\epsilon}}{Y}\right](r-g)$	$\left[\frac{\epsilon D_{\epsilon}}{Y}\right]\frac{\epsilon_r}{\epsilon_r}$	$\Delta\left(\frac{D}{Y}\right)$	
■ CUMULATIVE						
1980-81 to 1989-90	46.2	-11.1	-24.5	25.0	35.6	
1989-90 to 1994-95	16.1	-11.4	-10.9	-1.6	-7.8	
1980-81 to 1994-95	62.3	-22.5	-35.4	23.4	27.8	
■ ANNUAL AVERAGE						
1980-81 to 1989-90	5.1	-1.2	-2.7	2.8	4.0	
1989-90 to 1994-95	3.2	-2.3	-2.2	-0.3	-1.6	
1980-81 to 1994-95	4.5	-1.6	-2.5	1.7	2.1	
SOURCES: Derived						

- While the public debt to income ratio rose substantially by almost 36 percentage points during the decade of the 80s it actually declined by 8 percentage points in the first half of the decade of the 90s. The difference between the two periods in the nature of evolution of the ratio can be attributed, first, to decline in the size of the primary budget deficit in relation to the GDP in the latter period and, second, a lower rate of depreciation in the real exchange rate. The contrasting pattern of movement in the public debt to GDP ratio in the two periods highlights the importance of

primary budget deficits and exchange rate changes in influencing the growth of public debt.

6.3 Policy Implications

At a minimum the policy goal must be to keep the public debt to income ratio constant. Otherwise, there is the danger that a rising ratio coupled with higher interest rates, accompanying the process of financial sector liberalisation, implied interest payments on debt will become unsustainable. The key policy objective of fiscal management, must, therefore, be to keep the primary budget deficit at a level which prevents the public debt to income ratio from rising. Simultaneously, exchange rate policy will have to be motivated not only by the consideration of keeping current account deficits at a sustainable level but also by the need to limit capital losses on external debt which increase debt servicing obligations in rupee terms.

Based on the above considerations, we project a scenario which ensures that the public debt to GDP ratio does not rise beyond the present level. From (13) we have that

$$d\left(\frac{D}{Y}\right) = 0 \text{ if } \frac{PBD}{Y} = \frac{D^d}{Y} (i-g) - \frac{D^\epsilon \epsilon}{Y} (r-g) - \frac{D^\epsilon \epsilon}{Y} \cdot \frac{d\epsilon_r}{\epsilon_r} \quad [15]$$

The values of D^d/y and D^ϵ/y are taken at the levels in 1994-95.

Domestic interest rates have shown a rising tendency since 1991-92 due partly to the rise in the underlying rate of inflation and partly as a consequence of the financial sector reforms. These reforms are likely to lead eventually to real domestic interest rates in the 5 percent to 6 percent range. This is close to the long run GDP growth rate of the national economy. Therefore, the differential between real domestic interest rate and GDP growth rate is likely to be marginal.

Nominal interest rates on external debt are low currently at below 4 percent and may rise somewhat in the wake of greater international competition for concessionary financing and as the resort to commercial borrowing increases. Therefore, the nominal interest rate could approach 5 percent, implying a real external interest rate of about 2 percent and a magnitude of $(r-g)$ of about $-3\frac{1}{2}$ percent.

Pakistan has followed a policy of keeping the real effective exchange rate, more or less, constant in recent years. We assume that this policy will continue in coming years. Therefore, the assumptions underlying the scenario are as follows:

$$i-g = 0, \tau - g = -3.5, \frac{d\epsilon_r}{\epsilon_r} = 0$$

This implies that the sustainable level of the primary budget deficit is as follows:

$$\frac{PBD}{Y} = -0.424(0) - 0.442(2-5.5) - 0.442(0)$$

That is $\frac{PBD}{Y} = 1.547 \approx 1.5$

Therefore, under this scenario, if the primary budget deficit remains below 1.5 percent of the GDP annually then the public debt to GDP ratio is unlikely to rise significantly beyond its current level. However, this degree of structural adjustment in public finances may not be adequate if the intention is to keep the level of interest payments to GDP constant. These could rise in the present of a constant public debt to GDP ratio if interest rates continue to increase. As such, it may be essential to target for a reduction in the public debt to GDP ratio which will require further curtailment in the size of the primary budget deficit. Also, it needs to be emphasised that we have taken a broader definition of the primary budget deficit, as per equation (14).

PART THREE
INTEREST RATES

Chapter Seven

LEVEL AND STRUCTURE OF INTEREST RATES

The purpose of this chapter is to examine the structure of nominal interest rates on key debt instruments and trace the trend in them.

7.1 Rates of Return on Saving Schemes

Variation exists in the structure of interest rates on different debt instruments currently used to finance the public sector deficit. Table 7.1 gives the nominal interest rates on key public saving schemes. Currently, rates of return vary from 10 percent in the case of prize bonds to a maximum of 16 percent. Highest nominal return is on DSCs with ten years maturity followed by FIBs of the same maturity. A higher return is offered on the former even though it is exempt from withholding tax perhaps because of deduction of Zakat at the time of encashment. In contrast, Zakat is not applicable on FIBs but these are subject to a withholding tax (see table 7.2). By and large, favourable terms are offered on FEBCs perhaps to induce a higher flow of foreign exchange into government securities.

In general, return offered increases with maturity period, as is the case with FIBs, DSCs and FEBCs. Prior to 1993-94, the rate of return had remained constant on all instruments from 1980-81 onwards. In the post financial sector liberalisation era, some increase in return is witnessed for DSCs and SSCs. Return on prize bonds and Mahana Amadani Account also has remained unchanged, while some schemes like bearer national fund bond offer lower interest rates on roll-over.

The rate of return on treasury bills (on-tap) remained fixed at a low level of 6 percent prior to the financial sector reforms. Since then, the 'on-tap' system, has been replaced by an auction system. Simultaneously, the yield has increased substantially. Table 7.3 shows the

TABLE 7.1
NOMINAL RATE OF RETURN ON PUBLIC DEBT INSTRUMENTS

(%)

Instrument	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95
Prize Bonds	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Special National Fund Bond (2 years)	11.11	11.11	11.11	11.11	11.11	11.11	11.11	-	-
<i>Bearer National Fund Bond</i>									
1 Year	12.35	12.35	12.35	12.35	12.35	12.35	12.35	-	-
2 Years	13.30	13.30	13.30	13.30	13.30	13.30	13.30	-	-
3 Years	14.97	14.97	14.97	14.97	14.97	14.97	14.97	13.00*	13.00
<i>FIBs</i>									
3 Years	-	-	-	-	13.00	13.00	13.00	13.00	13.00
5 Years	-	-	-	-	14.00	14.00	14.00	14.00	14.00
10 Years	-	-	-	-	15.00	15.00	15.00	15.00	15.00
<i>FEBCs</i>									
1 Year	14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50
3 Years	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
6 Years	-	-	-	-	-	-	-	15.00	15.00
Treasury Bills on Tap	6.00	6.00	6.00	6.00	6.00	6.00	6.00	-	-
<i>Defence Savings Certificates</i>									
1 Year	12.00	12.00	12.00	12.00	12.00	12.00	12.00	13.00	13.00
10 Years	15.60	15.60	15.60	15.60	15.60	15.60	15.60	15.99	15.99
Khas/Special Savings Certificates	13.44	13.44	13.44	13.44	13.44	13.44	13.56	13.73	14.89
Mahana Amdani Accounts	14.87	14.87	14.87	14.87	14.87	14.87	14.87	14.87	14.87
* on rolled over debt									
SOURCES:									
• Pakistan Economic Survey									
• Directorate of National Savings									

TABLE 7.2
TAX/ZAKAT TREATMENT OF KEY DEBT INSTRUMENTS

Debt Instruments	Zakat	Withholding Tax Rate
Prize Bonds	—	7.5% on Prize Money
FIBS	—	10%
FEBCs	—	1%
DSCs	✓	—
SSCs - Registered	✓	10%
SSCs - Bearer	—	—
Mahana Amdani Scheme	—	2%
	—	—

SOURCES:

- Federal Budget Documents
- Central Directorate of National Savings

TABLE 7.3
YIELD ON TREASURY BILLS AUCTIONED
(Annual Yield)

(%)

Months	1990-91	1991-92	1992-93	1993-94
July	—	9.40	11.91	12.41
August	—	9.53	11.98	12.92
September	—	9.62	11.91	13.88
October	—	9.91	12.70	13.89
November	—	10.26	12.32	13.59
December	—	10.84	12.56	14.14
January	—	12.10	12.37	12.19
February	—	12.84	12.36	12.10
March	7.38	13.00	12.43	11.75
April	8.95	13.14	12.44	10.62
May	9.24	12.76	12.47	10.40
June	9.42	11.99	12.43	10.86
Average for Year	8.79	11.43	12.19	12.22

evolution of yields on treasury bills at different auctions. The yield has increased systematically over the period, reaching a peak of almost 14 per cent in late 93, and has more than doubled over the pre-reform level.

Interest rates on market loans jumped by about 43 percent in 1992, from 10.75 percent in 1990 to 16 percent in 1994 (See table 7.4). As such, not only has the cost of federal debt both through saving schemes and treasury bills increased but provincial debt has also become more expensive. It, therefore, appears that the rapid escalation in interest payment on

domestic debt for the 1990s is partly due to the increase in interest rates.

TABLE 7.4
INTEREST RATES ON TEN YEAR MARKET LOANS
FLOATED BY THE PROVINCIAL GOVERNMENTS

Year of Flotation	Interest Rate (%)
1981	10.75%
1982	10.75%
1983	10.75%
1984	10.75%
1985	10.75%
1986	—
1987	10.75%
1988	10.75%
1989	10.75%
1990	10.75%
1991	—
1992	15.00%
1993	15.50%
1994	16.00%

— no loans floated
SOURCE: Annual Report, SBP.

7.2 *Interest Rates on Foreign Loans/Credit*

In contrast to domestic debt, interest rates on external debt are low and, by and large, have remained constant over time. Currently, interest rate on external debt ranges from 0.75 percent to 6.11 percent.

In sum, the analysis in this chapter indicates that a rising trend in the interest rates in the 1990s, especially after the financial sector reforms. Prior to that nominal rates of return had remained constant and, therefore, bulk of the increase in the incidence of debt servicing would be due to an increase in debt or a shift from low to high cost debt. On the external debt side, factors other than pure increases in interest rates appear to be responsible for the rise of external debt servicing burden.

TABLE 7.5
INTEREST RATES ON FOREIGN LOANS/CREDITS

(%)

Years	CONSORTIUM SOURCES						OPEC FUND	IDB	IMF
	Germany	Japan	USA	IDA	ADB	IBRD			
1980-81	0.75	2.75	—	0.75	1.00-9.00	—	—	—	0.50
1981-82	0.75	2.75	2.00	0.75	1.00-11.00	11.60	—	5.50	—
1982-83	0.80	2.80	2.00-3.00	0.80	1.00-11.00	11.43	0.0	—	—
1983-84	0.70	2.75-3.25	2.00-3.00	0.75	1.00-10.50	11.40	—	2.50-8.00	—
1984-85	0.75	3.25	—	0.75	1.00-10.25	—	—	—	—
1985-86	0.75	—	—	0.75	1.00-11.00	0.50	—	—	—
1986-87	0.75	0.60	—	0.75	1.00-11.00	0.50	2.25	—	—
1987-88	0.75	3.25	—	0.75	1.00-11.00	0.50	2.25	7.00	—
1988-89	0.75	2.75	—	0.75	1.00-6.41	7.65	2.25	—	0.50
1989-90	0.75	2.50	—	0.75	1.00-6.37	7.74	—	9.00	0.50
1990-91	0.75	2.50	—	—	1.00	0.50	2.25	IRR BASIS	—
1991-92	0.75	2.50-2.60	—	0.75	6.59	7.60	2.25	2.50	—
1992-93	0.75	2.60	—	0.75	1.00	—	—	2.50	—
1993-94	0.75	2.60	—	0.75	1.00	7.25	—	—	—
1994-95	0.75	2.60	—	0.75	1.00-6.11	7.09	2.00	5.00+libor	—

SOURCE: Pakistan Economic Survey.

Chapter Eight

DETERMINANTS OF RATES OF RETURN ON DEBT INSTRUMENTS

What determines or explains the variation in the rate of return on various debt instruments? Previous chapters indicate some correlation between interest rates and the period of maturity. Conceptually, rates of return are expected to vary with ownership (whether offered by the government of Pakistan, DFIs or other public sector), the frequency of payment of interest, the maturity period, degree of anonymity of ownership of the instrument (whether bearer or registered) and extent of liquidity.

Table 8.1 gives the key characteristics of major debt instruments currently available for personal investors. The debt instruments analysed include DSCs, FIBs, FEBCs, Mahana Amdani scheme, SSCs, instruments launched by NDFC, SSGC, NBP, Packages Ltd., National Leasing, Bearer NFB and prize bonds. An instrument is considered highly liquid if traded in government/treasury secondary market, consisting of banks, money market dealers and the State Bank of Pakistan. FIB is an example of such an instrument. The second category are highly liquid securities with some penalty. These are instruments which are traded in the stock exchange like the FEBCs. If the issuer provides liquidity either through loan against security or redemption through partial loss of interest, the instrument has been classified in the third category.

8.1 Results of Estimation

Based on a detailed analysis of the above public debt instruments, we have estimated the determinants of net rate of return (net of taxes and zakat). The regression results of the analysis are as follows:

TABLE 8.1
CHARACTERISTICS OF DEBT INSTRUMENTS
(For Personal Investors)

Instrument	Gross Yield (Before Taxes)	Net Yield [After Taxes]	OWNERSHIP DUMMY			Frequency of Payment (month) [FOP]	Maturity Period (years) [MP]	Dummy for Bearer B=1, R=0 [DBR]	Certificate of Investment [DCOI] ⁴
			[DGOP] ¹	[DDFI] ²	[DPUS] ³				
DSC 10 years	16.00	15.75	1	0	0	120	10	0	0
FIB 10 years	15.00	15.00	1	0	0	6	10	0	0
DSC 9 years	15.82	15.54	1	0	0	108	9	0	0
DSC 8 years	15.60	15.29	1	0	0	96	8	0	0
DSC 7 years	15.37	15.01	1	0	0	84	7	0	0
DSC 6 years	15.06	14.64	1	0	0	72	6	0	0
FEBC 6 years	14.97	14.78	1	0	0	72	6	1	0
DSC 5 years	14.64	14.14	1	0	0	60	5	0	0
FIB 5 years	14.00	14.00	1	0	0	6	5	0	0
FEBC 5 years	14.75	14.52	1	0	0	60	5	1	0
DSC Monthly	14.64	13.18	1	0	0	1	5	0	0
DSC 4 years	14.19	13.56	1	0	0	48	4	0	0
FIB 3 years	13.00	13.00	1	0	0	6	3	0	0
FEBC 4 years	14.85	14.56	1	0	0	48	4	1	0
DSC 3 years	13.70	12.87	1	0	0	36	3	0	0
FEBC 3 years	14.98	14.59	1	0	0	36	3	1	0
NSC SSC (B)	12.67	11.77	1	0	0	6	3	1	0
NSC SSC (R)	14.50	13.73	1	0	0	6	3	0	0
DSC 2 years	13.14	11.88	1	0	0	24	2	0	0
FEBC 2 years	14.46	13.88	1	0	0	24	2	1	0
DSC 1 year	13.00	10.18	1	0	0	12	1	0	0
FEBC 1 year	14.50	13.36	1	0	0	12	1	1	0
IBDP COIs	14.70	10.73	0	1	0	1	7	0	1
NDFC MIC	17.00	14.92	0	1	0	1	5.5	0	0
NDFC COI	14.00	10.10	0	1	0	1	5	0	1
SSGC	18.25	16.31	0	0	1	6	5	0	0
PICL Gro. CVT	17.50	13.25	0	0	1	60	5	0	1
NBP COI Govt.G	16.30	12.17	1	0	0	1	5	0	1
Packages Ltd	18.50	16.17	0	0	0	6	5	0	0
Natural Leasing COI	18.00	13.70	0	0	0	6	5	0	1
SCMC COIs	17.00	12.80	0	0	0	1	5	0	1
Bearer NFB	13.00	12.33	1	0	0	36	3	1	0
Prize Bonds	10.00	9.25	1	0	0	2	100	1	0

1. DGOP = 1, if Government of Pakistan Debt Instrument; 2. DFI = 1, if floated by DFIs; 3. DPUS = 1, if floated by Public Sector Corporations; 4. DCOI = 1, if Certificate of Investment.

$$\begin{aligned}
 \text{NY} = & \quad 6.4901 & -1.8568 \text{ DGOP} & -2.3534 \text{ DDFI} & -0.9080 \text{ DBR} & +0.4418 \text{ MP} \\
 & (3.111)^* & (3.543)^* & (-3.904)^* & (-1.781)^* & (6.094)^* \\
 & +0.0024 \text{ FOP} & +8.2918 \text{ DLX} & -1.9959 \text{ DLX}^2 & -2.5672 \text{ DCOI} & \\
 & (0.891) & (3.780)^* & (-3.768)^* & (5.169)^* &
 \end{aligned} \quad [1]$$

$\bar{R}^2 = 0.79$; F-Statistics = 16.116; No. of Observations = 33; * Significant at 1% Level.

