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(A Case Study with reference to Pakistan)

or

Public Debt Sustainability in Pakistan

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Chapter I

Background of the problem

1.1 Introduction

History tells us that developing countries have been subject to unrelieved economic crises, with in which, the most chronic is the debt crisis. The debt crisis of any country makes grounds for economic difficulties and creates a threat to the capability of the international financial organization. Like many other developing countries, Pakistan has also resorted to borrowing heavily from domestic and foreign sources to finance its development expenditure, consequently maintaining large fiscal deficits which became unsustainable in the late 1980s, and even in 1999-00 the total public debt became 100.27 percent of GDP.

Heavy reliance on borrowings to finance fiscal as well as the current account deficits led to an accumulation of debt, which grew from about Rs 155 billion in 1980s to Rs 802 billion in the 1990s, and in 1999-00 stood at Rs 3018 billion, and now in 2008 first quarter the total debt became Rs. 5613 billion.

Pakistan's debt growth during the 1990s was extraordinary. The government planned debt reduction strategy, which turns down public debt weight to GDP from 100.27 per cent of the GDP in 1999-00 to 55.35 percent in 2006-07 and now 56.30 in first quarter of 2008.

Pakistan also condensed its external debt burden through rescheduling, a debt swap over for social spending, debt abolition and prepayment of high-priced debt. Since then debt service ratio has substantially declined over 2000-2007. Similarly, public debt as percentage of revenue has declined from 588 percent to 372 percent during the same period, but though about 30 per cent of government revenues remain allocated to debt-servicing. Notwithstanding these successes there is need to remain vigilant.

Now our question is; *how to continue this decline for a long time and how Pakistan manages its public debt, to ensure that the government's financing needs and its payment obligations are met at the lowest possible cost over the medium-to-long run, consistent with prudent degree of risk.*

1.2 Relevance and Justification:

Public debt must be lowered, as to develop flexible macroeconomic policies, and make surplus resources for public development

Regardless of continuous improvements in recent years, public debt is still soaring, as more than 50% of the GDP (56.3%), and remains a serious dilemma for Pakistan. Domestic debt has more share than external debt in total debt; it has received relatively less consideration. There is huge trade deficit for last several years, and is partly covered by remittances. The country's current account deficit, which is average widened to about 5% of GDP, for last four years. Foreign exchange reserves were over \$16 billion in November 2007, but however found significant decrease in those reserves in recent months, and have fallen due to a decline in foreign reserves held by the State Bank of Pakistan¹. There is continuously high Fiscal deficit for the last several years, and becoming a major concern of the economy.

¹Yahoo news, KARACHI, Aug 28, 2008 - Pakistan's foreign reserves fell to \$9.38 billion in the week that ended on Aug. 23, from \$9.57 billion in the previous week, the central bank said on Thursday. Pakistan's central bank, the

Inflation was 7.9 percent in 2007, the same as in 2006 rate, and also food inflation was even higher, at 10.3 percent. The central bank responded to high inflation by tightening monetary policy.

The main concern for Pakistan is to maintain its growth steps forward in the face of high oil prices. It is expected that oil prices will remain very high, this could be undermine economic growth and putting pressure on budgets, inflation and the balance of payments?

The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) noted that "Pakistan is likely to face higher external debt-servicing burden as repayments of the rescheduled non-ODA Paris Club stock has resumed in 2008. Pakistan is also likely to pay for foreign currency bonds as some of them are getting matured this year, which could further tighten the situation. ESCAP further said that reduction in debt to GDP ratio came by way of rescheduling, a debt swap for social spending, debt cancellation and pre-payment in 2005".²

Post-9/11, Pakistan received higher foreign aid as well as higher foreign direct investment. But Pakistan has not been able to either to reduce the debt burden in absolute terms nor build up its foreign exchange reserves. In fact, it has become the fourth largest borrower of the World Bank and the fifth-largest recipient of American aid to foreign nations. This shows its continued reliance on foreign governments and multilateral institutions - despite declarations of economic sovereignty.³

Therefore, in the light of the above discussion, there is need for Pakistan to measure and to pursue vigorous macroeconomic policies to bring under control public debt, before they become absolutely unmanageable and do not repeat again circumstances as in 2001 Pakistan was classified as a severely indebted country by the World Bank. This research work aims to analyze public debt sustainability and its effect on macroeconomic objectives of fiscal and monetary policy and macroeconomic variables in general.

1.3 Research Questions

1.3.1 Main Research Question:

“Whether Pakistan’s Public debt will be sustainable over time”

1.3.2 Sub-Questions:

- Composition and determinants of public debt in Pakistan.
- What is the impact of public debt on macroeconomic policy, particularly economic growth?
- What are the policy implications of the public debt?

State Bank of Pakistan, said its reserves fell to \$6.01 billion from \$6.26 billion previously, while those held by commercial banks rose to \$3.37 billion from \$3.30 billion.

The Economist, 13 September 2008, page no.60, article about Pakistan, that by the early Sept. 08 the reserves had fallen to 5.5 billion.

Pakistan's foreign reserves hit a record high of \$16.5 billion in October last year but have since been depleted by high payments for oil imports, and foreign investors withdrawing money because of the country's political uncertainty.

² Daily Business Recorder, Islamabad, 28 March, 2008.

³ International Press, External debt: a false sense of achievement by Yousuf Nazer.

1.3.3 Research Hypotheses

“Pakistan Public debt will be sustainable in the long run, provided that increase in GDP growth, revenue, export growth and high workers remittances can take place.”

1.4 Scope and Limitation of the Study

This research work will focus on the public debt sustainability for the period 1997-2008, and then extend analysis to the medium-terms perspective for years 2009-2015. The reasons of choosing this period is that, the public debt has been showing downward trend in this phase, Moreover the economy based has been changed from the 1989-1980 to 1999-2000. In this perspective a number of macroeconomic variables, like GDP growth, revenue, expenditure, export earning and debt servicing payment will be used to understand the public debt management and its sustainability.

The major part of the limitation of this study is the availability of the data. There are many approaches used for studying debt sustainability, which one is the more suitable is an important question?, because it based on the different type of economy system of the country. The Government of Pakistan, Ministry of Finance passed an Act 2005, called Fiscal Responsibility and Debt Limitation Act 2005 and Debt Policy Statement 2007-08, in which fiscal policy and a debt' and its policy have been defined. A study of this enactment will be helpful for this study.

1.5 Theoretical and Analytical Framework Methodology

1.5.1 Theoretical

The Theoretical framework of public debt sustainability and its management was drawn from different studies and articles, available in ISS library, Pakistan Institute of Economics Development (PIDE), Islamabad, Economics Department Quaid-I-Azam University Islamabad Pakistan and on different websites, articles/assays especially produced by the International Monetary Fund and Maastricht Treaty and Commonwealth Secretariat for Developing Countries, related to debt sustainability, management and its servicing.

1.5.2 Analytical

The public debt was studied analytically and empirically based on secondary data. Exploratory data, developing ratios, percentages, graphs, diagrams and statistical averages were applied. There are various indicators for determining a sustainable level of public debt, although most of them are based on different variants of government budget constraints and certain assumptions. In this study, I used the critical thresholds indicators developed by the IMF (2001), Maastricht Treaty and commonwealth Secretariat (1999) for developing countries. These ratios which were used to analyze public debt sustainability are: debt to DGP ratio, fiscal deficit to GDP ratio, domestic public debt to government revenue ratio, debt service to government revenue ratio and external debt service to export ratio. Secondly I used model in the notes of Professor Karel Jansen for Export/GDP ratio and for public debt/GDP ratio model in research work of Kulasake L. (2002).

Used above debt indicator we analysed sustainability of public debt, and then assist public debt in medium term(FY2009-2015) by using the prediction of key economic indicators in order to see where the public debt is sustainable over the time with some assumptions.

1.5.3 Source of data

The major data source for this research work was obtained from State Bank of Pakistan, IMF, World Bank and various WebPages. Others sources of data such as Economic Survey of Pakistan of the different years, Ministry of Finance & Economics Affairs and Federal Bureau of Statistics, Statistics Division; Islamabad Pakistan was also consulted. All the data are based on **Current Market Prices**. I used the current date due to capture the current changing situation of economy at national and international level.

1.6 Organization of the study

This study is organized in to five chapters. Chapter one is based on background of the debt problem, research design & organization of the study, chapter two provides theoretical and analytical framework about debt and debt sustainability theory, related literature and concluding remarks. Third chapter provides review Pakistan economy and its public debt position, monetary and fiscal polices of Pakistan. Chapter four provides Methodology, Models, Ratios, Percentages and its Graph & Diagrams, Empirical Result, Projection, Argument and Scenario Analysis. Last chapter is based on Policy Recommendation, Concluding Remarks. Lastly, there are attached some indices and references.

Chapter II

Debt and its Sustainability Theory

2.1 Introduction

This chapter is consists on definition and concept of public debt with reference to debt of Pakistan, origin and escalation of debt, impact of public debt on viable policy public debt, various public debt sustainability methodologies, literature review and concluding remarks. Although I will concentrate on accounting approach indicator for debt sustainability and probabilistic model approach for policy simulation.

2.2 Debt Definition

Debt means something owed such as money, goods and services, but usually an amount to be paid by person or organization in future. A country debt refers the total amount of money owed by the government as a consequence of borrowing in the past to meet its expenditure.

The concept of debt varies and depends upon the composition of the financial system of the country and the particular question to be answered. Most of the definitions of debt depend on the liabilities of government⁴.

According to the international manual⁵ debt has defined as: “Debt, at any given time, is the outstanding amount of those actual current, and not contingent liabilities that require payments (s) of principal and/or interest by the debtor at some point(s) in the future”.

The Global Development Finance (World Bank) has defined public debt as an “External obligation of a public debtor, including the national government, a political subdivision, and autonomous public bodies”.

This definition is related to the external debt, excluding domestic debt, which is one of the important part of total Public debt. Hence public debt should be defined with respect to internal as well as external borrowing obligation of the country.

In Pakistan the Fiscal Responsibility and Debt Limitation Act 2005 set an office called Debt Policy Coordination Office (DPCO), the main objectives of which to provide debt statistics, measuring debt burden, analyzing debt problems and formatting debt policy. At present there is huge uncertainty, on the concept and model of public debt. Though in government papers, public debt repeatedly refer to domestic and external debt and tends to imply that they should be added up to get the total public debt. Even the Central Bank of Pakistan annual report and some IMF reports have in the past tended to lump domestic debt with external debt, both public and private, to get an overall extent of debt.

Public debt is more differentiated between government debt and the debt of public corporations, whether or not guaranteed by the government. However, only those parts of the external debt are included in government debt, which is serviced through the budget, while the external debt owned by public corporation, either guaranteed or not by the government should be summed separately. Bearer certificate and special US dollar bonds owed to resident are also included in external debt. Private sector external debts are not included in public debt figures. These are the main components of the public debt, which are again divided in to sub-components, as follows.

⁴ Here liabilities of Government refer to total Public debt(Total govt domestic & foreign currency debt)

⁵ External Debt Statistics, guide for compilers and user, IMF and others, 2003, page 7, paragraph 2.3.

2.2.1 Foreign Debt

Foreign Debt, according to the rules, comprises the external monetary debt obligations, including guarantee commitments by government to non-residents in other currencies, usually in US dollar. Using the suggested conceptual change, adjusted for external obligation, the foreign currency debt is summarized as:

- Public and Publically Guaranteed Debt:
 - Medium and long term longer than one year, i.e. Multilateral, Paris club, Dollar & Euro bonds/Saindak bonds, Military debt, Commercial loans/credits and other bilateral.
 - Short term debt less than one year, i.e. Islamic Development Bank (IDB).
- Private Non-guaranteed Debt.
- International Monetary Fund (IMF) debt.
- Debt obligation to Residence in Foreign Exchange currency.

2.2.2 Domestic Debt

The Domestic Debt, according to the rules comprises the monetary debt obligations, including guarantee commitments by the government to residents in local currency. A domestic debt of Pakistan has considerably changes its composition in recent years, although it has three main heads.

- Permanent Debt: Includes Market loans, Federal Government bonds, Income tax bonds, Government special bonds, Bearer national bonds and special national funds bonds.
- Floating debt (*Market Treasury Bills*): A short term instrument debt composed on Treasury Bills of three months and Market Treasury Bills for replacement.
- Unfunded debt (*National Saving Schemes*): A long-term debt, based on Defence Saving, National Saving, Khas Deposited, Bahbood saving, Special saving (Register & Bearer), Regular Income and all others types of certificate debt.

In this study I will use the public debt, is considered as the sum of internal debt (domestic currency debt) and external debt (foreign currency debt), are aggregated in **Pakistan Economic Survey**.

2.3 Origin of Public Debt

Budget deficit is the prerequisite for public debt. It is a situation when government's expenditures exceed its revenues. Mathematically, this statement can be written as,

$$G - T > \text{Zero}$$

Where G stands for government expenditures and T is taxes (revenue). This identity indicates that government is in deficit. This identity presenting only government debt, since then government meet this deficit either by borrowing or by printing currency. Mathematically this can be written as;

$$G - T = \Delta D + \Delta H$$

Where (G-T) is the government deficit that needs to be financed through government borrowing i.e. debt (ΔD) from money stock or from (ΔH) currency creation.

But this identity explaining the government debt, as our case is not only government debt but also all other types of debt which Pakistan earn at any other shape. Hence our total debt (public debt) is equal to external as well as internal debt, as defined in section 2.2.

Government's total expenditure should be equal to total revenue from all sources, if not then debt takes place. Governments can take several alternatives to finance their expenditure. Mostly in developing countries, due to some social problems, financing deficit by raising tax revenue some time may not be possible, because tax systems are not very flexible; it is simple to worsen the tax, but hard to enhance it. Tax systems in developing countries regularly consist of large variety of taxes, and it is complicated to raise or change in the short and medium terms.

Secondly, the government allow the central bank to print money, which may cause inflation, as a tax for financing deficit. Inflationary financing may be a helpful approach when government is not able to adjust other taxes. This seignorage way of the debt is the justification of hyper inflation, as happened in Bolivia (1980s) and Germany (1920s). However, not all printing money creates inflation. The central bank can print money without inflation, when there is demand for money and economic growth can take place.

Debt can meet, through borrowing from external sources, for investment purposes. When these investments generate income, the country can repay the loans.