Where:

- NY = Net rate of return on debt instruments
- DGOP = Dummy for the Government of Pakistan debt instrument
- DDFI = Dummy for DFIs debt Instrument
- DBR = Dummy for bearer instruments
- MP = Maturity period (in years)
- FOP = Frequency of payment of interest (in months)
- DLX = Dummy variable for liquidity of instruments
- DLX² = Square of DLX
- DCOI = Dummy Variable if the instrument is a certificate of investment

Equation (1) explains over 79 percent of the variation in the net rates on return of various debt instruments. Some of the key results are as follows:

1. A government of Pakistan or a DFI instrument, on the margin, has a lower net return than the public sector instruments like Sui Southern Gas Company and PICL growth certificates, primarily because of the presence of a government guarantee.
2. The net yield is lower on bearer instruments. Some of the bearer instruments have, in fact, been introduced by the government to channellize the black money existing in the economy. A prime example includes the BNFBS.
3. The expected net yield increases with the maturity period. Since the government can potentially hold funds for a longer period, it is willing to offer higher returns. Also,

given risk perceptions, investors need to be offered higher returns to induce them to pledge their funds on a longer term basis. However, the increase in return with maturity period is not exponential.

4. The more liquid the instrument is the lower the net yield on it. For example, net return on very liquid instruments like FIB is, at the margin, be lower than the 10 year maturity period DSC.
5. Lower net returns are associated with instruments which constitute certificates of investment offered by DFIs and banks, primarily because of higher tax incidence due to annual Zakat payments.

The above analysis can be used to estimate the rate of return based on the key features of a debt instrument. Deviation of actual from the estimated rates highlight that the current rate structure is not entirely consistent with the key characteristics of the debt instruments and therefore, scope exists for alterations in them. Chapter thirteen presents the results of the such an analysis.

PART FOUR
INTEREST PAYMENTS
ON DEBT

Chapter Nine

EFFECTIVE INTEREST COST OF DEBT

Following a description of the trends in the size of public debt and in interest rates we are now in a position to analyse the evolution of interest payments on debt.

9.1 Interest Payments on Public Debt

Table 9.1 gives details of interest payments on various types of domestic and external debt.

In 1994-95, total interest payment on domestic and external debt aggregated to about Rs 101

TABLE 9.1
INTEREST PAYMENTS ON PUBLIC DEBT

(Rs in Billion)

Years	INTEREST PAYMENT ON DOMESTIC DEBT						Interest on External Debt	TOTAL INTEREST PAYMENT	
	FEDERAL DEBT				Provincial	Total		Rs in Billion	% of GDP
	Perma- nent Debt	Floating Debt	Unfunded Debt	Total					
1980-81	1.2	0.9	0.8	2.9	0.5	3.4	2.8	5.7	2.0
1981-82	2.1	0.8	1.3	4.2	0.4	4.6	2.8	7.4	2.3
1982-83	2.5	1.5	2.0	6.0	0.5	6.5	4.3	10.8	3.0
1983-84	3.6	1.7	2.8	8.1	0.5	8.6	5.1	13.7	3.3
1984-85	3.2	1.9	4.6	9.7	0.5	10.2	5.9	16.1	3.4
1985-86	3.4	2.5	6.0	11.9	0.7	12.6	6.4	19.0	3.7
1986-87	3.8	3.2	7.9	14.9	1.0	15.9	7.4	23.3	4.1
1987-88	5.3	4.4	11.7	21.4	1.5	22.9	8.2	31.1	4.6
1988-89	8.4	4.7	13.6	26.7	1.6	28.3	9.4	37.7	4.9
1989-90	11.3	5.9	17.0	34.2	1.1	35.3	11.4	46.7	5.5
1990-91	7.7	7.5	18.7	33.9	1.3	35.2	13.0	48.2	4.7
1991-92	15.2	13.7	19.4	48.3	2.5	50.8	14.6	65.4	5.3
1992-93	21.9	19.2	19.4	60.5	3.9	64.4	15.9	80.3	6.0
1993-94	32.1	22.5	20.3	74.9	4.1	79.0	19.6	98.6	6.3
1994-95	33.6	15.8	24.8	74.2	3.5*	77.7	23.2	100.9	5.4
ACGR (%)	26.9	22.7	27.8	26.1	14.9	25.0	17.9	22.8	7.4
SHARE (%)									
1980-81	21.0	15.8	14.0	50.9	8.8	59.6	40.4	100.0	—
1990-91	16.0	15.6	38.8	70.3	2.7	73.0	27.0	100.0	—
1994-95	33.3	15.6	24.6	73.5	3.5	77.0	23.0	100.0	—

SOURCE: Annual Budget Statement, MOF.

billion, almost Rs 78 billion of this was in lieu of domestic debt. Over the period, 1980-81 to 1994-95, interest payments have increased at an average annual rate of about 23 percent, from 2 percent of the GDP to 5.4 percent.

The rapid increase in interest payments over the last decade or so can largely be attributed to the sharp increase in interest payments on domestic debt, in particular, federal debt. The latter has increased at an annual rate of over 26 percent. Fastest increase, of about 28 percent, has been in interest payment on unfunded debt, due to the introduction of high return saving schemes like DSCs and SSCs. Interest on permanent debt has also increased rapidly, at about 27 percent, in part due to the introduction of the FIBs (see Chart Seven).

There is a noticeable jump in interest payments on almost all types of domestic debt in 1991-92. This is a consequence of financial sector liberalisation, leading to an institution of market based interest rate structure on government debt instruments like treasury bills. However, contrary to perceptions, the growth rate in interest payments in the aftermath of the reforms has actually

declined. As shown in table 9.2 growth rate in interest payments on domestic debt was 26 percent during the 80s. During the 1990s, this has fallen to about 22 percent. The decline in the rate of increase interest payments is primarily a consequence of a decline in the rate of increase

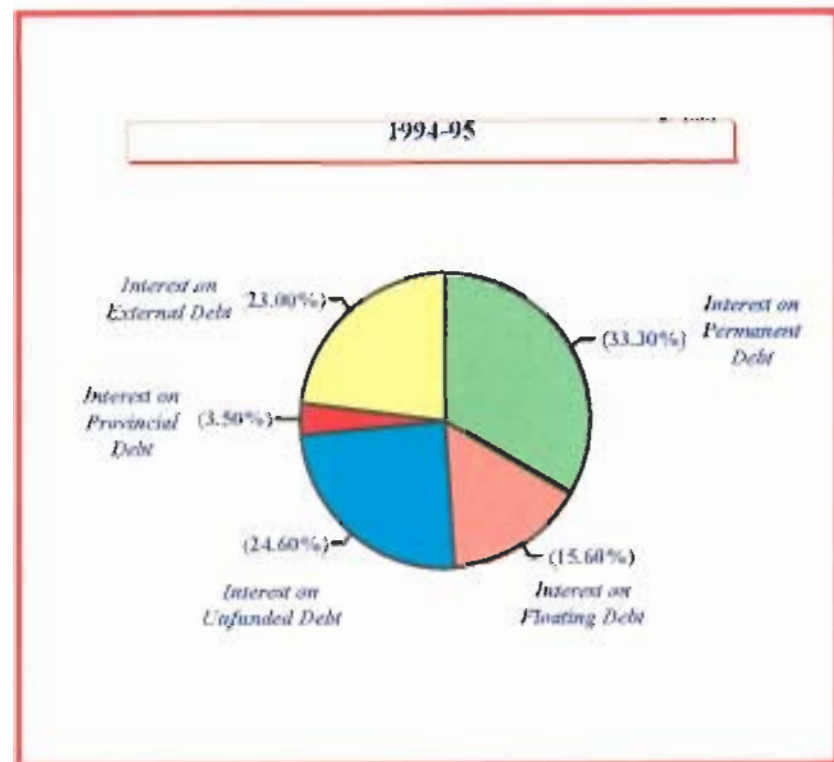
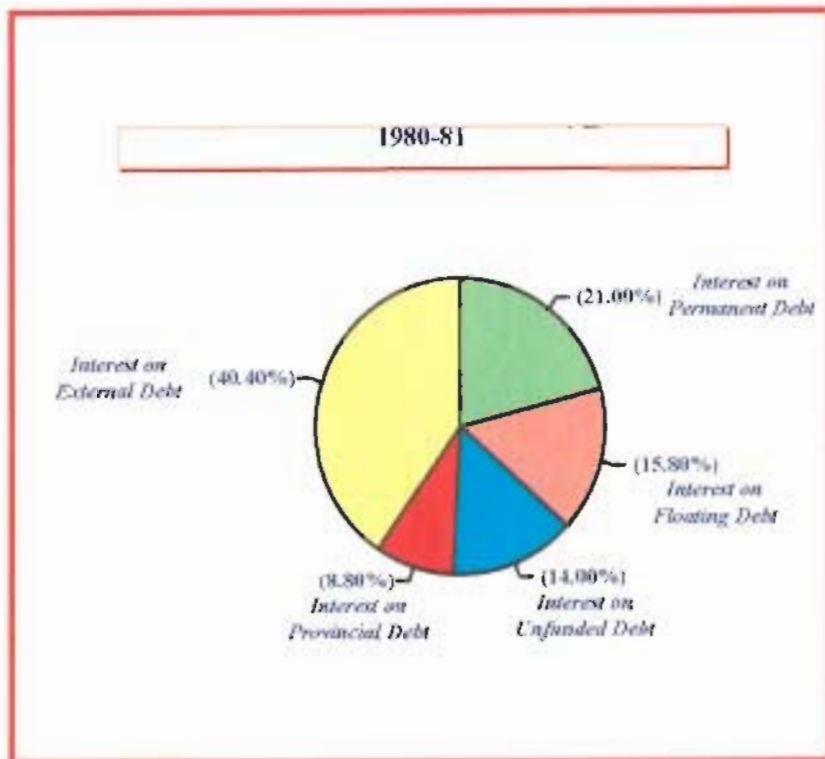
TABLE 9.2
GROWTH RATES IN INTEREST PAYMENTS IN THE PRE- AND POST FINANCIAL SECTOR REFORM PERIOD
(%)

Heads	GROWTH RATE IN INTEREST PAYMENTS	
	Pre-Reforms 1980-81 to 1990-91	Post Reforms 1990-91 to 1994-95
Federal Debt	27.9	21.6
• Permanent Debt	20.4	44.5
• Floating Debt	23.6	20.5
• Unfunded Debt	37.0	7.3
Provincial Debt	10.0	28.1
Total Domestic Debt	26.3	21.9
SOURCES: Derived.		

of domestic debt from 22 percent per annum in the 80s to less than 16 percent in the 1990s.

The rapid rise in interest payments on domestic debt has resulted in a structural change in the pattern of interest payments in the country. In 1980-81, over 40 percent of the interest

Chart Seven
Share of Interest Payments on Domestic and External Debt



paid was on external debt. This proportion has fallen down to 23 percent (See table 9.1). Within domestic debt, the share of interest payments on unfunded and permanent debt have increased over time while the significance of provincial interest payments has declined.

TABLE 9.3
INTEREST PAYMENT ON EXTERNAL DEBT

(Rs in Billion)

Years	INTEREST PAYMENT			
	Foreign Loans	IMF Drawings	Short-Term Borrowing	Total
1980-81	1.6	0.2	0.4	2.3
1981-82	1.3	0.6	0.9	2.8
1982-83	2.2	1.3	0.9	4.4
1983-84	2.8	1.5	0.8	5.1
1984-85	3.1	1.8	1.0	5.9
1985-86	3.9	1.7	0.7	6.4
1986-87	5.3	1.4	0.7	7.4
1987-88	6.3	1.1	0.9	8.2
1988-89	7.3	1.0	1.2	9.4
1989-90	9.3	1.2	1.0	11.4
1990-91	11.2	1.0	0.8	13.0
1991-92	12.8	0.8	0.9	14.6
1992-93	14.4	0.8	0.7	15.9
1993-94	17.8	0.9	0.9	19.6
1994-95	20.4	1.4	1.3	23.1
ACGR (%)	19.9	14.9	8.8	17.9
SHARE (%)				
1980-81	69.6	8.7	17.4	100.0
1990-91	86.2	7.7	6.2	100.0
1994-95	88.3	7.1	5.6	100.0
SOURCE: Annual Budget Statement, MOF.				

Similarly, the high growth in interest payments on foreign loans, of 20 percent, has increased its shares on the external debt side (see table 9.3). It is of some significance that interest payments on short term debt have not grown rapidly despite increased resort to short term borrowings (see Chapter 5).

9.2 Effective Interest Cost on Public Debt

What has been the trend in the effective interest cost of public debt? One way of analysing this is to compute the effective interest rate, which is the ratio of interest payments to

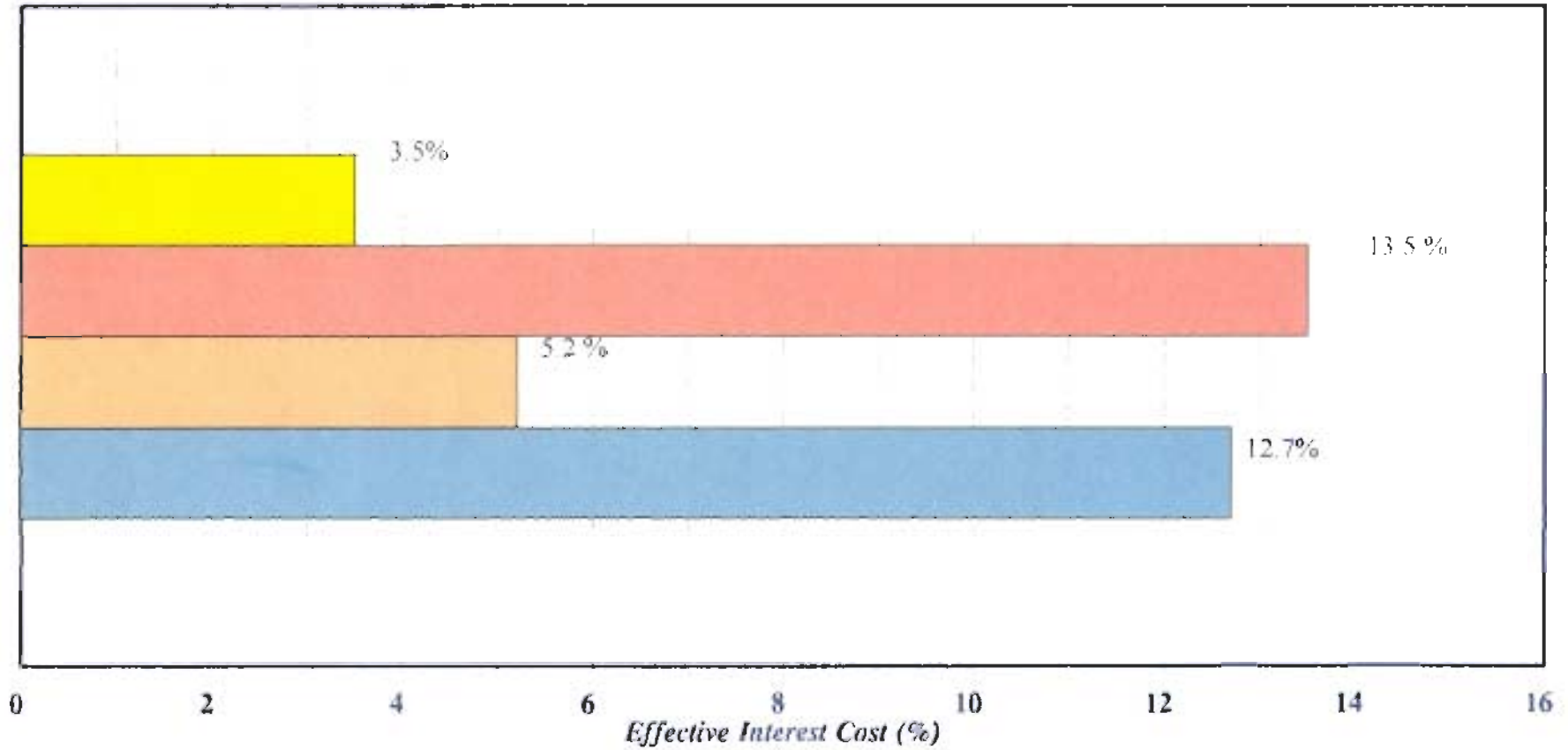
outstanding debt. Table 9.4 gives the effective interest costs of domestic and external debt.

TABLE 9.4
EFFECTIVE INTEREST COST* ON PUBLIC DEBT

Years	DOMESTIC DEBT				External Debt	Total Debt
	Permanent Debt	Floating Debt	Unfunded Debt	Total		
1980-81	9.1	2.8	7.0	5.2	2.6	4.0
1981-82	10.0	2.0	12.1	5.8	2.6	4.1
1982-83	10.1	3.1	14.3	6.9	3.5	5.1
1983-84	11.3	3.0	13.0	7.3	3.8	5.6
1984-85	8.9	2.6	15.5	7.0	3.8	5.4
1985-86	9.2	2.9	14.9	7.2	3.4	5.4
1986-87	6.5	3.1	13.7	6.8	3.5	5.4
1987-88	7.7	3.5	15.6	7.9	3.5	6.2
1988-89	13.2	3.5	13.8	7.9	3.1	6.3
1989-90	14.3	4.1	14.2	10.0	3.5	6.9
1990-91	7.8	5.0	13.6	8.8	3.5	6.3
1991-92	9.7	6.9	13.8	9.8	3.3	7.0
1992-93	11.8	8.9	13.6	11.1	3.1	7.6
1993-94	13.1	10.4	13.8	12.1	3.2	7.8
1994-95	12.7	5.2	13.5	10.1	3.5	7.1
ACGR (%)	2.4	4.5	5.0	4.8	2.1	4.2
* Calculated as follows: Effective interest Cost				$\frac{\text{Interest Payment}}{\text{Outstanding Debt}} \times 100$		
In the case of permanent and unfunded debt, the outstanding debt is lagged by one year.						
SOURCES: Derived.						

In 1994-95, the interest cost to the country of domestic debt was 10 percent while that of external debt was 3.5 percent (see Chart Eight). The latter does not include the cost arising from capital losses due to exchange rate depreciation. Therefore, in terms of the pure interest component, domestic debt is almost thrice as expensive as external debt. Also, it may be noticed that domestic debt is not only more expensive but its cost has also been rising more rapidly than the cost of external borrowing. The annual increase in effective interest rate on domestic debt is 4.8 percent as opposed to only 2.1 percent in the case of external debt.

Chart Eight
Effective Interest Cost On Public Debt, 1994-95



Permanent Debt (12.7%) Floating Debt (5.2%) Unfunded Debt (13.2) External Debt (3.5%)

TABLE 9.5
EFFECTIVE INTEREST COST OF
MAJOR DEBT INSTRUMENTS, 1994-95

(Rs in Billion)

Heads	Debt Servicing	Outstanding Debt	Effective Interest (%)
PERMANENT DEBT*	33.6	267.6	12.5
• Market Loans	2.0	24.2	8.4
• Prize Bonds	3.8	39.2	9.7
• FIBS	22.5	146.7	15.3
FLOATING DEBT	15.8	294.2	5.3
UNFUNDED DEBT*	24.8	180.2	13.3
• DSCs	6.8	64.4	10.5
• SSCs/Saving Accounts	11.8	100.9	11.8
SOURCES: Derived.			

Unfunded and permanent debt are the more expensive forms of debt for the government. The effective interest cost of the two currently is 13.5 percent and 12.7 percent respectively (see table 9.5). Within unfunded debt the most expensive instrument is special saving certificates/accounts while FIBs is the most costly instrument of raising permanent debt. Even though interest rates have increased in 1990s, floating debt continues to be the least expensive form of public debt.

It is interesting to note that the effective interest cost of DSCs in particular, is much lower than the nominal rate of return. In 1994-95, the interest cost is only 10½ percent while the nominal rate of return ranges from 13-16 percent depending on the period of maturity. This may be a consequence of a number of factors. First, the age profile of the DSCs is such that bulk of the investment will mature in the future when accrued interest will be paid. It, therefore, appears that the debt servicing liability of DSCs has partially been postponed. However, as shown in Appendix III the effective interest cost of DSC is lower than the

nominal rate of return if the annual growth of new funds into DSC exceeds the interest rate. The larger the gap the lower the effective interest cost.

9.3 *Underlying Factors Responsible for Growth in Effective Interest Rate*

The effective interest cost of domestic debt almost doubled in the 80s from 5.2 percent to 10 percent (see Table 9.5). What explains the rise in the effective interest cost, particularly in the 1980s, when nominal interest rates largely remained unchanged?

To answer this question we have decomposed the increase in effective interest cost into its components. The overall increase in the effective interest cost may be consequence of, one, an increase in interest rates and, two, a compositional shift from cheap to expensive debt. That is,

$$\sum_{i=1}^3 \Delta EIF_i = \sum_{i=1}^3 \Delta I_i \left[\frac{D_i}{TD} \right] + \sum_{i=1}^3 I_i \left[\Delta \left[\frac{D_i}{TD} \right] \right] \quad (1)$$

i = permanent, floating and unfunded debt

EIC_i = Effective interest cost of the 'ith' debt

I_i = interest rate on the 'ith' debt

D_i = Outstanding Debt of the 'ith' type

TD = Total Outstanding debt

Σ = Sum

The first component of the right hand side (RHS) of equation (6-1) gives the interest rate effect, that is, increase in the effective interest cost arising due an increase in the interest rate. The second component gives the compositional effect, which captures the impact on the overall interest cost of a change in the share of different types of debt in the total outstanding debt. A shift of the debt profile to more expensive forms will result in a rise in interest payments.

TABLE 9.6
DECOMPOSITION OF THE INCREASE
IN EFFECTIVE INTEREST COST ON DOMESTIC DEBT

(%)

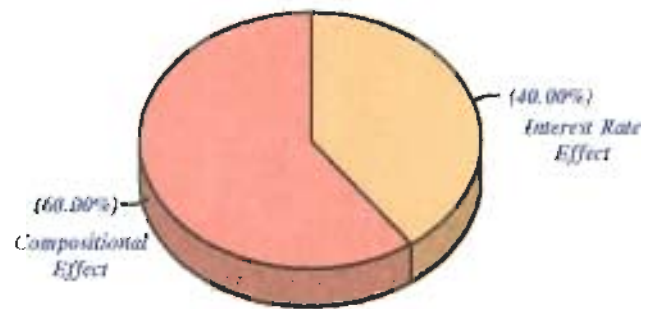
Change in Effective Cost Due to:	1980-81 to 1990-91	1990-91 to 1994-95
Interest Rate Effect	0.78	2.60
• Permanent Debt	-0.72	1.94
• Floating Debt	0.98	0.62
• Unfunded Debt	0.52	0.04
Compositional Effect	1.10	-0.24
• Permanent Debt	-0.92	1.23
• Floating Debt	-0.29	-0.22
• Unfunded Debt	2.31	-1.25
Total Effect	1.88	2.36
SOURCES: Derived.		

Table 9.6 shows that the 1.88 percentage point increase in the effective interest rate on domestic debt during the 80s was primarily due to the change in the structure of domestic debt. As noted in chapter seven, there was a shift from permanent and floating to unfunded debt, implying higher resort to more expensive forms of debt. The compositional effect was responsible for about 60 percent of the total increase in effective rates during this period. There was a stimulatory interest rate effect also largely due to an increase in the effective interest cost of floating and unfunded debt. The latter was a consequence of the introduction of high return saving schemes like the KDCs.

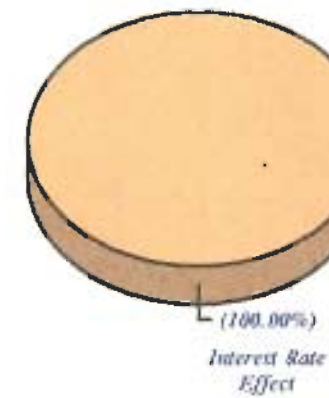
In contrast to the 80s, increase in interest cost in the 1990s is primarily due to the interest rate effect (see Chart Nine). It seems that launching of high return schemes like FIBs has increased the cost of permanent debt in recent years. Also, institution of market based interest rates as part of the financial sector reforms has considerably increased the cost of floating debt to the government. Likewise, there has been some increase in the effective rate

Chart Nine
Factors Responsible for growth in Effective Interest Cost, Pre and Post
Financial Sector Reforms

Pre-Reforms (1980-81 to 1990-91)



Post-Reforms (1990-91 to 1994-95)



of return on unfunded debt. Altogether, effective interest rate has increased by about 2.6 percentage points in the last five years due to the interest rate escalations.

Interestingly, change in the debt profile in the 1990s has exerted a downward pressure on the interest cost. As can be seen from the table, the shift from unfunded to permanent debt has been favourable from the interest cost point of view. The negative compositional effect has marginally mitigated against the stimulatory interest cost effect, otherwise the increase in effective interest cost would have been higher.

9.4 Policy Implications

The analysis in this chapter unambiguously highlights the high and rapidly increasing burden of interest payments in the country. In particular, the large increase in interest on domestic debt is identified as a major source of the debt servicing problem in the country. It is clear that efforts will have to be made to somehow keep the situation manageable. The focus of the strategy, it appears, will have to be on interest payments on domestic debt both because of the gravity of the problem and the relatively higher scope of maneuverability on the domestic side.

Chapter Ten

FACTORS CONTRIBUTING TO CHANGES IN INTEREST PAYMENTS TO GDP RATIO

We have highlighted earlier that interest payments to GDP ratio has risen rapidly during the last fifteen years from about 2 percent of the GDP in 1980-81 to almost 5½ percent of the GDP in 1994-95. This has been the major factor responsible for keeping the national budget deficit at high levels even though efforts have been made, especially in recent years, to bring down the primary budget deficit. In fact, the increase in interest payments has outpaced the growth in public debt, as shown in Table 10.1.

Period	Annual Growth Rate		Difference
	Public Debt	Interest Payments	
1980-81 to 1989-90	19.4	26.3	6.9
1989-90 to 1994-95	14.9	17.2	2.3

SOURCE: Derived.

10.1 Results of Analysis

The basic question that arises is what part of the increase in the interest payments to GDP ratio can be attributed to the rise in interest rates. It is important to realise that an increase in interest rates contributes not only to a rise in the costs of servicing a given amount of debt but also leads to a higher level of indebtedness. This can be seen clearly from equation (13) in Chapter 6. An increase in the nominal interest rate, other things being equal, raises i , the real interest rate, and causes thereby a bigger increase in the debt/income ratio, D/y .

In order, therefore, to quantify the consequences of rising interest rates on the level of public debt, we estimate, with the help of equation (13), the annual increase in the public debt to

GDP ratio given the observed magnitudes of the primary budget deficit (PBD), real exchange rate depreciation ($d\epsilon_r/\epsilon_r$), etc. but with the nominal interest rate held constant at the 1980-81 level. Resulting estimates of debt are given in table 10.2. It may be observed that as a result of the rise in interest rates during the period the level of public debt is about 17 percent higher than what it would have been if interest rates had remained unchanged at the 1980-81 levels.

Years	Actual Public Debt*	Projected Public Debt (with effective interest cost at 80-81 level)	Actual Interest Payments*	Projected Interest Payments (with effective interest cost at 80-81 level)	% Difference between Actual & Projected Interest Payments
1981-82	214.4	214.2	7.7	7.5	2.3
1982-83	256.9	255.7	11.1	9.8	13.3
1983-84	290.9	288.0	14.1	11.7	20.5
1984-85	353.8	349.0	16.5	13.2	25.0
1985-86	440.8	433.5	19.7	16.0	23.1
1986-87	523.4	514.1	23.8	19.9	19.6
1987-88	591.1	572.9	33.2	23.5	41.3
1988-89	706.2	678.3	38.3	26.2	46.2
1989-90	808.5	766.9	46.7	31.1	50.2
1990-91	975.8	917.9	50.1	35.1	42.7
1991-92	1110.4	1027.1	62.3	42.0	48.3
1992-93	1288.3	1174.8	78.8	47.0	67.7
1993-94	1487.3	1319.9	90.9	53.8	69.0
1994-95	1616.7	1386.4	101.2	60.5	67.3

Interest Payments/GDP in 1980-81 = 2.0%
 Interest Payments/GDP in 1994-95 = 3.2%
 (with interest rates at 80-81 levels)
 Actual Interest Payments/GDP in 1994-95 = 5.5%
 * With World Bank estimates of external debt and PES estimates of interest payments except for 1993-94 and 1994-95
SOURCE: Derived.

Based on these estimates, we can also work out what the level of interest payments would have been if the effective interest cost had remained fixed at the 1980-81 level. As shown in the table, this is estimated at about Rs 60 billion in 1994-95, about Rs 43 billion less than the actual level. It appears that at the effective interest cost of 1980-81 the ratio of interest payments to GDP would have reached 3.2 percent by 1994-95 due to the contribution of primary budget deficits, exchange rate depreciation, etc., to raising the level of indebtedness.

An additional 2.3 percent of the GDP in interest payments is due to the rise in interest costs from 1980-81 to 1994-95. This underscores the need to keep the interest rates on government borrowing to as low a level as possible. It highlights, in particular, the difficulties that have been experienced after 1991 with the government moving away from a captive market to the open market for funds and being compelled to pay more on new debt, especially of a short term character.

PART FIVE
IMPACT OF FINANCIAL
SECTOR REFORMS

Chapter Eleven

IMPACT OF FINANCIAL SECTOR REFORMS ON DEBT SERVICING AND THE FISCAL DEFICIT

One of the major terms of reference of the study is to evaluate the impact of financial sector reforms on the level of debt servicing, primarily in terms of the rise in interest rates on government borrowing. Prior to the introduction of the 1991 reforms an elaborate system of regulations and controls governed the financial system, involving directed credit and concessionary interest rates. Under this financial regime of ceilings, banking institutions provided Government of Pakistan with captive funds for financing its expenditures at low interest rates and were forced to invest in low yielding government securities like treasury bills on tap carrying an interest rate of only 6 percent.