2.4 Escalation in Debt

Debt is one of the supporting and holds up items of a government, as to finance its expenditures. Following are the some main reasons that explain the growth of debt.

- **Development Finance:** debt is pre-requisite for developing countries to borrow for investment purposes and to develop infrastructure, or human development [big push]. If the resources are utilized efficiently, they can be expected to promote enough economic growth, therefore, debt can be serviced, if not, then debt accumulation take place.
- **Current Expenditure/Spending:** Some countries, due to political instability, borrow form internal or external sources for consumption purpose, for the benefits of their supporter, or increasing subsidies to public employment without increasing the government revenues. The repayment of such type of debt is shift to the future government, hence cause debt growth.
- **Government Marketplace Power:** Government access to borrow money from international market at lower rates, then the private borrowers and also the government itself have lower risk, so borrows in large amounts thereby decreasing managerial cost. The gross debts increase, where as net debts may not increase at once. But when the loans are rented at subsidized rate, then the gross debt becomes net debt. Normally in developing countries, public, state and private enterprises, when achieve subsidized credits, will have less care in their investment, thereby increasing their default risks. The debt burden may also increase when the government has to fiscalize to prevent creditworthiness abroad.

- **Availability Concession Loans:** In 1970 the OPEC surplus countries made commercial banks, just to force loans to developing countries at very low rate of interest. Thus developing countries could borrow to finance their investment with an expected rate of return higher than the cost of borrowing.
- **War Finance:** According to the “father of economics” Adam Smith; debt financing is needed in wartime or some time on special occasions. Hence when country is in war situation, it may urgently need funding to meet its war expenditure. Hence wars result in sharp and temporary growth in debt.

2.5 Impact of Public debt on Viable Policy Responses

Public debt has different impact on different types of economic policy. The differences of constraints depend upon whether debt is internal or external and is based on their period of maturity. Debt policy of the government also has great effect and influence on the economic position of the country. In this study according to our research question, we emphasized on macroeconomic policy, especially monetary and fiscal policy and on the sustainability of public debt.

2.5.1 Public Debt and Monetary Policy

The main objective of monetary policy is to controls supply of money, its availability and controls interest rate in country through monetary authorities, but a highly indebted country may have problems of establishing an effectively operating monetary policy.

Monetary authority tries to control the increase in interest rate, through expansionary monetary policy. Although this strategy may reduce interest rate in short run, but in long run it will not be beneficial, and hence real interest rate will increase and inflation will take place. Hence financing debt through central bank increases supply of money and/or from external sources leads to expansion of reserves; ultimately the result could be rise of inflation. Central bank also tries to manage the composition of the debt portfolio, through interest rates, exchange rate or money aggregates.

One most important influence of expansionary monetary policy is that it crowding out private sector borrowing. Crowding out occurs when the government meets public debt through selling bonds, which reduce money stock. However this strategy pulls out money from economy, which increases the cost of borrowing in private sector, due to less availability of money stock. High interest payments further enlarge a country's debt obligations.

Sound monetary policy means that Government, funded budget deficit by issues of securities to the private sector at market interest rates, and not borrow from the central bank.

2.5.2 Public debt and Fiscal Policy

By definition the main goal of the fiscal policy in developing countries is to increase the rate of capital formation and thus accelerate economic growth. Least distorting budgetary policy improves resource allocation and achieves distributive objectives, and sustainable debt levels. Sound fiscal policy leads to effective management and composition of spending and taxation, as well as to manage the levels of deficits and

debt. But a country which is highly indebted, the fiscal policy will not work effectively.

Expansionary fiscal policy will cause an increase in the budget deficit which has many adverse effects. Higher budget deficit will require higher taxes in the future and may cause crowding out, because when government spending increases, it decreases the size of the private sector. High debt puts upward pressure on interest rates, which causes slower growth in the rest of the economy. Unsustainable fiscal deficit and high debt levels increase inflationary expectations and cause interest rates to rise, and/or the currency to depreciate.

Public debt sustainability depends on the level of budget deficit and on the terms of its financing both from external and internal sources. Budgetary burden of public debt comes from interest and principal repayments that have to be bear by the budget.

Fiscal policy has impact on aggregate demand of the country, and any increase in budgetary deficit has to be financed by government borrowing, which causes higher taxes in future, and that rational consumers will take into account these current taxes by curtailing their spending. This offsets have full impact of an expansionary fiscal policy on aggregate demand.

Hence an increase in government borrowing results in an expansionary fiscal policy, which will compete with private borrowers for funds, driving interest rates and the exchange rate up and making private investment and exports more costly.

Moreover, if the deficits continue for prolonged periods, the accumulation of PUBLIC DEBT⁶ and rising interest payments on that debt will raise interest rates further over time, depressing aggregate demand and jeopardizing the government's ability to undertake further revenue and expenditure changes for stabilization purposes.

High debt structure affects the costs of debt servicing and can put at risk fiscal sustainability.

2.5.3 Public Debt and Economic Growth

Debt is sustainable, if poverty reduction as well as economic growth can take place. Hence high level of GDP growth rate means, achieving affordable level of debt obligation. On the other hand when an economy is slow, listless or sluggish, then it is very difficult to find resources, not only for repayment of principal amounts but also paying the current debt service obligation. In such circumstances the debtor country need money to meet its current expenditure. Hence large and high debt stocks lead to capital flight, increase tax rate, and continuous borrowing puts negative effect on economic growth. High debts have different effect, not only related to macroeconomic performance, but also to political and institutional effect. High debt also undermines the effectiveness of structural reforms, which aim to enhance poverty reduction as well as economic growth.

Economists argue that inflation, reduces public investment and uncertainty in economy occurs due to high level of debt, with absence of these elements, and thus economic growth overhang.

⁶ Canadian Encyclopaedia (Fiscal Policy)

2.5.4 Public debt on other Effects

Public debts have adverse effects not only on the monetary and fiscal policy, but also have negative effect on the economy of the country. Large public debts result in loss of confidence of investor and make economy more vulnerable to crises of international confidence. If the investor, especially foreign, loses confidence, then no investment will take place, capital flight will occur and it will depreciate local currency, which also has several macroeconomic problems. The more and the most crucial problem, due to depreciation, is that it increases the external debt burden. Although depreciation appears to be better for those countries, which have export base to increase its competitiveness. But developing countries most of their exports are raw materials, which lose prices and hence decreases export in absolute terms. Therefore foreign exchange earnings decrease, which leads to increase of external debt burden, ultimately effect on economic growth.

Secondly due to high public debt a country will be in need of large capital from foreign countries, which may be achieved by several conditions from debtors, in a result, the country may lose its political independence.

2.6 Debt Sustainability

As mention before that capability of a country to service its debt within its resources, without recourse to debt relief, reschedules of debt or without compromising on growth [IMF, 1997:17].

A segment of small debt is usually wiped out by inflation, which reduces real debt burden, therefore, a part of nominal interest payments, in fact represents repayment of principal amounts.