The key element of the reforms with direct implications on the cost of government borrowings is the introduction of an auction system for government securities both for short-term debt (treasury bills) and medium-to-long term debt (federal investment bonds). Interest rates on treasury bills at auctions have fluctuated between 12 percent and 13 percent while the rate of return on FIBS ranges from 13 percent to 15 percent.

11.1 Impact on Effective Interest Rates

The objective of this chapter is to quantify the impact of the financial sector reforms on the level of debt and interest payments. This primarily involves analysis of effect of rising interest rates after 1991, especially on domestic debt. Table 11.1 highlights the fact that in the late 80s the overall interest cost on debt had tended to stabilise around 7 percent. Since 1991-92 there is a noticeable increase in the average interest rate which has crossed the level of 8½ (see Chart Ten). In the immediate aftermath of the reforms the full impact was not seen because of the carry over of debt, especially with long maturity, which was contracted

Chart Ten
Effective Interest Cost of Public Debt with and without
Financial Sector Reforms

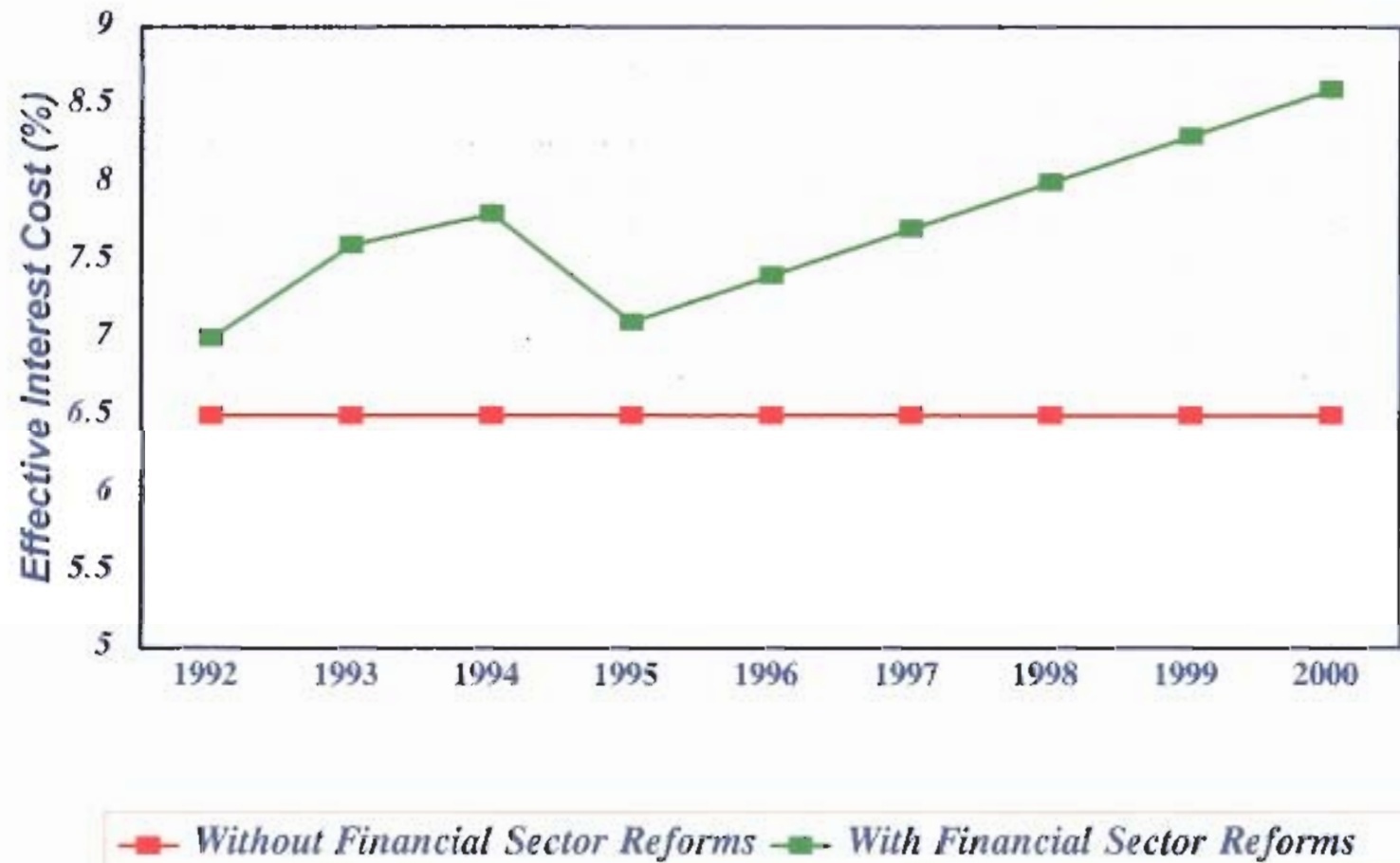


TABLE 11.1
EFFECTIVE INTEREST COST OF PUBLIC DEBT WITH
AND WITHOUT FINANCIAL SECTOR REFORMS

Years	Without Financial Sector Reforms	With Financial Sector Reforms
1991-92	(P) 6.5	(A) 7.0
1992-93	(P) 6.5	(A) 7.6
1993-94	(P) 6.5	(A) 7.8
1994-95	(P) 6.5	(A) 7.1
1995-96	(P) 6.5	(A) 7.4
1996-97	(P) 6.5	(P) 7.7
1997-98	(P) 6.5	(P) 8.0
1998-99	(P) 6.5	(P) 8.3
1999-2000	(P) 6.5	(P) 8.6

A = Actual, P = Projected

SOURCE: Derived.

prior to 1991 at relatively low interest rates. This implies that as new borrowings take place from the capital market at interest rates in excess of 13 percent generally the average cost of debt will continue to rise in coming years and may approach 9½ percent to 10 percent. Therefore, the full impact of the financial sector reforms on debt servicing remains to be seen.

Table 11.1 indicates the potential impact of the financial sector reforms after 1991 on the average interest cost of debt. We derive the implications of the different paths of interest rates on the size of public debt and the level of debt servicing.

11.2 The Model

Based on the model developed in appendix II, the evolution of the debt to income ratio can be expressed as

$$\frac{B_t}{Y_t} = \frac{B_{t-1}}{Y_{t-1}} \left[\frac{1 + r_t + \epsilon_t}{1 + \delta_t} \right] + \alpha_t \quad [1]$$

where B_t = outstanding public debt in year t, y_t = GDP in year t, r_t = interest rate on debt in year t, ϵ_t = rate of capital loss on debt in year t due to exchange rate depreciation, δ_t = growth rate of nominal GDP in year t and α_t = primary budget deficit as proportion of GDP in year t.

TABLE 11.2
PROJECTED DEBT AND INTEREST PAYMENTS IN THE ABSENCE
OF FINANCIAL SECTOR REFORMS

Years	DEBT			INTEREST PAYMENTS		
	Projected in the Absence of FSR	Actual/Projected in the Presence of FSR	Difference	Projected in the Absence of FSR	Actual/Projected in the Presence of FSR	Difference
(RS IN BILLION)						
1991-92	961.4	961.4	0.0	60.2	65.4	5.2
1992-93	1113.5	1125.2	11.7	70.2	80.3	10.1
1993-94	1289.2	1322.2	33.0	81.3	98.6	17.3
1994-95	1417.2	1473.4	56.2	94.1	100.9	6.8
1995-96	1629.0	1689.8	60.8	103.5	121.2	17.7
1996-97	1874.5	1950.4	75.9	118.9	142.8	23.9
1997-98	2156.8	2268.3	111.5	136.8	165.8	29.0
1998-99	2481.4	2644.8	163.4	157.4	198.5	41.1
1999-2000	2854.7	3091.6	236.9	181.1	229.5	48.4
(% of GDP)						
1991-92	79.4	79.4	0.0	5.0	5.4	0.4
1992-93	83.0	83.9	0.9	5.2	6.0	0.8
1993-94	82.4	84.6	2.2	5.2	6.3	1.1
1994-95	75.4	77.9	2.5	5.0	5.4	0.4
1995-96	74.7	77.0	2.3	4.7	5.6	0.9
1996-97	74.1	77.1	3.0	4.7	5.6	0.9
1997-98	73.5	77.3	3.8	4.7	5.7	1.0
1998-99	72.9	77.7	4.8	4.6	5.8	1.2
1999-2000	72.3	78.3	6.0	4.6	5.8	1.2

FSR = Financial Sector Reforms.
SOURCE: Derived

11.3 Impact on Public Debt and Interest Payments

Results of the projections are given in Table 11.2. The following conclusions emerge from the results:

- (i) By 1995-96, the process of financial sector reform has implied a higher public debt to GDP ratio by about 2½ percentage points. The difference is expected to increase to about 6 percentage points by the turn of the century.
- (ii) Rising interest rates associated with the process of financial sector liberalisation have already implied higher interest payments of about 0.5 to 1 percentage points of the GDP annually. In this respect the budget deficit has been higher. For example, in 1994-95 the budget deficit stood at 5½ percent of the GDP. In the absence of changes in the mechanisms and costs of borrowing it would have been about 5 percent of the GDP. Over the next few years, the higher interest costs will imply that interest payments will be larger by about 1 percent of the GDP.

The initial expectation that part of the higher interest costs will be recovered through larger non-tax revenues arising from correspondingly higher profits of the SBP and the nationalised commercial banks has largely not materialised because of losses incurred by SBP in providing foreign exchange cover and running concessionary credit lines while profitability of commercial banks has been impaired by rising overhead costs and debt default.

Altogether, while the financial sector reforms pursued since 1991 have had a number of favourable consequences like the move towards a more rational, efficient and market based monetary policy and greater diversification of financial institutions alongwith more rapid growth of bank deposits, they appear to have had an adverse impact on the fiscal deficit by raising the burden of servicing of public debt. In this respect the sequencing of economic reforms in Pakistan during the 90s may not have been optimal. Perhaps a more prudent policy would have been first to bring about structural changes in fiscal policy so as to reduce the level of government borrowings and then to remove the lid on interest rates as part of

the liberalisation process. This point has also been made by Leite [1993] who strongly suggests that given the interplay between financial sector reforms and public debt management it would be imprudent to undertake such reforms without due consideration of public debt issues. In the Pakistani setting, it is clear that the early adoption of these reforms has made the task of reducing the budget deficit more difficult.

PART SIX
THE POLICY PACKAGE

Chapter Twelve

SCOPE FOR SEIGNORAGE IN PAKISTAN'S ECONOMY

The first major issue of policy is the extent to which governments can resort to seignorage (money creation) to finance budget deficits. This corresponds to the imposition of an inflation tax. In this respect it does not add to the debt servicing burden. However, there are limits to the extent to which this financing mechanism can be used.

12.1 Mechanisms of Financing Budget Deficits

We have identified in Chapter 3 four ways of financing public sector deficit; (i) by printing money, (ii) running down foreign exchange reserves, (iii) borrowing abroad and (iv) borrowing domestically. Each form of financing is potentially a substitute for the other. To the extent that the fiscal deficit can be financed through money creation, for example, new debt, either domestic or external, which generates interest obligations will not be incurred. The question thus arises as to what prevents a government from financing the entire budget by money creation. The problem is that excessive money creation can lead to runaway inflation. This places a limit both politically and economically on the extent to which this approach can be adopted to financing deficits. The objective of this chapter is to determine in the Pakistani setting the scope for seignorage which is safe and does not lead to high rates of inflation.

12.2 The Inflation Tax

Printing of money to finance budget deficit, referred to as monetization of the budget deficit, is an alternative to explicit taxation. Governments can obtain significant amounts of resources by simply printing money which corresponds to an inflation tax (closely defined).

The amount of revenue that can be obtained from seignorage is determined by a number of factors. These include the demand for base or high powered money in the economy, the real rate of growth of the economy, and the elasticity of the demand for real balances with respect to inflation and income. As highlighted by Easterly and Fisher [1990] if the income elasticity of the demand for base money is unity, then with the currency to GNP ratio of about 13 percent, as in Pakistan, for every one percentage point that GNP increases, the government can obtain 0.13 percentage points of GNP in revenues through printing of money that just meets the increased demand for real balances. With an annual economic growth rate of 6.5 percent, the government should be able to obtain nearly 0.9 percent of GNP for financing the budget deficit through the non inflationary printing of money, increasing the high powered money stock at an annual rate of 6.5 percent. Beyond that rate of growth, inflation will result.

Specifically, the relationship between seignorage and the demand for real balances is as follows:

$$\frac{\Delta M}{P} = \frac{(\tau + g) M}{P} \quad [1]$$

where

$\frac{\Delta M}{P}$ = inflation tax

τ = domestic rate of inflation

g = real GDP growth rate

M = base or high powered money

P = domestic price level

$\frac{M}{P}$ = real base money

If the demand for real balances is inelastic with respect to the inflation, the government can potentially mobilise large amounts of resources through money creation. But the demand for

high powered money declines as the inflation rate rises. This implies that there are two opposing forces in equation (1). Higher inflation rate reduces the demand for real money balances. As such government revenues from seignorage reaches a maximum and declines thereafter because high inflation actually contracts the revenue base, that is, demand for real base money.

12.3 Sustainable Level of Seignorage for Pakistan

To what extent can debt crisis be avoided and a large budget deficit be financed through seignorage or inflation tax? To estimate the relationship between seignorage and inflation, there is need to first estimate the base money in Pakistan. We have focused on the major component of base money which is currency in circulation, with a share of almost 80 per cent. The remainder which consists primarily of reserves of commercial banks held with the SBP can be regulated by policy. For the period, 1972-73 to 1994-95, demand for currency has been estimated for Pakistan as follows:

$$\ln \text{CCP} = -0.2745 + 0.2185 \ln y - 0.0081 \tau + 0.7651 \ln \text{CCP}_{-1} \quad [2]$$

(-0.345) (0.825) (-3.80)* (3.62)*

$\bar{R}^2 = 0.99$; $D-W = 2.50$; No of observations = 22

* Significant at 5% level.

where:

CCP = currency in circulation

y = real income

τ = rate of inflation

The above results show that as expected, demand for currency in Pakistan increases with a rise in income and decreases with the inflation rate. The long run elasticity of currency in circulation with respect to income is estimated to be close to unity, at about 0.94, while with respect to inflation the elasticity is negative but low. As such, there appears to be a

relatively greater scope for seignorage in Pakistan compared to some other developing countries.

Using equation (1) and (2) table 12.1 gives the level of seignorage for various inflation rates. The table shows a rapid rise in seignorage with an increase in inflation rate. It attains a peak of about 2.6 per cent of the GDP at an inflation rate of 25 percent, and then falls. For the same inflation

TABLE 12.1
RELATIONSHIP BETWEEN INFLATION RATE
AND SEIGNORAGE IN PAKISTAN

Rate of Inflation	Level of Seignorage (% of GDP)	
	GDP Growth rate (5%)	GDP Growth rate (6%)
0	1.195	1.293
5	1.843	1.927
10	2.256	2.327
15	2.492	2.551
20	2.596	2.646
25	2.605	2.647
30	2.546	2.582

rate, scope for seignorage is greater with a higher GDP growth rate. If the inflation rate target is 10 percent then the degree of seignorage possible is about 2.3 per cent of the GDP. Beyond 10 per cent inflation rate, seignorage revenues rise slowly and start falling beyond an inflation rate of 25 per cent.

Levels of seignorage appear to be relatively high in Pakistan because of the repression historically of the financial sector and a relatively large size of the black economy operating largely on the basis of cash transactions. However, as the process of financial intermediation and the banking system develops in the country it can be expected that the scope for seignorage will diminish over time.

12.4 Historical Levels of Seignorage

We have estimated the level of seignorage historically in Pakistan as corresponding to the change during a particular year in the claims of the monetary authority (the SBP) with the government. The resulting estimates are presented in table 12.2. The average annual rate of seignorage for the period, 1980-81 to 1994-95, is 1.7 percent of the GDP with relatively high levels of money creation in years like 1981-82 and 1991-92 when it approached 3 per cent of the GDP. By and large,

TABLE 12.2
SEIGNORAGE IN PAKISTAN

Years	Seignorage* (Rs in Billion)	Seignorage as % of GDP
1980-81	3.7	1.33
1981-82	10.5	3.24
1982-83	4.0	1.10
1983-84	10.3	2.45
1984-85	12.9	2.73
1985-86	8.3	1.61
1986-87	5.1	0.89
1987-88	9.6	1.42
1988-89	7.2	0.94
1989-90	18.9	2.21
1990-91	19.4	1.90
1991-92	35.0	2.89
1992-93	32.5	2.42
1993-94	-13.8	-0.86
1994-95	31.0	1.65
AVERAGE		
80s	—	1.79
90s	—	1.60
Overall	—	1.73
* This has been proxied by the annual increase in SBP's claims on central government.		
SOURCE: International Financial Statistics, IMF.		

governments in Pakistan have resorted in a limited manner to seignorage so as not to create inflationary tendencies in the economy.

12.5 Policy Implications

Higher scope appears to exist for generating inflation tax revenues in Pakistan compared to some other countries. The maximum level of seignorage in Pakistan is around 2.6 percent of GDP which can be achieved at a 20 to 25 percent inflation rate. However, the additional

inflation tax revenue gains at these levels are very limited compared to the incremental cost incurred in terms of a higher inflation rate. Given the concomitant economic and political implications associated with such a high inflation levels, the prudent policy for Pakistan appears to be to continue to target for lower levels of seignorage so as to keep the long term inflation rate at about 10 percent.

Chapter Thirteen

RATIONALISATION OF INTEREST RATES

An important cornerstone of the policy package for improved management of public debt is to make the interest rate structure on key debt instruments efficient, neutral and consistent with their characteristics. The purpose of this chapter is to examine the scope for rationalisation of interest rates on key debt instruments in Pakistan.

Analysis undertaken in Chapter 8 indicates that major determinants of interest rates on debt instruments relate to ownership, liquidity, maturity period and degree of anonymity (registered or bearer). The major conclusion is that interest rates on government paper, on short maturity, liquid and bearer instruments is likely to be lower. Based on these results it is possible to estimate the rate of return which is consistent with the characteristics of a particular debt instrument. Deviation of existing from the estimated rates highlights that the current rate structure is not entirely consistent with the key characteristics of the debt instruments and therefore, scope exists for alterations in them.

13.1 Suggested Rates of Return

Table 13.1 gives the current actual and suggested gross rates of returns on key instruments. By and large, the general pattern appears to be that relatively higher returns are currently being offered on lower-to-medium maturity instruments while the opposite holds true in the case of certificates with longer maturity. This is the case with DSCs, FIBs and FEBCs. In the case of FIBs, for example, rates offered for maturity period of up to 5 years appear higher than they should be while beyond that the rate is lower than that derived from equation (1) in Chapter 8. Similarly, rates are lower for long term maturity period DSCs

while a higher than necessary return is currently being offered for earlier encashment (see Chart Eleven).

Analysis also shows that a somewhat higher return is offered on registered SSCs, than is justified on the grounds of their characteristics. In fact, the government has recently increased further the return on SSCs. Therefore, even though this represents high cost debt the government has attempted to make this instrument relatively more attractive.

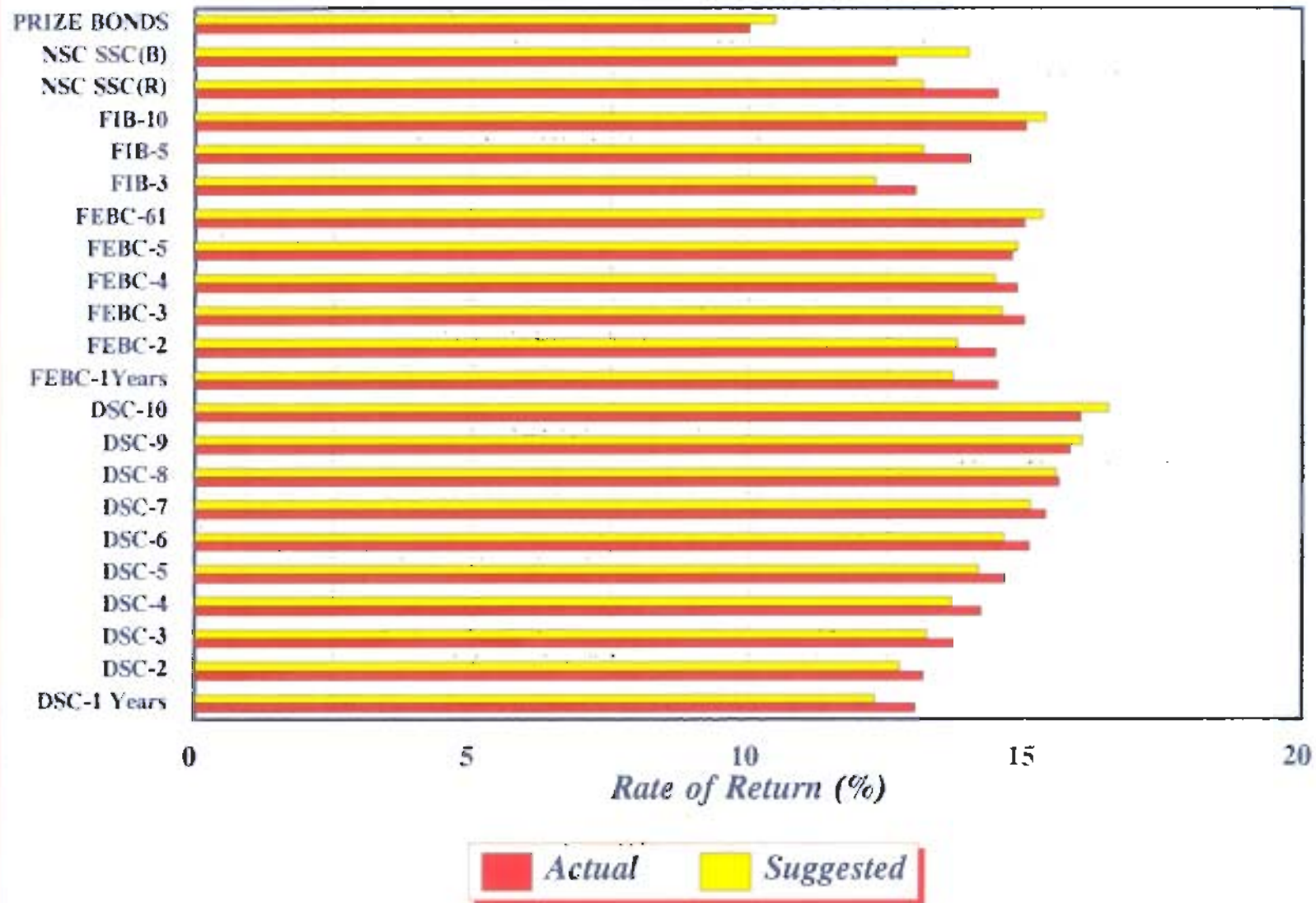
TABLE 13.1
ACTUAL VS SUGGESTED
RATES OF RETURN ON DEBT INSTRUMENTS

Heads	Actual Gross (Pre-tax) Return	Suggested (Gross (Pre-Tax) Return	Difference
DSC-1 Years	13.00	12.27	-0.73
DSC-2 Years	13.14	12.74	-0.40
DSC-3 Years	13.70	13.21	-0.49
DSC-4 Years	14.19	13.68	-0.51
DSC-5 Years	14.64	14.15	-0.49
DSC-6 Years	15.06	14.62	-0.44
DSC-7 Years	15.37	15.09	-0.28
DSC-8 Years	15.60	15.56	-0.04
DSC-9 Years	15.82	16.03	0.21
DSC-10 Years	16.00	16.50	0.50
FEBC-1 Years	14.50	13.70	-0.80
FEBC-2 Years	14.46	13.77	-0.69
FEBC-3 Years	14.98	14.58	-0.40
FEBC-4 Years	14.85	14.46	-0.39
FEBC-5 Years	14.75	14.88	0.13
FEBC-61 Years	14.97	15.32	0.35
FIB-3 Years	13.00	12.27	-0.73
FIB-5 Years	14.00	13.15	-0.85
FIB-10 Years	15.00	15.36	0.36
NSC SSC (R)	14.50	13.13	-1.37
NSC SSC (B)	12.67	13.98	1.31
NSC-Monthly Prize Bonds	14.64	—	—
Bearer NFB	10.00	10.47	0.47
Bearer NFB	13.00	—	—

SOURCE:
• Central Directorate of National Savings.
• Derived.

By offering differentially higher returns, it appears that the government has implicitly encouraged short to medium term maturity registered instruments. The latter is perhaps consistent with the objective of increasing documentation in the economy. The rationale for the former, however, is not entirely clear. Shorter period debt holdings are likely to place frequent cash flow demands on public exchequer. Incremental debt to finance interest is,

Chart Eleven
Actual vs Suggested Rates of Return on Debt Instruments



therefore, incurred at shorter intervals and the debt rollover takes place more frequently. Also, noticeable is the low rate offered on prize bonds. Given that these are the least cost debt instruments, some increase in the effective interest rate is justifiable.

13.2 Link With Rate of Inflation

Uptil now, the government has followed the policy of keeping nominal rates of return generally constant (see Chapter 7). This has implied that in years when the inflation rate is high, as in 1994-95, the real rates of return are low while in years when the rate of inflation is low the real rates of return are high. Therefore, the government has followed a constant nominal return but variable real return policy on debt instruments, whereas the desirable policy from the viewpoint of sustaining the flows of funds is a constant real return but variable nominal return policy. This implies that the government must follow a policy of at least partially indexing the nominal rates of return to the underlying rate of inflation. The prospects of switching from low cost old debt to high cost new debt in the event that interest rates are adjusted upwards is limited by the presence of a 'lock-in' effect arising from the positive relationship between the rate of return and the period of holding and the payment of Zakat at encashment. For example, in 1995-96, inflation is expected to come back to a single digit rate once again. As such, there may be a case for slowly bringing down rates of return on voluntary savings schemes rather than enhancing them as has been done recently.

Chapter Fourteen

INVESTMENT IN VOLUNTARY SAVING SCHEMES

As highlighted in previous chapters, the government of Pakistan heavily depends on voluntary saving schemes to generate borrowings which finance a substantial component of the fiscal imbalance. It competes with the commercial banking sector, the DFIs and other public sector corporations to attract both personal and institutional investors. This has particularly been the case in the aftermath of the financial sector reforms which has abolished captive market for government securities. It thus becomes important to see what determines investment in government's voluntary saving schemes. The key questions are does investment depend on the rate of return offered on a particular instrument? Is the rate of return offered on other investments important? What is the elasticity of investment in particular instruments with respect to savings in the economy? The knowledge of these issues is an important prerequisite to the understanding of the investment market and formation of any policy package for the voluntary saving schemes in the country. In this chapter we try to address these issues.

14.1 Determinants of Investment in Voluntary Saving Schemes

The model developed to analyse the determinants of investment in key debt instruments in Pakistan has been designed to specifically address the issues raised above. We have

$$INV_i = f (PS, ORR_i, RRS_j) \quad [1]$$

Where:

INV_i	=	Investment in the 'ith' instrument
PS	=	Total Private Savings
ORR_i	=	Real Rate of Return on the 'ith' instrument
RRS_j	=	Real Rate of Return on other 'jth' investments.

Investment in a particular saving scheme is hypothesized to be a function of total private savings, the rate of return offered and the rates of return on other investments, both in real terms. The higher the level of savings in the economy, the higher the investment in a particular scheme is likely to be. Similarly, investment is likely to rise if the rate of return offered is increased. In a free market situation, with competition among saving schemes, higher rate of return offered in competing schemes is likely to divert investment from a particular scheme.

In Pakistan, major avenues of portfolio investment includes bank deposits, different types of government saving schemes, and the stock market. If, for example, the stock market is buoyant (indicating higher capital gains) investors may divert funds from relatively low yield, risk-free government investment schemes to the stock market. Similarly, the government may introduce or revise schemes which may potentially substitute for an existing government scheme and thereby divert investment from it. An example of this is the introduction of FIBs in the 1990s. This may have diverted investment from traditional government saving schemes like DSCs, etc. as a secondary market develops. Also, as highlighted earlier, there is a link between inflation and investments in saving schemes. To secure the value of his/her earnings, particularly in times of high inflation, real rather than nominal rate of return is considered more important by the investors. As such, in the analysis, real rather than nominal rates of return have been used.

14.2 Estimation and Results

The above model has been applied to key government saving schemes which includes the DSC, KDS/SSC, and prize bonds. The former two currently account for over 70 percent of the outstanding unfunded debt. Prize bonds alongwith FIBs are the key instruments which generate permanent debt in the country. FIBs have only recently been introduced (in the

1990-91) and, therefore, cannot be analysed in a time series framework. The analysis has been undertaken for the period, 1973-74 to 1994-95. Table 13.1 gives data on the key variables. Results of estimation of the model in the case of investments in DSCs, are as follows:

$$\begin{array}{rcll}
 \text{INVDC} = & - 4991.3 & + 79.0 \text{ PS} & + 679.8 \text{ RRDSC} \\
 & (-2.41)^* & (7.23)^* & (1.51) \\
 & - 21.0 \text{ RRSPI} & - 624.1 \text{ RBDR} & - 3921.7 \text{ DFIB} \\
 & (-1.16) & (-1.66)^* & (-1.99)^*
 \end{array} \quad [2]$$

$\bar{R}^2 = 0.86$; D-W-Statistics = 2.59; ★ Significant at 10 percent level.

where:

- INVDC = net increase in outstanding debt in DSCs,
- RRDSC = real rate of return on DSCs,
- RRSPI = rate of appreciation in share price index,
- RBDR = rate of return on bank deposits
- DFIB = dummy variable with value of 1 after 1990-91 to capture the introduction of FIBs; Otherwise DFIB has value of 0.

As expected, investment in DSCs increases with an increase in the level of private savings, and their own real rate of return. An increase in either the rate of return on bank deposits or the share price index diverts funds from DSCs, the former impact being much stronger. This substantiates the view that DSCs and bank deposits have an overlapping set of investors largely with small to medium sized holdings.