In analyzing debt burden, focus should be concentrated on the real magnitude, of real interest rate⁷ and the real rate of growth of debt⁸. If the real growth rate of debt exceeds the real growth rate of GDP or revenue, then debt/GDP or debt/revenue ratio will begin to rise, and when this ratio persists for a long time, then the growth in debt burden will assume to be unsustainable. Equally with respect to external debt, when the debt growth rate exceeds from the growth rate of foreign exchange earning, then the debt burden as a proportion of foreign exchange earnings will go up and is considered being unstable. Challenging rules of debt supervision relate to growth of debt burden to cost of borrowing. For instance:

- If the primary fiscal deficit (i.e. deficit before interest payments) is zero, the ratio of public debt to revenues will not rise as long as the average real interest rate on debt does not exceed the real rate of growth of revenues.
- If there is no current account balance of payments deficit, before interest payments, it can be shown that the ratio of external debt to foreign exchange will not increase as long as average real interest rate on debt does not exceed the real rate of growth of foreign exchange earnings.

Hence the levels of deficit before interest payments, the costs of borrowing, and rate of growth of GDP and foreign exchange earnings are critical determinants of trends in debt burden.

⁷ Real interest rate is calculated as nominal interest rate minus rate of inflation.

⁸ Real growth of debt is equal to the nominal growth rate in debt less rate of inflation.

Currently in a more sophisticated way the debt management relate of debt burden have to be understood in the light of borrowing, stated by Debt Management Office⁹ that “if primary fiscal deficit (deficit before interest rate) is zero, the ratio of debt-revenue will not raise as long as real interest rate on debt, dose not exceed the real rate of growth in revenue. Likewise, if there is no current account balance of payments deficit, before interest payments, it can be shown that the ratio of external debt to foreign exchange will not increase as long as average real interest rate on debt does not exceed the real rate of growth of foreign exchange earnings.”

Hence it means that, the costs of borrowing, rate of growth of revenues, the levels of deficits before interest payments and foreign exchange earnings are significant important in determining the debt burden. So we should to understand the **extreme levels of debt burden**. Normally public debt to revenue ratio should not be exceed 250 percent and the ratio of external debt to foreign exchange earnings should not exceed 150 percent, in case when the debt is not concessional, but this ratio should stay around 350 percent and 200 percent respectively in case of moderate degree of concessional loan. In the same way, it is normally desirable that external debt service payments not exceed 20-25 percent of foreign exchange earnings and also public debt service payments are kept below 25-30 percent of government revenues (Pakistan Debt summery report not published).

2.7 Assessment of Public Debt Sustainability

There is no universal sustainable boundary of public debt. Debt sustainability is a forward-looking concept, and hence can not be assessed with certainty. At best one can make guesses or develops norms for prudent levels of borrowing with relation to some evidence happened in past, and on the basis of that, can make an idea about debt sustainability. The following are some methodologies used for assessing sustainability debt level, as:

- Sudden Stop Approach
- Probabilistic Model Approach
- Human Development Approach
- Accounting Approaches Indicators
- Econometric Approach

Each of them has its own advantages and peculiarity to deal with particular situations. Most of them are based on different variants of government budget constraints and use certain assumptions.

Pakistan is in list of developing counties. Based on economy position I suggest to applying the Accounting Approaches Indicators and Probabilistic Model Approach for Pakistan.

2.7.1 Accounting Approaches Indicators

Analysis which attempts to set thresholds of debt indicators refer accounting approach indicators.

⁹ Summer report on debt burden, Debt Management Office, Ministry of Finance, Pakistan

Maastricht Treaty¹⁰ set the ratio indicators criteria that Debt to GDP Ratio should not exceed than 60 percent of GDP. Common Wealth Secretariat (1999) developed three thresholds for developing countries to use as criteria for public debt. Fiscal deficit to GDP Ratio should not exceed 3 percent of GDP, Public debt servicing to Government Revenue should not exceed from 15 percent and Public Debt to Government Revenue should not be more than 200 percent.

The (Serieux J. 1999) set criteria for Heavily Indebted Poor Countries (HIPC) that External debt Service Payment to Export Ratio should not be more then 20% from the export of good and services. Therefore ratios which we used in this research work are as following:

1. Public Debt to GDP Ratio = $\frac{\text{Total Outstanding Debt}}{\text{Gross Domestic Product}}$
2. Fiscal Deficit to GDP Ratio = $\frac{\text{Fiscal Deficit}}{\text{Gross Domestic Product}}$
3. Public Debt Payment Service to Govt. Revenue Ratio = $\frac{\text{Debt Service Payment}}{\text{Government Revenue}}$
4. Domestic Public debt to Govt. Revenue Ratio = $\frac{\text{Outstanding Domestic Debt}}{\text{Government Revenue}}$
5. External debt Service Payment to Export Ratio = $\frac{\text{External Debt Service Payment}}{\text{Export Earning}}$

2.7.2 Probabilistic Model Approach

Analysis which attempts through some probabilistic model are refers to probabilistic model approach. I will used the model for Public Deb/GDP Ratio, indicated by Kulasake Limpiyakoen (2002) of Sawaite (2001) used for Thailand public debt sustainability and for External Debt to Export Ratio, model of Professor Karel Jansen lecture notes of (Glick 1986).

Model for public debt to GDP ratio¹¹:

$$\Delta d_t = p_t + \left\{ \frac{(r - g)}{(1 + g)} \right\} d_{t-1}$$

Where d_t = public debt to GDP ratio in period t

p_t = fiscal deficit¹² to ratio to GDP in period t.

r = real interest rate,

g = real growth rate in GPD,

¹⁰ Maastricht Treaty sets a series of convergence criteria for European Monetary Union, which create single Currency (Euro). They also defined that as a maximum government deficit-to-GDP ratio of 3 percent at market prices, and a maximum government debt-to-GDP ratio of 60 percent at market prices;

¹¹ The formula is indicated by Kulasake Limpiyakorn (2002), working paper, ISS, The Hague

¹² Here fiscal deficit is the primary deficit (the deficit before interest payment)

Hence the change in public debt/GDP is sustainable ($\Delta d < 0$) depends on:

- Primary balance should be balance in long run. If it is continuously in deficit, it means that government can not able to control its spending or not be able to raise its revenue, to finance its expenditure, so that no money is left to repay its debt servicing.
- Real growth rate (g) in GDP should be greater than real interest rate(r) i.e. (g > r). If g < r means that debt profile is worsened and hence unsustainable.

Under such circumstances the public debt management is linked to fiscal and monetary policy, therefore for public debt sustainability both the policy need to coordination.

Model for external debt to export ratio¹³:

The accumulation of external debt is:

$$D_t - D_{t-1} = M + iD_{t-1} - X_t \quad \text{or} \quad D_t = M - X + (1+i)D_{t-1} \quad (1)$$

Where (D) is debt accumulation, occurs from the deficit on the balance of payments between payments for imports (M) and debt service (iD) and from the receipts of export (X) earnings. Let the other elements of the BoP are ignored for simplicity.

Expressing equation (1) as proportion of exports (X) can be written as:

$$\frac{D_t}{X_t} = \frac{M_t - X_t}{X_t} + (1+i)\frac{D_{t-1}}{X_t} \quad \text{and let } X_t = (1+g_x)X_{t-1} \text{ and } \frac{D_t}{X_t} \text{ as } d_t \text{ then}$$

$$d_t = \frac{M_t - X_t}{X_t} + \frac{1+i}{1+g_x}d_{t-1} \quad (2)$$

Where g^x is the growth rate of exports. The Debt/Export ratio will be growing as long as imports exceed exports and as long as the coefficient of d_{t-1} in equation (2) is greater than one, i.e. if $(1+i) > (1+g_x)$ or $i > g_x$. If exports equals imports, the condition for growth of d ($d_t > d_{t-1}$) is that $i > g_x$. Equation (2) also tells us that the growth of the debt burden can be dampened by policies that would reduce imports, increase export growth, or lower the interest rate. The interest rate in equations (1) and (2) is, of course, the international interest rate, on which local policies may be assumed to have little influence.