It appears that a major competitor of DSC is no other but one of the other recently introduced government permanent debt instrument, the FIBs. The negative and significant dummy of FIB indicates that investment funds are being diverted from DSCs to FIBs through the secondary market. It appears that the principal reasons for this diversion is the difference in the rates of return offered and the frequency of interest payment, the return on and the frequency of the latter being higher. The effective interest cost of DSCs to the government is 11 per cent while that of FIBs is close to 15 per cent. Therefore, to the extent that there

TABLE 14.1
NET INFLOWS OF FUNDS INTO DEBT INSTRUMENTS
AND DATA ON DETERMINANTS

(Rs in Million)

Years	Defence Saving Certificates		Khas Deposit Certificates/Special Savings		Prize Bonds [INVPB]	Private Savings (Rs in Billion)	Share Price Index (1990-91 = 100)	Rate of Return on Deposits BDR (%)
	Investment in DSCs	Rate of Return (%)	Investment in KD/SSC	Rate of Return (%)				
1973-74	10	15.60	307	13.4	130	6.3	19.87	7.19
1974-75	35	15.60	150	13.4	147	7.3	20.55	9.09
1975-76	191	15.60	135	13.4	196	12.3	21.58	9.80
1976-77	223	15.60	146	13.4	23	13.3	22.66	10.24
1977-78	419	15.60	346	13.4	116	20.9	23.79	10.72
1978-79	407	15.60	165	13.4	214	20.4	29.21	10.93
1979-80	297	15.25	225	12.61	188	24.4	33.94	11.06
1980-81	463	15.25	26	12.61	285	30.5	30.10	11.19
1981-82	853	15.25	1466	12.61	1967*	35.5	29.80	12.02
1982-83	1272	15.25	2540	12.61	5736	57.3	29.88	11.04
1983-84	1547	15.25	3207	12.61	4260	54.7	39.22	11.79
1984-85	2034	15.25	4273	12.61	343	59.2	54.33	11.58
1985-86	2719	15.25	7858	12.61	2440	67.8	52.54	11.38
1986-87	3899	15.25	8129	12.61	3737	94.4	51.00	11.72
1987-88	5190	15.25	9767	12.61	1031	83.1	66.36	11.31
1988-89	4450	15.25	7249	12.61	1422	106.9	77.65	11.55
1989-90	9783	15.25	5619	12.73	2342	97.2	81.42	10.50
1990-91	6738	15.25	1904	13.56	3022	137.6	100.00	9.24
1991-92	5611	15.25	1235	12.90	1843	155.0	190.80	10.21
1992-93	5490	15.25	15677	13.73	4904	161.8	164.44	9.96
1993-94	11370	15.74	565	14.06	4645	205.9	243.16	9.60
1994-95	20655	15.99	74322	14.89	5436	261.2	232.47	9.54

SOURCES: Pakistan Economic Survey; Annual Report, SBP; Statistical Year Book, FBS.

has been a diversion of investment funds away from DSCs to FIBs the interest liability of the government has increased.

Investment in KDCs which were substituted by SSCs in 1990-91, is designated by INVKDSS. The estimated equation is as follows:

$$\text{INVKDSS} = \begin{matrix} -494.1 \\ (-0.52) \end{matrix} + \begin{matrix} 42.4 \text{ PS} \\ (4.79)^* \end{matrix} + \begin{matrix} 116.4 \text{ RRKDSS} \\ (1.09) \end{matrix} - \begin{matrix} 68.2 \text{ RRSPI} \\ (-2.67)^* \end{matrix} + \begin{matrix} 4166.3 \text{ D8488} \\ (2.75)^* \end{matrix} \quad [3]$$

$\bar{R}^2 = 0.60$; D-W-Statistics = 1.58;

Where:

RRKDSS = Rate of Return on KDCs and SSCs

D84-88 = Dummy which takes a value of 1 for the period 1985-86 to 1987-88

Results in Equation (3) show that investment in KDS/SSCs varies positively with increases in private saving and own real rate of return. A strong negative relationship exists between investments in KDS/SSC and the share price index. This indicates that a significant component of investors in KDS/SSC also invest in the stock market and depending on the rate of return, shift around their investment portfolio. Estimates show that for every one point increase in the share price index, investments in KDC/SSCs decrease by Rs 68 million.

In the case of prize bonds, investment increases with private savings and decreases with an increase in capital gains in the stock market as indicated by Equation (4).

$$\text{INVVPB} = \begin{matrix} -105.6 \\ (-0.45) \end{matrix} + \begin{matrix} 24.41 \text{ PS} \\ (10.99)^* \end{matrix} - \begin{matrix} 20.45 \text{ RRSPI} \\ (-3.31)^* \end{matrix} - \begin{matrix} 432.92 \text{ DBBI} \\ (-1.02)^* \end{matrix} + \begin{matrix} 3936 \text{ D8384} \\ (7.74)^* \end{matrix} \quad [4]$$

$\bar{R}^2 = 0.88$; D-W Statistics = 1.74; ★ Significant at 10 percent level.

Where:

INVVPB = Investment in prize bonds

DBBI = Dummy for

D83-84 = Dummy which takes a value of 1 for the period 1982-83 to 1983-84

14.3 Investment Elasticities

Based on the above equations we are in a position to estimate the elasticity of investment in saving schemes with respect to key variables. The elasticity coefficient gives the responsiveness of investment in a particular saving scheme to change in variables like private savings and own real rate of return.

Table 14.2 shows that DSCs are highly elastic with respect to private savings. The elasticity coefficient is 1.62, implying that a one percent increase in private saving in the economy is likely to increase investment in DSCs by over 1.6 percent. As such

TABLE 14.2
ELASTICITY OF INVESTMENT IN SAVING SCHEMES
WITH RESPECT TO PRIVATE SAVINGS AND
REAL RATE OF RETURN

HEADS	ELASTICITY WITH RESPECT TO	
	Private Savings	Real Rate of Return
INVESTMENT IN:		
DSC	1.618	0.874
KDC/SSC	0.871	0.075
PRIZE BONDS	0.923	N.A
SOURCE: Derived		

at appears that DSCs are relatively attractive investments, representing a buoyant source of borrowing for the government.

Results suggest that investment in DSCs is more sensitive to the real rate of return than SSCs. The elasticity coefficient is 0.87. Therefore, in times of high inflation, government's ability to raise debt by this instrument will be limited in the absence of a corresponding increase in the nominal rate of return. Also, the responsiveness ensures that higher investment can be attracted by relatively small increases in real rates of return. As opposed to this investment in KDS/SSC is highly return inelastic. Changes in the rate structure are unlikely to have a significant bearing on the level of investment. Therefore, it appears that instead of raising the return on SSCs recently the government may have opted for enhancing

the rate of return on DSCs. This is likely to lead to a stronger response and induce higher non-bank borrowings.

14.4 Conclusions and Policy Implications

Key conclusions and policy implications emanating from the analysis in this chapter include the following:

- a) Evidence exists of diversion of capital from the old to the new government schemes, which offer higher returns, thereby escalating the effective interest cost of a unit of debt to the government. As such, creation of competition with existing debt instruments by the introduction of new saving schemes which target a similar set of investors should be avoided. The strategy of raising additional debt should be of either improving the terms of existing, return sensitive saving schemes instead of launching new ones or broadening the range of debt instruments available.
- b) Analysis indicates that investment in government schemes is sensitive, to a varying degree, to real rates of return. This makes inflation, along with the nominal rate of return, a determinant of investment. The government's ability to raise debt thereby is negatively correlated with the inflation rate. Therefore, if the interest costs of borrowing are to be kept under control, the government will have to simultaneously evolve a strategy to keep inflation rate under check.
- c) Investment in almost all the government saving schemes is sensitive to the rate of return on alternative investments. Therefore, to raise additional debt, other things being equal, the government will have to offer competitive returns. Future widening of the capital market may impose some limitation on the amount of budget deficit that can be financed by non-bank borrowings in the country.

- d) Increases in private savings are likely to be channelized disproportionately into increases in investment into DSC. Also, DSCs have a high elasticity with respect to their own return. Therefore, to the extent feasible, additional debt may be raised by marginal revisions in the terms of this scheme. In conjunction with the recommendations of Chapter 8, the rate structure of DSCs may be revised, particularly increasing the return for encashments after eight to ten years.
- e) The estimated equations for investment in major debt instruments provide a basis for projecting the flow of funds into various saving schemes. Given government's projected requirement of domestic bank and non-bank borrowings and expected values of other variables like private savings, the government can derive the real rates of return required to achieved the borrowing targets. Interest rate policy can then be made consistent with these desired real rates of return.

Chapter Fifteen

RATIONALISATION AND INNOVATION IN DEBT INSTRUMENTS

Government of Pakistan currently offers a range of debt instruments with variation in characteristics and corresponding differences in rates of return. The premium attached to factors like period of maturity, liquidity, nature of guarantee, frequency of payment of return, degree of anonymity, tax treatment, etc. has been highlighted in Chapter 8. Based on the analysis, we have identified debt instruments where the premia on different characteristics does not appear to have been consistently applied by the government and have accordingly suggested rationalisation of rates of return on such instruments in Chapter 13.

In this Chapter we take up the scope that exists for rationalisation in debt instruments such that either a higher volume of savings can be attracted at the same cost or the same flow of funds can be achieved at a lower cost. The primary objective of offering these new instruments is to attract savings from the household sector and to the extent possible channelise the pool of black money that exists in the economy into public debt.

15.1 Rationalisation of Debt Instruments

We have highlighted earlier that there has been a proliferation in unfunded debt instruments in the economy. In recent years, the Central Directorate of National Savings has diversified its activities by allowing investors to maintain special saving and other types of accounts with its branches. In this sense, it is beginning to acquire the characteristics of a commercial bank. This activity needs to be discouraged as it leads to a degree of financial

disintermediation and given the tax benefits places the banking system at a disadvantage in mobilising saving deposits. Currently, about Rs 37 billion is invested in various accounts with the saving centres. This has increased significantly the workload and the branches are ill-equipped to provide the appropriate level of service. Therefore, as a policy the opening of new accounts at the centres may be stopped and emphasis placed in future on sale of certificates preferably on a bulk basis to banks who can then engage in retail transactions at a suitable commission.

15.2 Innovation in Debt Instruments

Prize bonds have been a significant source of unfunded debt for GOP. As of June 1995 the amount invested in prize bonds is Rs 45 billion, representing 15 per cent of unfunded debt, with an annual increase of about Rs 5 billion. Initially prize bonds of denomination of Rs 5, Rs 10 and Rs 11 were offered. Since mid 80s the preference has been for floating prize bonds of higher denomination ranging from Rs 50 to Rs 1000. Currently, the largest outstanding amount is in prize bonds of Rs 1000 followed by bonds of Rs 500.

Table 15.1 presents the characteristics of different prize bonds in terms of the minimum purchase period, number of draws, value of first, second and other prizes, number of bonds in one series, etc. In the case of Rs 1000 bonds, for example, the minimum purchase period is two months before the next draw, there are four draws per year, the first prize is Rs 500,000 followed by the second prize of Rs 100,000, the amount of funds invested in a particular series is Rs 100 million and the number of bonds is 100,000. Therefore, the probability of a particular bond of winning the first prize in a draw is very low at 1:100,000.

TABLE 15.1
SALIENT FEATURES OF PRIZE BONDS SCHEMES

Denomination	Purchase Period (months before draw)	Number of Draws	First Prize (Rs)	Second Prize (Rs)	Other Prizes (Rs)	Number of Bonds in one Pool (000)	Value of Funds in one Pool (Rs in Million)
Rs 50	2	4	50,000	15,000	300 Prizes of Rs 200 each	100	5
Rs 100	1	6	50,000	25,000	100 Prizes of Rs 500 each	75	7.5
Rs 500	2	4	200,000	100,000	20 Prizes of Rs 10,000 each. 150 Prizes of Rs 5,000 each	100	50
Rs 1,000	2	4	500,000	100,000	20 Prizes of Rs 20,000 each. 150 Prizes of Rs 10,000 each	100	100
Rs 10,000	2	4	10,000,000	5 Prizes of 1,000,000	20 Prizes of 500,000	100	1,000
Rs 25,000	2	4	25,000,000	5 Prizes of 2,500,000	20 Prizes of 1,250,000	100	2,500

SOURCE: Central Directorate of National Savings.

Prize bonds have proved to be an attractive source of funds to the government as the implied interest cost (in terms of the value of the prizes) is relatively low at 10 per cent and unlike other voluntary savings schemes the government is able to also collect a withholding tax at source of 7½ per cent on prize winnings in excess of Rs 25,000. For the individual investor the attraction lies in the lottery feature (although the principal amount is preserved), anonymity and short-term nature of investment. It is generally perceived that prize bonds have penetrated into the informal savings market and have mobilised some black money.

Given the relatively low interest cost of prize bonds, the government has recently shown a lot of interest in this scheme and the Central Directorate of National Savings has introduced bonds with the denomination of Rs 10,000 and Rs 25,000 respectively with the highest ever first prizes of Rs 1 Crore and Rs 2½ Crores respectively followed by 5 prizes of Rs 10 lacs respectively and Rs 25 lacs and 20 prizes of Rs 5 and 12½ lacs respectively. The size of the bonds indicates that the motivation is not so much to tap into small savings but more to attract significant amounts of black money, although there has been some apprehension that these schemes might divert some funds away from bank deposits and the stock market. As indicated in table 15.1, the value of funds invested in one series, if fully subscribed, is sizeable at Rs 1,000 to Rs 2,500 million and the probability of a particular bond winning the first prize in a particular draw remains small at 1: 100,000. Despite the magnitude of the prizes, the initial response apparently has not been very promising. About Rs 4 billion have been mobilised in relation to the target of Rs 9 billion. This is probably due to the large denomination of the bonds which has greatly limited access to the prizes and the apparent lack of promotion.

Given the experience to date it appears that the most attractive prize bond scheme to investors may well be one which while having a relatively low denomination offers a big first prize. Most writers have highlighted the gambling instincts of small savers with relatively low incomes who are frequently willing to trade off a very low probability of success with a big prize. A psychological level of the size of a prize is probably one crore. However, people should be allowed access to the draw yielding this prize if they buy a prize bond with a relatively low denomination, of say Rs 2,000. A possible prize bond scheme with these features is described below.

PROPOSED PRIZE BOND SCHEME	
<i>WIN PRIZE OF ONE CRORE</i>	
With a National Prize Bond of Rs 2,000 value	
1 st Prize	Rs 1 Crore
5 Prizes	Rs 10 Lakhs
20 Prizes	Rs 5 Lacks
4 Draws a Year on _____	
<i>All Prize Bonds purchased two months prior to a Draw will be eligible for the Draw</i>	

The distinguishing feature of the proposed prize bonds scheme is that in comparison to the Rs 10,000 or 25,000 bond scheme it enables access to a big prize of Rs 1 Crore with a relatively small bond of Rs 2,000, although the probability of a particular bond winning the prize falls from 1: 100,000 to 1: 400,000. We expect that the access to a big prize to small savers will attract a sizeable amount of new money into prize bonds. The prospect of a large scale diversion of funds from the present Rs 1,000 bond scheme is limited by the presence of the trade off between the probability of winning and the size of prizes. Investors who are

somewhat more risk averse will prefer the present scheme. Also, the amount of investment required for participation has been doubled.

Another innovation in prize bonds that may be considered is the flotation of a foreign exchange prize bonds scheme. In such a scheme the bonds would be denominated in foreign exchange and the prizes would also be designated in dollars. Investment will have to be in foreign exchange but the prizes will be distributed in rupees, corresponding to the rupee value of the prize at the time of the draw. Therefore, for winners there is also the prospect of an additional return due to exchange rate depreciation during the holding period of two months or so. This will enhance the return of such a scheme beyond the conventional prize bond scheme, without necessarily raising the cost to government if the value of prizes per annum is targeted at 6 per cent of the funds invested instead of the usual 10 per cent.

Details of the foreign exchange prize bonds scheme are given below. The proposed denomination of the bond is \$ 100, with a first prize of \$ 250,000 and four draws a year. The volume of funds mobilised per series is \$ 50 million. The probability of a particular bond winning the first prize is 1: 500,000. It is expected that this scheme will attract funds from overseas Pakistani workers, especially relatively unskilled workers, who generally engage in hundi transactions. It will be necessary to market this scheme aggressively in the Middle East, especially through commercial bank branches. It is unlikely that this scheme will significantly divert funds away from foreign exchange bearer certificates or foreign currency deposits which are invested on a medium to long term basis. However, even if some diversion occurs then the advantage will be that the interest liability will be greatly reduced.

PROPOSED FOREIGN EXCHANGE PRIZE BONDS SCHEME	
<i>WIN PRIZE OF</i> \$ 250,000	
With a Foreign Exchange Prize Bond of \$ 100 value	
1 st Prize	\$ 250,000
5 Prizes	\$ 50,000
25 Prizes	\$ 10,000
4 Draws a Year on _____	
<ul style="list-style-type: none"> ● <i>All Prize Bonds purchased two months prior to a Draw will be eligible for the Draw.</i> ● <i>Prizes will be paid in rupees at the exchange rate on the date of the draw.</i> 	

Other types of debt instruments which could be considered include a prize enhanced bond (PEB), floating rate bond (FRB), foreign exchange indexed bond (FEIB) and a gold linked bond (GLB). A PEB will carry a sub-market rate of return, say 9 per cent, plus the chance to win a substantial cash prize which could be equivalent to say 2 per cent of the amount issued. This instrument has the additional attraction, compared to the typical prize bond, of not only keeping the bondholder's capital intact but also offering some return on investment. A floating rate bond (FRB) will be more successful in hedging against inflationary expectations of investors. In this bond coupon payments will be refixed periodically by reference to some independent interest rate or index, like an additional 2 to 3 percentage points on the weighted average T-bill auction rate during the six months prior to the coupon payment. In this way interest rates will become more market driven.

A FEIB will have an issue price equivalent to US dollars payable in rupees at the prevailing exchange rate. Redemption and/or interest payments could also be denominated in US

dollars, payable at the exchange rate prevailing at the time of payment. Given the steady depreciation of the Pak rupee against the US dollar, this bond may find a ready market among investors. It will tackle the speculation that is already taking place in dollars. Effective interest costs to GOP in the short run will be low as most of the return will accrue in the form of capital gains at the time of redemption. A gold linked bond (GLB) is most likely to appeal to the social and cultural values of the people and also act as a long run inflation hedge. It has the characteristics of a DSC in that the entire return will be realised at the time of maturity and effective interest costs to GOP will also be low initially. GLBs are likely to attract significant savings from the informal sector.

Chapter Sixteen

PUBLIC DEBT MANAGEMENT AND MONETARY POLICY

The objective of this chapter is to highlight the need for and the nature of co-ordination between public debt management and monetary policy. This co-ordination is of particular importance during a period of financial sector reform. Financial reforms have implications for public debt management while, conversely, debt management can contribute to, or impede, the reform process and implementation of monetary policy.

16.1 Objectives of Public Debt Management

Public debt management must aim to achieve the following objectives:

- (i) minimise the interest cost of government borrowing, while relying on voluntary, market based means to finance the budget deficit;
- (ii) contribute to restricting the inflationary impact of deficit financing through money creation;
- (iii) help in the development of money and capital markets and thereby increase the capacity of government to finance its operations;
- (iv) avoid short-run disruption in financial markets resulting from large public debt roll-overs or incremental borrowings;
- (v) provide the central bank with the tools to carry out open-market operations.

Most of the objectives of monetary management are similar although the goals tend to be broader with prime emphasis on achieving domestic and external stability of the national currency. Consequently, there could be conflicts, especially in the short run, which place monetary and public debt management policies at loggerheads. This is likely when government borrowing levels are relatively high which compels the central bank to restrict

credit expansion to the private sector if inflationary pressures are to be kept under control. The 'crowding-out' problem and the rise in interest rates has already been referred to in Chapter 3.

16.2 Areas of Co-ordination

In the first phase of financial reforms, as we are experiencing in Pakistan today, it is essential that public debt and monetary management are co-ordinated in the following areas:

- projecting and setting quarterly and annual targets for sale of government securities. These targets should reflect government cash flow requirements, the demand for government securities and monetary policy considerations. This task can best be performed by the Monetary and Fiscal Policies Co-ordination Board which has been established under the purview of the State Bank Act of 1994;
- assessing the demand for government securities, both short-term issues, which are held mostly to meet liquidity management needs of financial institutions, and long term bonds which are preferred by investors like pension funds, etc.
- consulting with financial institutions to gauge their preferences regarding the auctioning process, in terms of the nature of debt instruments, frequency and size of offerings, physical issuance of bonds and bills, etc.

16.3 Interest Rate Policy

An important question that arises following the transition to open market operations, as has happened recently in Pakistan, is to what extent the government (and the SBP) should try to influence interest rates, even if this is done through market, and not administrative, means. This has a vital bearing on the overall cost of debt servicing and the size of the fiscal deficit. The basic issue is whether the choice of an appropriate interest rate adjustment path should

be achieved either through flexible targeting of interest rates or through targeting of monetary and credit aggregates. There are likely to be differences on the preferred strategy in this area among officials in charge of public debt and monetary management respectively.

Usually, this debate is carried out in terms of what to do if government borrowing needs exceed the amounts that the SBP feels should be placed with the market, as was perhaps the case recently with government borrowing approaching record levels, over twice the annual target. If this is random or seasonal in character and essentially temporary in nature then the SBP may wish to absorb the difference, preferably by purchasing the remaining securities at the average interest rate of recent auctions, in order to prevent sharp jumps in interest rates. If, however, the borrowing levels are likely to remain high and there is a chronic divergence between the financing needs of government and the capacity of the market to absorb public debt instruments then the adjustment should be on the fiscal policy side and the government must strive to reduce its deficit to a manageable size. This is necessary as sustained absorption of government securities by the central bank will increase the money supply and lead to inflation and balance of payments problems (see Chapter 3).

Another potential area of contention is the amount of securities to be offered at each auction. Given the absence of a fully developed secondary market in Pakistan which can smooth out seasonal liquidity movements, the amount offered must vary according to monetary conditions prevailing at the time of auction. It may be useful from the market development viewpoint to standardise the size of issues, but this may have to wait for the final phase of reforms.

16.4 Information Requirements

A key element in the process of co-ordination is the development jointly of an adequate base of information by the Ministry of Finance and the SBP. This area does not appear to have been adequately emphasised in Pakistan. If OMOs are to constitute an effective instrument of monetary policy then there is need for information on an on-going basis on the amount of government securities maturing at each moment in time, the characteristics of each type of government security outstanding and the cash flow requirements of government. Combined with data on the liquidity situation of the banking system this information will enable debt and monetary policy managers, working together, to find the appropriate strategy to minimise the cost of debt without complicating monetary management. This coordination in collection of information is vital when monetary policy begins to rely, more or less, exclusively on in direct policy instruments, as has happened recently in Pakistan following the withdrawal of the credit-deposit ratio.

16.5 Directions of Future Reform

One of the key long run objectives must be the development of markets for government securities. This will not only help monetary policy but also fiscal policy and the development of financial markets in general through both deepening and widening. An area of primary concern must be the development of a sufficiently deep secondary market in monetary instruments to permit the effective use of OMOs as the prime instrument of monetary policy. Other desirable targets are a broadening of the instruments available by the introduction of a wider variety of debt instruments with different characteristics and maturities catering to the preferences of different types of investors and promotion of greater competition in financial markets.

In terms of efficient conduct of OMOs, the objective must be eventually for the SBP to intervene in the securities market more through purchases and sales in that market and less by varying the size of primary issues. Repurchase (REPO) and reverse repurchase agreements must be used increasingly to achieve short-term, reversible adjustments in financial sector liquidity.

In future, government may also want to focus more on placement of long term securities (like FIBs) rather than treasury bills. Several arguments go in favour of this policy. The need to engage in frequent debt rollovers may be administratively inconvenient and may magnify interest rate fluctuations. It also seems reasonable to finance projects of a long term nature, which form part of the ADP, through long term debt.

In conclusion, it is important to emphasise that co-ordination between the Ministry of Finance and the SBP on public debt and monetary management issues is essential if the road to financial liberalisation on which Pakistan is moving is not strewn with obstacles. This argues not only for more effective use of the Monetary and Fiscal Policies Co-ordination Board but also for greater day-to-day interaction between middle level officials in the Ministry and the Central Bank. It also needs to be recognised that it is not only the size of the budget deficit which places a burden on monetary management but also that poorly conceived and operated monetary instruments can make the task of public debt management more difficult.

PART SEVEN
MEDIUM TERM
PROJECTIONS

Chapter Seventeen

A PROJECTION MODEL OF BUDGET DEFICIT, SEIGNORAGE AND DEBT

The objective of this chapter is to develop a simple model of public finances which incorporates key macro economic magnitudes as exogenously given parameters and a number of major policy variables. The impact of these variables on the budget deficit and on the extent of the use of different mechanisms to finance the deficit is explicitly modelled. The advantage of construction of this model is two fold. First, it enables the development of scenarios in a medium run time horizon and identifies the set of policy actions that is necessary to achieve pre-specified targets in a particular year for the size of the budget deficit or the public debt to GDP ratio. Second, the impact of 'shocks' like devaluation, unanticipated decline in GDP growth or rise in rate of inflation, etc., on the state of public finance can be quantified within the framework of the model. In particular, the sensitivity of budget deficits and level of public debt to changes in key macro economic magnitudes can be studied.

17.1 Specification of The Model

The model takes the following macro economic magnitudes as exogenously determined for the projection period:

g = annual growth rate of real GDP

c = current account deficit (excluding interest payments) as proportion of the GDP

In addition, the magnitude of the following policy variables acts as an input into the model:

d = primary budget deficit as a proportion of the GDP, excluding profits of SBP from non-tax revenues.

s = rate of seignorage by the government (as described in Chapter ...) as a proportion of the GDP

Based on the magnitude of these policy variables the following variables are derived:

$$p = p(s) \quad [1]$$

where p is the annual inflation rate. It is assumed to be function of the rate of seignorage in the economy. The nature of the functional relationship is discussed in Chapter.... Given the inflation rate, the rate of exchange depreciation, e , is derived on the basis of changes in purchasing power parity as follows:

$$e = p - \bar{w} \quad [2]$$

where \bar{w} is the worldwide rate of inflation. The magnitude of this variable is exogenously specified. The model implicitly assumes that over the projection period the real effective exchange rate of Pakistan remains unaltered. If, however, it is proposed to model the consequences of a more aggressive exchange rate policy the equation (2) can be modified to allow for some real exchange rate depreciation at the rate of α as follows:

$$e = p - \bar{w} + \alpha \quad [3]$$

Given the process of financial sector reforms in the country and the fact that interest rates on debt instruments are likely to be more market based, we expect that in future interest rates will reflect the underlying rate of inflation in the economy, although perhaps with an adjustment lag. As such, the interest rate, i_d , on domestic debt is given by

$$i_d = p + \bar{r} \quad [4]$$

where \bar{r} is the real rate of interest, which is exogenously specified. Given the adjustment lag and the carry over of debt contracted at earlier interest rates we expect that the change in interest rate on domestic debt from the base level to i_d will take four to five years.

With regard to external debt, the following are exogenously specified:

i_e = interest rate on external debt

x_e = rate of repayment of external debt.

The magnitude of the GDP at current prices, y , is given by

$$y = y_{-1} (1 + g + p) \quad [5]$$

where y_{-1} is the GDP in the previous year.

The size of the non-interest current account deficit is derived as

$$C = cy \quad [6]$$

Interest payments, I_e , on external debt are estimated as

$$I_e = i_e \cdot DE_{-1} \quad [7]$$

where DE is the outstanding stock of external debt (in rupees). Net external borrowing, BE , is given by the identity

Net external borrowing = non-interest current account deficit + interest on external debt

Therefore,

$$B_e = C + I_e \quad [8]$$

The increase, CL , in the rupee value of outstanding external debt due to exchange rate depreciation is given by

$$CL = e, DE_{-1} \quad [9]$$

The stock of external debt at the end of a particular year is given by

Outstanding Debt = Outstanding Debt in Previous Year + Net External Borrowing + Capital Losses on External Debt

That is,

$$DE = DE_{-1} + BE + CL \quad [10]$$

We turn now to the specification of domestic debt. Interest payments on domestic debt, I_d , are given by

$$I_d = i_d \cdot DD_{-1} \quad [11]$$

where DD is the outstanding stock of domestic debt. Total interest payments, I , then are given by

$$I = I_d + I_e \quad [12]$$

The overall primary budget deficit, D , including profits of the SBP, is given by

$$D = dy + i_d [DD_{-1} - NDD_{-1}] \quad [13]$$

where NDD is the outstanding stock of domestic debt excluding debt held by SBP. The latter is the counterpart of seignorage and any interest payment on such debt reverts back to the government via profits of the SBP.

The extent of money creation, S , through seignorage by the government is derived as

$$S = sy \quad [14]$$

The overall level of domestic borrowing, B_d , is given by

$$B_d = D + I_d - BE \quad [15]$$

The change in domestic debt can then be estimated from the following equations:

$$DD = DD_{-1} + B_d \quad [16]$$

$$NDD = NDD_{-1} + B_d - S \quad [17]$$

Finally, we have the expression for the budget deficit, BD , can be derived as

$$BD = I + D \quad [18]$$

and the level of the public debt as

$$PD = DD + DE \quad [19]$$

Following the solution of the model the following key ratios can be estimated:

$$\frac{BD}{Y} = \text{Budget Deficit as a proportion of GDP}$$

$$\frac{I}{Y} = \text{Interest Payments as a proportion of GDP}$$

$$\frac{D}{Y} = \text{Primary Budget Deficit as a proportion of GDP}$$

$$\frac{PD}{Y} = \text{Public Debt to GDP ratio}$$

$$\frac{DD}{Y} = \text{Domestic Debt to GDP ratio}$$

$$\frac{DE}{Y} = \text{External Debt to GDP ratio}$$

In addition we can derive the overall debt servicing, DS, to GDP ratio where

$$DS = I + x_e \cdot DE_t \quad [20]$$

Chapter Eighteen

PROJECTIONS UNDER DIFFERENT SCENARIOS

The model developed in the previous chapter can be used for projections under different scenarios. In particular we can highlight the consequences of different levels of primary budget deficit and seignorage on the magnitude of interest payments and debt servicing as well as the level of public debt, both domestic and external. The model also derives the implications of different projections of macro economic variables.

18.1 Base Projections

Magnitudes of exogenous variables in the base projection are as follows: GDP growth rate is expected to be 6 percent in 1995-96 and then stay at 5.5 percent per annum up to the end of the century. A conservative projection is made of the growth rate in comparison to the performance during the 80s because of the sharp volatility in the growth rate during the 90s and because efforts at keeping the primary budget deficit low will necessitate strong restrictions on public development expenditure which could affect the long-term growth potential of the economy.

The inflation rate is assumed at 10 percent, which is in line with the tendency of the economy to achieve double-digit inflation rates during the 90s. The rate of seignorage is fixed at a level consistent with this rate (see Chapter 12)¹ at 1.8 per cent of the GDP. The current account deficit, excluding external interest payments, is expected to be high in 1995-96 at 2 percent of the GDP in light of trends observed in the first eight months. It is expected, however, that net external borrowings cannot be sustained at this high level and

¹ With some reduction to allow for growth in the process of financial intermediation in the economy.

that the non-interest current account deficit will be brought down to 1 percent in coming years. Domestic interest rates are expected to rise in response to the on-going process of financial sector liberalisation and attain a peak of 13.5 percent by 1997-98, with little change thereafter. Interest rates on external debt may rise somewhat as concessional aid from multi-lateral and bilateral agencies becomes less forthcoming and greater reliance has to be placed on short-term commercial debt.

The government expects the primary budget to be in surplus by about 1 percent of the GDP in 1995-96. Current indications, however, are that this may be a difficult target to achieve in view of the performance of tax revenues, whereby only 57 percent of the target has been achieved in the first eight months. Further, we have highlighted a significant inconsistency (see Appendix I) between the level of domestic borrowing and the increase in domestic debt during the last two years, with the former significantly less than the latter. If this difference persists then the primary budget deficit will effectively be higher. As such we expect that the primary budget will be, more or less, balanced in 1995-96 and thereafter up to 1999-2000 there will be a primary budget deficit of about 1 percent of the GDP.

Based on the above assumptions, projections of key public finance magnitudes and ratios are given in tables 18.1 and 18.2 respectively. Both interest payments and debt servicing are likely to remain, more or less, constant as a percentage of the GDP during the next few years in this scenario and the budget deficit will remain relatively high at over 6 percent of the GDP. This will happen despite the likelihood of a fall in the public debt ratio from 76 percent in 1995-96 to about 73 percent in 1999-2000, due to the rise in interest rates. Therefore, under this base scenario, there is little improvement in the budgetary position and the country continues to carry high levels of public debt and budget deficits.