2.7.3 Debt Sustainability Based on Quality of Policies and Institutions

It is essential to mention that debt sustainability especially in developing countries should cannot be isolation from standard of general economic management and quality of policies and institutions, because they play very important roles at national and international level. According to World Bank “A key empirical finding is that low-income countries with weaker policies and institutions tend to face debt-servicing

¹³ Model from Professor Karel Jansen from his lecture notes.

problems at lower levels of debt than countries having strong institutions. Countries with a weak institutional environment tend to be more prone to misuse and mismanagement of fund and are more vulnerable to exogenous shocks like drought.” That is why it is generally thought that the indicative debt-burden thresholds depend on a country’s quality of policies and institutions.

2.9 Literature Review

Sawada¹⁴ (1994) investigated that whether or not the heavily indebted poor Countries (HIPC) and also the others developing economies would stay behind and remains solvent in relation to their external debts. He used the Unit roots and co-integration tests for the long-run government solvency in incurring debts in a foreign country. He said that when co integration is confirmed then it is an indication that the government does not have a long-run solvency problem. He found out that the debt ridden countries of Latin America were likely to have a debt-related problem; in contrast, East Asian economies (except the Philippines) have satisfied the solvency conditions.

Kulasake Limpiyakorn (2002) in his working paper analysed public debt sustainability of Thailand experience after the crisis in 1997. He used the ratio approach, and found that public debt is sustainable, only domestic debt to GDP/ratio is unsustainable. He also found that private investment was crowded out due to higher public borrowing.

Eatzaz Ahmad (1999), investigated Public debt through privatization of Pakistan, by using a three-gap simulation model. He argues that through privatization, sale of public assets to domestic investors, make easy domestic public borrowing and debt burden and the benefit from privatization can be sustained in the long run productive investment. He further said that the sale of public assets to foreign investors can reduce the size of internal as well as external debt but no effect on the current accounts deficit.

Further he explained that if investment efficiency is greater in the private sector, then privatization can improve the over all production of capital. This would translate into a reduced capital output ratio, thereby reducing the need for external borrowing to achieve a given growth rate of GDP.

Hafiz A. Pasha and A.F. Aisha Ghaus (1997), analysed, growth and sustainability of public debt in Pakistan. They used threshold of external debt/GDP, and shows that change in external debt/GDP ratio can be attributed to the increase in non-interest current account deficits and capital losses on external debt due to real exchange rate depreciation. However, access to concessionary financing from multilateral and bilateral agencies has been a major factor responsible for restricting the level of external debt/GDP ratio. They also investigate the domestic debt and concluded that increase in the public debt/GDP ratio, due to domestic debt. The major rise in the debt is large primary budget deficits in the two different periods and which is possible to alleviate by the large differential between real external and domestic interest rate and the real growth rate of the economy.

They argue that, in future public debt to revenue ratio should be constant; otherwise the ratio will increase with higher interest rates, which cause debt unsustainable. They

¹⁴ Taken from John Michael Rennie Gopela Hallig (2004), Economic of Development, ISS, The Haage.

further said that fiscal policy should be keep the primary budget deficit at level which ensures that public debt to GDP ratio, will be below 0.5 percent of the GDP.

Abdul Waheed (2005), investigated the behaviour of public external debt in Pakistan, and stated that many other developing countries, Pakistan is a highly indebted low-income county and is facing serious hardship in external dept servicing.

He argues that that macroeconomic modelling is not suitable for Pakistan because of suffering critically weakness, due financial sector reforms in Pakistan. Hence he addressed to developing of flow of fund model of Pakistan economy, with a respect to financial sector reforms, along with simplified real sectors. In this study he used model based on the emerging literature on gap models.

Using this gap models he analyzes, he assist the behaviour of public external debt in Pakistan, and then developed a medium term strategy to reduce the burden of public external debt for next five years.

The results indicate that increase in exports, increase in taxes, reduction in bond rate, reduction in lending rate and devaluation of the currency appear to be very significant in reducing foreign borrowing and bringing the external debt to sustainable levels. The study also found that further reduction in domestic deposit rate, bank rate and required reserve ratio has less significant effects on public debt sustainability.

2.10 Concluding Remarks

In brief chapter II has attempt to survey on public debt, its definition, its creation, its explanation with reference to Pakistan public debt and on indicator procedures of debt thresholds for debt sustainability. Based on the debt indicator we may analyse sustainability of public debt, and that, Pakistan public debt is the sum of domestic and external debt.

The literature review argues that increasing export; maximize the debt/GDP and debt/export ratios. Increase in non-interest current account deficits and government policy reforms and sound debt management are essential for getting out debt problem. The sales of Government self enterprises can reduce the size of external debt as well as internal borrowing and debt. Also increase in exports, increase in taxes, reduction in bond rate and lending rate, and devaluation of the currency appear to be very significant in reducing foreign borrowing and bringing to sustainable levels.

This research work aims to analyze public debt sustainability and its effect on macroeconomic objectives of fiscal and monetary policy and macroeconomic variables in general and development of public debt in medium term (FY2009-FY2015) by using the prediction of key economic indicators in order to see where the public debt is sustainable over the time with some assumptions. Hence in this research work I analyzed Pakistan public debt, used formulas explained in section 2.7.

Chapter III

Pakistan Economy & Public Debt¹⁵

3.1 Introduction

This chapter provides about Pakistan's economy, its public debt position and its like with fiscal and monetary policy and in last its conclusion.

3.2 Growth and Fiscal Indicators

Pakistan's economy has taken a dramatic downturn from last some years. Economic growth was 7.5, 8.6 and 6.8 percent in fiscal years 200-04, 2004-05 and 2006-07, respectively, decline and recorded to 5.8 percent in 2007-08. Table 3.1 shows growth and fiscal indicators in the last ten years.

Table No.3.1 Fiscal Indicators as a % of GDP

Years	GDP(Con) growth %	Fiscal deficit as %GDP	Total revenue as% GDP	Total Expendit. as% GDP	Inflation CPI	GDP Deflator	Trade deficit as% GDP	C/A deficit as %GDP
1997-98	3.5	7.7	16.0	23.7	7.8	6.6	2.4	3.1
1998-99	4.2	6.1	15.9	22.0	5.7	5.9	2.8	4.1
1999-00	3.8	5.4	13.4	18.8	3.6	2.8	2.4	1.6
2000-01	2.0	4.3	13.1	17.4	4.4	6.7	2.1	0.7
2001-02	3.1	4.3	14.0	18.3	3.5	2.5	1.7	1.9
2002-03	4.7	3.7	14.8	18.5	3.1	4.4	1.3	3.8
2003-04	7.5	2.3	14.1	16.9	4.6	7.7	3.3	1.3
2004-05	8.6	3.3	13.8	17.2	9.3	7.0	5.5	1.6
2005-06	5.8	4.3	14.1	18.4	7.9	10.5	9.5	4.5
2006-07R	6.8	4.3	14.9	20.6	7.8	8.0	8.1	5.1
2007-08P	5.8	6.5	14.7	21.3	10.3	13.4	9.8	7.1

Source: Economic Survey of Pakistan (2005-06, 2007-08)

Fiscal indicators have shows mixed trend. On average, fiscal and current account deficits almost 7 percent and 5 percent of GDP, respectively during 1990-99, but it is 4.13 percent and 4.25 on average during 2000-2008 Fiscal deficit show an increasing trend from last three years and in 2007-08 is 6.5 percent of the GDP as compared to 4.3 in the last year.