TABLE 18.1
PROJECTIONS OF KEY PUBLIC FINANCE MAGNITUDES
UNDER DIFFERENT SCENARIOS

(Rs in Billion)

Scenarios	1995-96	1996-97	1997-98	1998-99	1999-2000
<u>BUDGET DEFICIT</u>					
• Base Scenario	126.3	165.5	189.9	211.3	235.1
• Optimistic Scenario	104.5	112.4	116.6	151.4	160.4
<u>INTEREST PAYMENTS</u>					
• Base Scenario	126.3	144.7	172.2	197.1	224.9
• Optimistic Scenario	126.3	141.9	156.5	169.8	187.5
<u>DEBT SERVICING</u>					
• Base Scenario	189.7	223.2	262.5	301.8	347.1
• Optimistic Scenario	189.7	219.1	247.3	275.5	310.5
<u>PUBLIC DEBT</u>					
• Base Scenario	1657.8	1888.4	2152.5	2449.8	2784.6
• Optimistic Scenario	1636.6	1805.4	1987.1	2214.3	2462.3
<u>DOMESTIC DEBT</u>					
• Base Scenario	852.8	959.4	1077.7	1204.2	1338.9
• Optimistic Scenario	831.0	874.3	907.3	959.9	1003.2
<u>EXTERNAL DEBT</u>					
• Base Scenario	805.6	929.0	1074.8	1245.6	1445.7
• Optimistic Scenario	805.6	931.1	1079.8	1254.3	1459.1
<u>EXTERNAL DEBT SERVICING</u>					
• Base Scenario	89.6	111.1	132.8	156.7	185.5
• Optimistic Scenario	89.6	111.3	133.3	157.6	186.9
SOURCE: Derived from the Projection Model					

18.2 Optimistic Scenario

The primary differences between this scenario and the base scenario lie in the following:

- (i) The primary budget deficit is significantly lower each year by about 1 percent of the GDP. This implies a surplus of 1 percent of the GDP in 1995-96 and no deficit or surplus in subsequent years. It is also assumed that the increase in domestic debt in any particular year does not exceed the level of domestic borrowings during that year. It is to be recognised that balancing of the primary budget in subsequent years will require significant levels of fiscal effort, in the face of tax reforms like tariff reductions which have a significant negative impact on revenues. Also, restraint on

TABLE 18.2
PROJECTIONS OF KEY PUBLIC FINANCE RATIOS
UNDER DIFFERENT SCENARIOS

(Percent)

Scenarios	1995-96	1996-97	1997-98	1998-99	1999-2000
<u>BUDGET DEFICIT/GDP</u>					
• Base Scenario	5.8	6.6	6.6	6.4	6.2
• Optimistic Scenario	4.8	4.5	4.0	4.5	4.1
<u>INTEREST PAYMENTS/GDP</u>					
• Base Scenario	5.8	5.8	6.0	5.9	5.9
• Optimistic Scenario	5.8	5.6	5.4	5.1	4.8
<u>DEBT SERVICING/GDP</u>					
• Base Scenario	8.7	8.9	9.1	9.1	9.1
• Optimistic Scenario	8.7	8.7	8.5	8.2	8.0
<u>PUBLIC DEBT/GDP</u>					
• Base Scenario	76.0	75.3	74.6	73.9	73.0
• Optimistic Scenario	75.0	71.7	68.3	65.9	63.4
<u>DOMESTIC DEBT/GDP</u>					
• Base Scenario	39.1	38.3	37.4	37.6	35.1
• Optimistic Scenario	38.1	34.7	31.2	28.6	25.8
<u>EXTERNAL DEBT/GDP</u>					
• Base Scenario	36.9	37.0	37.3	37.6	37.9
• Optimistic Scenario	36.9	37.0	37.1	37.3	37.6
<u>EXTERNAL DEBT SERVICING/EXPORTS</u>					
• Base Scenario	29.8	31.2	31.5	31.4	31.4
• Optimistic Scenario	29.8	31.1	31.3	31.0	31.0
SOURCE: Derived from the Projection Model					

expenditure growth will require cut backs primarily in current expenditure as the level of development expenditure has already been scaled down substantially.

- (ii) lower interest rates on domestic debt achieving primarily by reduction in the required level of government borrowing which reduces pressures on the capital market, rationalisation of interest rates (as described in Chapter 13) and innovation in debt instruments (see Chapter 15). In this way interest cost on domestic debt can be held constant at about 13 percent despite financial sector reforms.

- (iii) somewhat greater reliance on external borrowing based on a larger non-interest current account deficit. This implies lower costs of interest payments although external debt repayments are higher. It is also assumed that there is greater success in attracting concessional aid.
- (iv) exchange rate policy is pursued in a manner such that the nominal depreciation in the rupee only reflects purchasing power parity changes and there is no depreciation in the real effective exchange rate. This restricts the component of capital losses on external debt in comparison to the base scenario where the real exchange rate falls by about one percent every year.
- (v) privatisation proceeds are used entirely to finance the budget deficit thereby reducing the quantum of borrowing. These proceeds are not used even partially to finance any form of expenditure. Based on further sale of PTC assets and other major investments like WAPDA power plants, etc., these privatisation proceeds are assumed to be about 1 percent of the GDP in 1996-97 and 1997-98 respectively.

If the above policy initiatives are taken then the scenario changes dramatically. As shown in Table 18.2, all public finance magnitudes will show major improvement. The budget deficit falls steeply in 1996-97 and 1997-98 and then stabilises at between 4.0 and 4.5 percent. Interest payments as a percentage of the GDP decline sharply from about 5.8 percent in 1995-96 to 4.8 percent in 1999-2000. The overall level of public debt to GDP can be brought down from 75 percent to just over 63 percent in the period of five years with most of the reduction in domestic debt.

This scenario highlights the fact that a major improvement in public finances can be achieved in a relatively short time frame. For this, however, the government will have to demonstrate strong fiscal management which ensures that the primary budget remains balanced; interest rates are rationalised and managed at reasonable levels through limitations on government borrowings; exchange rate policy is moderate and does not allow any real exchange rate depreciation; levels of seignorage (money creation) are pitched in such a manner that there is moderate inflation close to double-digit rates and privatisation proceeds are used primarily to finance the budget deficit. Altogether, it appears that sensible and co-ordinated fiscal and monetary policies can achieve a drastic reduction in the public debt to GDP ratio by the turn of the century.

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APPENDIX I
EXTENT OF DIVERGENCE BETWEEN
DOMESTIC BORROWING AND
INCREASE IN DOMESTIC DEBT

For consistency of estimates of debt, it is essential that the figures of domestic borrowing to finance the budget deficit and the increase in domestic debt released by government should tally for any particular year. However, as shown in Table A-1, sometimes the increase in domestic debt figures are higher and sometimes lower. This highlights a basic discrepancy, which needs to be resolved by the Ministry of Finance.

It is of particular concern that the difference has tended to increase in the last two years to as much as Rs 39 billion in 1994-95. This highlights the possibility that estimates of the budget deficit may be somewhat understated.

Years	Domestic Borrowing (1)	Increase in Domestic Debt (2)	Difference (2)-(1)
1981-82	11.8	16.6	4.8
1982-83	20.5	22.6	2.1
1983-84	20.2	21.0	0.8
1984-85	31.6	27.2	-4.4
1985-86	33.8	53.2	19.4
1986-87	38.3	45.4	7.1
1987-88	38.3	41.6	-3.3
1988-89	44.9	43.1	4.4
1989-90	33.1	48.1	15.0
1990-91	67.1	66.9	-0.2
1991-92	71.9	76.9	5.0
1992-93	83.2	82.9	-0.3
1993-94	67.6	92.1	24.5
1994-95	66.2	105.1	38.9

SOURCES:

- Pakistan Economic Survey
- Ministry of Finance

APPENDIX II

A MODEL FOR PROJECTING DEBT AND DEBT SERVICING

The equation for evolution of debt, B_t , is

$$B_t = (1 + \epsilon) B_{t-1} + b_t \quad [1]$$

where B_t is the level of outstanding debt in year t . b_t is the budget deficit in year t and ϵ is the rate of capital loss on debt due to exchange rate depreciation.

We have that b_t is given by

$$b_t = \alpha y_t + DI_t \quad [2]$$

where α is the of the primary budget deficit in relation to the national income, y_t . DI_t is the interest payment on debt in year t , which is given by

$$DI_t = r B_{t-1} \quad [3]$$

r is the nominal interest rate which is assumed to be constant through the projection period. The growth rate of national income is designated by δ . This includes the inflation rate, π , and the real growth component of g , with $\delta = g + \pi$. Therefore,

$$y_t = y_0 (1 + \delta)^t \quad [4]$$

where y_0 is the national income in the base year.

Substituting (4), (3) and (2) into (1) we obtain

$$B_t = (1 + \epsilon + r) B_{t-1} + \alpha y_0 (1 + \delta)^t \quad [5]$$

This is a first order difference equation solution of which yields

$$B_t = B_0 (1 + \epsilon + r)^t + \alpha y_0 \cdot \frac{(1 + \delta)}{(\delta - \epsilon - r)} [(1 + \delta)^t - (1 + \epsilon + r)^t] \quad [6]$$

In the particular case where $\delta > \epsilon + r$. This is referred to as Case I. We take up Case II later in which $\delta < \epsilon + r$. B_0 is the outstanding debt in the base year.

The growth rate, \dot{B} , in debt can be derived as

$$\dot{B} = \frac{B_0 (\epsilon + r) \theta_{t-1} + \alpha y_0 \cdot \frac{1 + \delta}{\delta - \epsilon - r} \cdot [\delta - (\epsilon + r) \theta_{t-1}]}{B_0 \theta_{t-1} + \alpha y_0 \frac{1 + \delta}{\delta - \epsilon - r} [1 - \theta_{t-1}]} \quad [7]$$

where

$$\theta_t = \left[\frac{1 + \epsilon + r}{1 + \delta} \right]^t$$

and $\theta_t \rightarrow 0$ as $t \rightarrow \infty$ with $\epsilon + r < \delta$. Therefore, at the limit we have that as $t \rightarrow \infty$,

$\dot{B} \rightarrow \delta$. Since y grows at the rate of δ , we have that in this case $\frac{B}{Y}$ asymptotically approaches a constant value. This is given by

$$\frac{B_t}{Y_t} = \frac{B_o (1 + \epsilon + r)^t + \alpha Y_o \frac{(1 + \delta)}{(\delta - \epsilon - r)} \left[(1 + \delta)^t - (1 + \epsilon + r)^t \right]}{Y_o (1 + \delta)^t}$$

that is

$$\frac{B_t}{Y_t} = \frac{B_o \left(\frac{1 + \epsilon + r}{1 + \delta} \right)^t + \frac{\alpha Y_o (1 + \delta)}{(\delta - \epsilon - r)} \left[1 - \left(\frac{1 + \epsilon + r}{1 + \delta} \right)^t \right]}{Y_o} \quad [8]$$

Therefore as $t \rightarrow \infty$, $\frac{B_t}{Y_t} \rightarrow \frac{\alpha (1 + \delta)}{(\delta - \epsilon - r)}$. This is the maximum value of the debt/income ratio that will be approached by this economy.

In the numerical example where $\alpha = 0.01$, $\delta = 0.12$, $\epsilon = 0.04$, $r = 0.07$ we have that the limit by B/y is given by

$$\lim_{t \rightarrow \infty} \frac{B_t}{Y_t} = \frac{0.01 (1.12)}{0.01} = 1.12$$

The limit of debt interest/income ratio can be obtained as follows:

$$\frac{DI_t}{Y_t} = \frac{r B_{t-1}}{Y_t}$$

$$\frac{DI_t}{Y_t} = r \cdot \frac{B_o (1 + \epsilon + r)^{t-1} + \alpha Y_o \frac{1 + \delta}{\delta - \epsilon - r} \left[(1 + \delta)^{t-1} - (1 + \epsilon + r)^{t-1} \right]}{Y_o (1 + \delta)^t}$$

$$\frac{DI_t}{Y_t} = r \cdot \frac{B_o \left(\frac{1 + \epsilon + r}{1 + \delta} \right)^t + \frac{\alpha Y_o (1 + \delta)}{(\delta - \epsilon - r)} \left[\frac{1}{1 + \delta} - \frac{1}{1 + \epsilon + r} \left(\frac{1 + \epsilon + r}{1 + \delta} \right)^t \right]}{Y_o}$$

$$\Rightarrow \lim_{t \rightarrow \infty} \frac{DI_t}{Y_t} = r \left[\frac{\alpha}{\delta - \epsilon - r} \right] \quad [9]$$

In the numerical example we have limit $\frac{DI_t}{Y_t} = \frac{.07 (.01)}{0.01} = .07$

The annual growth rate, d , in the debt-income ratio is given by

$$d = \frac{\dot{B} - \delta}{1 + \delta} \quad [10]$$

Given (7) and (10) the dynamics of the debt-income path can be derived for different parameter values. The critical condition for the debt-income path not to explode is that

$$g + \pi > \epsilon + r$$

$$g > \epsilon + (r - \pi)$$

real Growth
rate of
economy

rate of
capital
loss

real interest
rate of
economy

APPENDIX III EFFECTIVE INTEREST COST OF DSCs

Suppose we want to compute the effective interest of DSCs t years after their introduction, where $t > 20$. For simplicity, we assume that there is no premature encashment.

$$\text{Effective Interest Cost} = \frac{\text{Interest Payment}}{\text{Outstanding Debt}}$$

Suppose the growth rate of new funds flowing into DSCs is g . Suppose that the interest rate on DSCs is i .

The new funds in year τ is $I_0 e^{g\tau}$
Funds maturing in year τ is $I_0 e^{g(\tau-10)}$

$$\begin{aligned} \text{Outstanding Debt} &= \int_{t-10}^t I_0 e^{g\tau} d\tau - \int_{t-10}^t I_0 e^{g(\tau-10)} d\tau \\ &= I_0 (1 - e^{-10g}) \int_{t-10}^t e^{g\tau} d\tau \\ &= I_0 (1 - e^{-10g}) \left[\frac{1}{g} e^{g\tau} \Big|_{t-10}^t \right] \end{aligned}$$

$$\text{Outstanding Debt} = I_0 (1 - e^{-10g}) \frac{1}{g} [e^{gt} - e^{g(t-10)}] \quad (1)$$

$$\text{Interest Payment in year } t = I_0 e^{g(t-10)} [e^{10i} - 1] \quad (2)$$

$$\begin{aligned} \Rightarrow \text{Effective Interest Cost} &= \frac{g e^{g(t-10)} [e^{10i} - 1]}{(1 - e^{-10g}) [e^{gt} - e^{g(t-10)}]} \\ &= \frac{g [e^{10i} - 1]}{(1 - e^{-10g}) [e^{10g} - 1]} \end{aligned} \quad (3)$$

$$\text{Effective Interest Cost} = \frac{g [e^{10i} - 1] e^{10g}}{[e^{10g} - 1]^2} \quad (4)$$

Suppose $g = .23$, $i = 0.16$

$$i^* = \frac{.23 [e^{1.6} - 1] e^{2.3}}{[e^{2.3} - 1]^2} = \frac{.23 (3.953) (9.974)}{80.533} = .1126$$

Suppose $g = .40$, $i = 0.16$

$$i^* = \frac{.40[\epsilon^{1.6} - 1] \epsilon^4}{[\epsilon^4 - 1]^2} = \frac{.40(3.953) 54.598}{2872.7} = .0302$$

Therefore, in the case of DSCs, the higher growth rate of new funds implies a lower effective interest cost as follows:

g	i^*
.10	.364
.15	.219
.20	.143
.25	0.096
.30	0.065