Total expenditure has shows an increasing trend in the last five years. On the other hand total revenue showed decreasing trend or say stagnant, which shows unfavourable position between expenditure and revenue. This situation will put adverse effect on debt sustainability.

Current account deficit shows an increasing trend in the last five years, which is one negative point for debt obligation. Over the last decade, with few exceptions, inflation approximately is very high in Pakistan. CPI-based inflation for the last four years stood average 9.3 percent, 7.9 percent, 7.8 percent and 10.3 percent, as having the same position of GDP-deflator, as shown in table 3.1.

¹⁵ Pakistan economy & its debt, have developed from the Pakistan Economic Survey 2007-08

3.3 Financing Fiscal Deficit

Table No.3.2 Financing Fiscal Deficit

Components	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Over all Deficit	-190	-181	-130	-217	-325	-377	-683
Financing (net)	190	181	130	217	325	377	683
External	83	113	-6	121	149	147	119
Domestic (I+II+III)	107	68	136	96	176	230	564
I-Non-Bank	85	120	61	8	8	57	100
II-Bank	14	-56	64	60	71	102	464
III- Privatization	8	4	11	28	97	71	0
% to Finance							
External	44%	62%	-5%	56%	46%	39%	17%
Domestic	56%	38%	105%	44%	54%	61%	83%

Source: Economic Survey (2007-08) of Pakistan

Table 3.2 shows that how to finance the fiscal deficit in different years. It show that fiscal deficit is almost financed from domestic sources, even in year 2003-04 more than 100 percent have been financed from domestic source. Hence this is also one reason that domestic debt share are more in total debt.

3.4 Balance of Payment

Balance of payments, (BOP) of Pakistan shows an unfavourable position from the last four years. Table 3.3 shows that in 2003-04 the current account was in surplus, but after then the account is continuously remained in deficit. This deterioration in current account deficit is due to net outflows from services and income account and is relatively of high import growth and decline in export of services.

Worker remittances the second largest source of inflows after exports, continuously maintained its raising trend, but due to high deficit, as whole the accounts is still in negative position.

Table No. 3.3 Balance of Payment

Components	2003-04	2004-05	2005-06	2006-07	2007-08
					July-April
Trade Balance	1208	-4352	-8236	-9495	-12595
Export(fob)	12396	14401	16388	17119	15991
Import (fob)	-13604	-18753	24624	26614	28586
Services net	-3584	-5841	-7302	-7968	-8777
Private transfer (net)	6116	8440	9914	10102	9299
Workers remittances	3871	4168	4600	5494	5319
Current account balance	1314	-1753	-5624	-7361	-12073
Excluding official transfers					
Current account balance	-----	-----	-4990	-6878	-11586
Including official transfers					
Long terms capital (net)	-201	1706	4642	9856	5325
Change in reserves(-ve = Increase)	-626	-227	-675	-4183	6225

Source: Economic Survey (2005-06,2006-7, 2007-08) of Pakistan

Table 3.4 shows that trade is in deficit and have increasing trend, while the current account deficit shows the same situation, except for three year, 2002, 2003 and 2004, and it was all because of high worker's remittances.

The increasing trend in currant account is very high in the year, 2007 and 2008, which is unpleasant for the economy, and will play adverse role in external debt sustainability.

Table No. 3.4 Balance of payments as percentage of GDP

Year	Export	Import	Trade Deficit	Worker's Remittances	Current Account Deficit
2000-01	12.9	15.1	2.1	1.5	0.7
2001-02	12.8	14.4	1.7	3.3	+1.9
2002-03	13.5	14.8	1.3	5.1	+3.8
2003-04	12.5	15.9	3.3	3.9	+1.3
2004-05	13.0	18.5	5.5	3.7	1.6
2005-06	13.0	22.5	9.5	2.9	4.5
2006-07	11.8	21.2	9.4	3.8	5.1
July-April					
2006-07	9.6	17.3	7.5	3.09	4.76
2007-08	8.9	18.7	9.8	3.1	7.06

Source: Economic Survey (2007-08)

The current account deficit is to hang about as an issue for Pakistan, due to higher oil prices and the impact on the garment and textiles trade with the lifting of quota limitations on exports over 2008.

Hence this unfavourable circumstances of economy position effect not only the financial system of the country, but also creating difficulties for debt obligation

3.5 Investment and Saving

Investment was 22.1 and 22.9 percent of GDP in 2005-06 and 2006-07 respectively, decreased to 21.6 percent of GDP in 2007-08.

Public sector investment remained at last year's level of 5.7 percent; private sector investment however, registered a decline of 1.4 percentage points, and decline from 15.4 percent to 14.2 percent. National Saving was able to finance only 69.5 percent of fixed investment as against 83.6 percent for the last year 2006-07. Domestic saving also declined significantly to 11.7 percent of GDP in 2007-08 as compared to 16 percent for the last year 2006-07. This can be seen in the table 3.5.

Table No. 3.5 Investment and Saving as Percentage of GDP

Description	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-09P
Total Investment	17.2	16.8	16.9	16.6	19.1	22.1	22.9	21.6
Change in Stock	1.4	1.3	1.7	1.6	1.6	1.6	1.6	1.6
Gross Fixed Investment	15.8	15.5	15.3	15.0	17.5	20.5	21.3	20.0
Public investment	5.7	4.2	4.0	4.0	4.3	4.8	5.7	5.7
Private Investment	10.2	11.3	11.3	10.9	13.1	15.7	15.6	14.2
Foreign Savings	0.7	-1.9	-3.8	-1.3	1.6	3.9	5.1	7.6
National Savings	16.5	18.5	20.8	17.9	17.5	18.2	17.8	13.9
Domestic Savings	17.8	18.1	17.6	15.7	15.4	16.3	16.0	11.7

Source: Economic Survey 2007-08

National saving has a declining position since 2004, because of the negative revenue deficit. These low national saving rates invite the country, way out to foreign savings to achieve investment and growth targets. Hence such greater dependence on foreign savings leads to greater accumulation of external debt.

3.6 Foreign Investment

Foreign investment was 7 billion, 5.3 billion and 3.6 billion in financial year 2005-06, 2006-07 and 2007-08 respectively, which shows a decline of 32.16 and 16.7 percent. As shown in the table No. 3.6.

Description	2005-06	2006-07	2007-08	Change	%
Foreign Private Investment	6960.0	5278.1	3580.5	-1698	-32.16
Foreign Direct Investment	5139.6	4180.8	3481.6	-699	-16.72
Privatization Processed	266.4	133.2	133.2	---	----
Portfolio Investment	1820.4	1097.3	98.9	-998	-90.99
Equity Securities	1570.4	847.3	98.9	-748	-88.33
Debt Securities	250.0	250.0	0.0	-250	-----
Foreign Public Investment	1468.3	671.4	20.5	-651	-96.95
Portfolio Investment	1468.3	671.4	20.5	-651	-96.95
Equity Securities	738.0	738.0	0.0	-738	----
Debt Securities	730.3	-66.6	20.5	87.1	-130.78

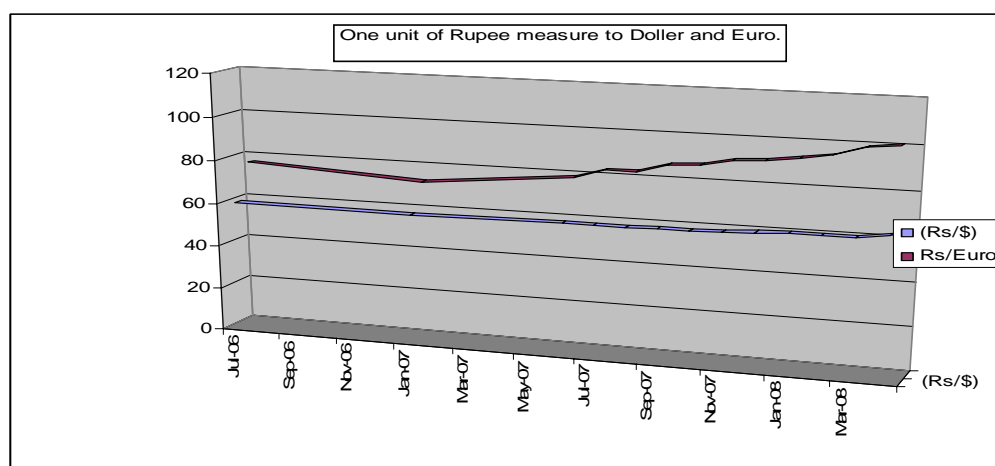
Source: Economic Survey 2007-8 and own calculation.

Foreign investment is the major source of private external capital flows as well as widening the saving-investment gap, which also provides non-debt creating inflows. Foreign investment does not create debt obligations, but helpful in meeting debt obligation. But in Pakistan foreign investment has been declining, for the last several year, which is one negative point in external debt obligation.

3.7 Exchange Rate

Pakistan exchange rate is working under flexible exchange rate, however, the centre bank can make interventions on requirement for stabilizing the local currency. Pakistan's currency (rupee) was stable to the end of March 2008, but depreciated significantly against US\$ by 6.4 percent during April-July 2008 and this phenomenon is still continued. Moreover Pak currency not only depreciated against US\$ but also against Euro. At the end of June 2007, Pak rupee was 81.78 per Euro, which depreciated to 100.47 during April-July 2008 and registered depreciation @ about 18.7 percent. For instance the movement of Pak rupee exchange rate versus US\$ and Euro is given in the following figure 3.1.

Figure 3.1. Rupee Exchange Rate against US \$ and Euro



3.8 Public Debt of Pakistan

In section 2.2 we discussed that Pakistan Public debt is the quantum of debt denominated in domestic debt (local currency: Rupees) as well as in external debt (foreign currency) of Pakistan, this is further explained as:

3.8.1 Domestic Debt

Pakistan's domestic debt, are classified in three main categories: permanent debt, floating debt and unfunded debt. Permanent debt includes medium and long-term debt such as Pakistan Investment Bonds and prize bonds. Floating debt consists of short-term borrowing in the form of t-bills. Unfunded debt refers mostly to outstanding balance of various national saving schemes. The following table No. 3.7 showing the composition of overall domestic debt.

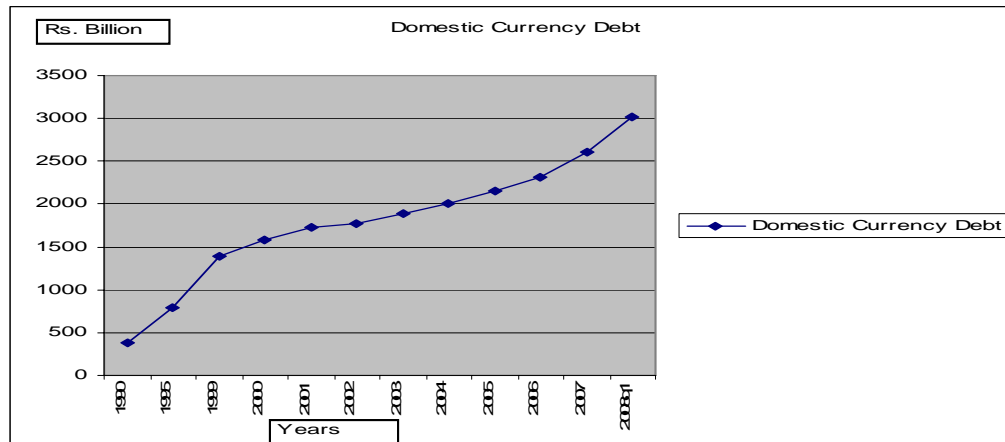
Table No. 3.7 Outstanding Domestic debt							(Rs. Billion)	
	2002	2003	2004	2005	2006	2007	2008(P)	
Permanent Debt	424.8	468.8	570.0	526.2	514.9	562.5	615.7	
Floating Debt	557.8	516.3	542.9	778.2	940.2	1107.7	1407.2	
unfunded Debt	792.1	909.5	899.2	854.0	859.2	940.0	997.2	
Total internal debt	1774.7	1894.6	2012.1	2158.4	2314.3	2610.2	3020.1	
As % of GDP	40.3	39.3	35.7	32.8	30.0	30.0	30.3	
As % of Internal Debt								
Permanent Debt	23.94	24.74	28.33	24.38	22.25	21.55	20.39	
Floating Debt	31.43	27.25	26.98	36.05	40.63	42.44	46.59	
Unfunded Debt	44.63	48.00	44.69	39.57	37.13	36.01	33.02	
Total % of internal Debt	100	100	100	100	100	100	100	

Sources: Economic survey and own calculation.

The bulk of domestic debt, in which long-term debt (permanent debt) and balance of various national saving schemes debt (unfunded debt) are decreasing, whereas the short-term borrowing (Floating debt) are increasing trend. The share of floating debt is almost 50 percent of total internal debt.

With the expansion of financial sector in Pakistan, the government has relied more on domestic sources, due to which Pakistan's domestic debt stock increased to Rs. 2610.2 billion in 2007, this shows a growth of 11.9 percent – much higher than the average growth of 7.7 percent during the preceding four years. The figure 3.2 shows the increasing trend of internal debt.

Figure. No. 3.2 Trend in Domestic Debt,



3.8.2 External Debt

Loaning from outer surface from the country constitute external debt. Pakistan's external debt and liabilities is comprised of all government debt denominated in foreign currency. The external debt shows that huge part of debt is public & publicly guaranteed debt, which is long-term debt, implies a large accumulation of debt, always remains in outstanding. The share of IMF is very low, usually helpful in balance of payment support. The share of Private Non-Guaranteed Debt is also small in total external debt, these debt relate to private enterprises with government ownership of more than 50%, register with Centre Bank of Pakistan (CBP) and finally benefits from a foreign exchange convertibility guarantee from CBP. The composition of external debt and its liabilities are shown in the table 3.8.

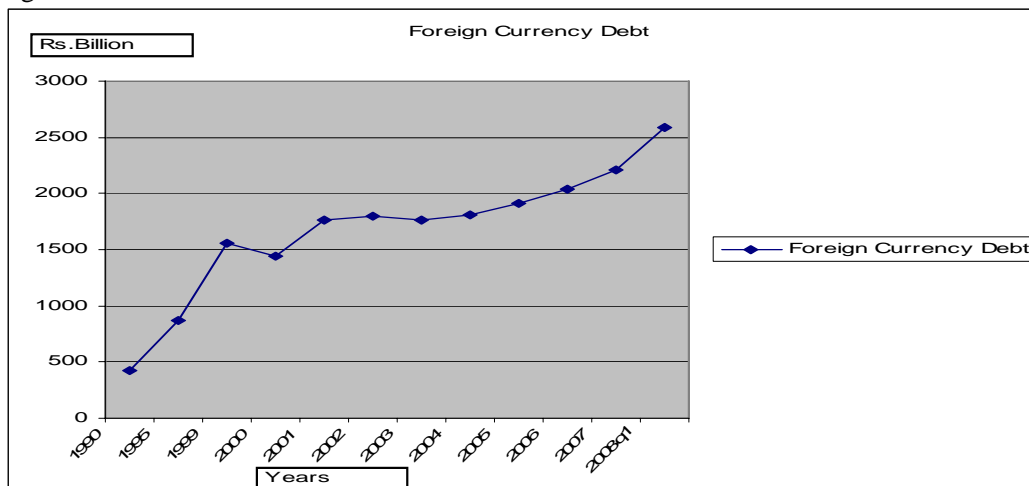
Table ¹⁶ No. 3.8 External debt and its Liabilities.		US\$ Billion						
Description	FY02	FY03	FY04	FY05	FY06	FY07	FY08	
1. Public and Publically Guaranteed debt	29.23	29.19	29.93	32.1	32.91	35.35	40.7	
A. Medium and long term	29.05	29	29.91	31.8	32.74	35.32	40.1	
Paris Club	12.52	12.59	13.63	13	12.79	12.69	14.5	
Multilateral	14.33	14.95	14.35	16.4	16.82	18.69	21.5	
Other bilateral	0.43	0.47	0.69	0.81	0.92	1	1.18	
Euro Bonds/Saindak Bonds	0.64	0.48	0.82	1.27	1.91	2.71	2.68	
Military debt	0.82	0.26	0.2	0.19	0.13	0.08	0.05	
Commercial Loans/Credits	0.31	0.25	0.22	0.18	0.17	0.15	0.12	
B. Short term loans less the one year	0.18	0.19	0.02	0.27	0.17	0.03	0.61	
IDB	0.18	0.19	0.02	0.27	0.17	0.03	0.61	
2. Private Non-guaranteed Debt and Liabilities	2.23	2.03	1.67	1.34	1.59	2.25	2.49	
3. IMF	1.94	2.09	1.76	1.61	1.49	1.41	1.41	
Total External Debt (1 to 3)	33.4	33.31	33.36	35	35.99	39.01	44.6	
of which Public debt and liability	29.9	30.6	31.3	32.1	33.9	36.5	41.3	
4. Foreign exchange Liabilities	3.13	2.12	1.95	1.8	1.59	1.47	1.33	
Total External Debt and its Liabilities	36.53	35.43	35.31	36.8	37.58	40.48	45.9	
(of which Public debt)	29.9	30.6	31.3	32.1	33.9	36.5	41.3	
Official Liquid Reserves	4.34	9.53	10.56	9.81	10.77	13.35	13.4	
As Percentage of GDP								
1 Public and Publically Guaranteed debt	40.77	35.42	30.54	29.31	25.83	24.57	23.82	
A. Medium and long term	40.52	35.19	30.52	29.06	25.70	24.54	23.47	
B. Short term loans less the one year	0.25	0.23	0.02	0.25	0.13	0.02	0.36	
3. IMF	2.71	2.54	1.80	1.47	1.17	0.98	0.83	
Total External Debt	46.58	40.42	34.04	32.00	28.25	27.11	26.11	
4. Exchange Rate Liability	4.37	2.57	1.99	1.64	1.25	1.02	0.78	
Total External Debt and Liabilities	50.95	43.00	36.03	33.64	29.50	28.13	26.89	
Official Liquid Reserves	6.05	11.57	10.78	8.96	8.45	9.28	7.83	
Memo								
GDP (in billion of US Dollars)	71.7	82.4	98	110	127.4	143.9	171	

Source: Economic Survey of Pakistan (2006-07, 2007-08)

External debt grew by 4 percent in 2006, while in 2007 it grew by 7.8 percent, stood at Rs. 2296 billion in the first quarter of 2008, equating to US \$ 45.9 billion of total external debt and its liabilities. Majority of the external debt and liabilities are the in the form of medium and long terms borrowing from multilateral and bilateral lenders which account for more than 80 percent of outstanding debt. In the table 3.8, we observe that medium and long term (Paris Club, Multilateral and other bilateral debt stood at 40.1 billion, which is the only huge amount with respects to all other debt. The share of short term debt is very low. It is important to note that the government of Pakistan focused to reduce the external debt due to this the external debt and liabilities declined from 42.3% of GDP at the 2001 to 23.03% of the GDP by the first quarter 2008, but in absolute terms the trend of external debt have upward trend, which can be observe in figure 3.3.

¹⁶ Developed from Economic Survey 2007-08, page No 160.

Figure No. 3.3 Trend in External Debt,



3.9 Public Debt Position

Pakistan's public debt grew at an average rate of 18 percent and 15 percent per annum during the 1980s and 1990s, respectively-much faster than the growth in nominal GDP (11.9% and 13.9% respectively). Resultantly, public debt rose from 56 percent of GDP at the end of 1970s to 92 percent by the end of 1980s. In other words, it increased by 36 percentage points of GDP during the 1980s.

The public debt stock was at a level of 54.4 percent of the GDP in 1980; it rose to 91.8% of the GDP in 1990-91 and 100.3% of the GDP in 2000 and presently 56.13 % of GDP.

The public debt stock was at a level of 319 percent of the revenues in 1980; it rose to 394.3% of the revenues in 1990 and 601.5% of the revenue in 2001.

Public debt was 85 percent of the GDP (on the basis of the new GDP series with the 1999-2000 bases) by the end of the 1990s.

In 2000 the Government of Pakistan followed debt management strategy to decline public debt. Due to this debt strategy, the public debt declined from 100.3% as a GDP in 2000 to 56.3% as GDP at 2008. But in same period public debt in absolute terms increased from Rs.3018 billion in 2000 to Rs. 5613 billion in 2008 first quarter, as shown in table No.3.6 Pakistan's public debt grew by 10.7 percent in the 2007, which translate into an annual average growth rate of 6.7 percent since 2000. The nominal growth rate of GDP on the other hand showed a slower growth rate of 13 percent over the same period.

Debt is considered important in relation to government revenue. In 2000 public debt was 588 percent of the total revenue, which declined to 371 percent by the end of 2007, although increase to 380 percent in 2008 first quarter.

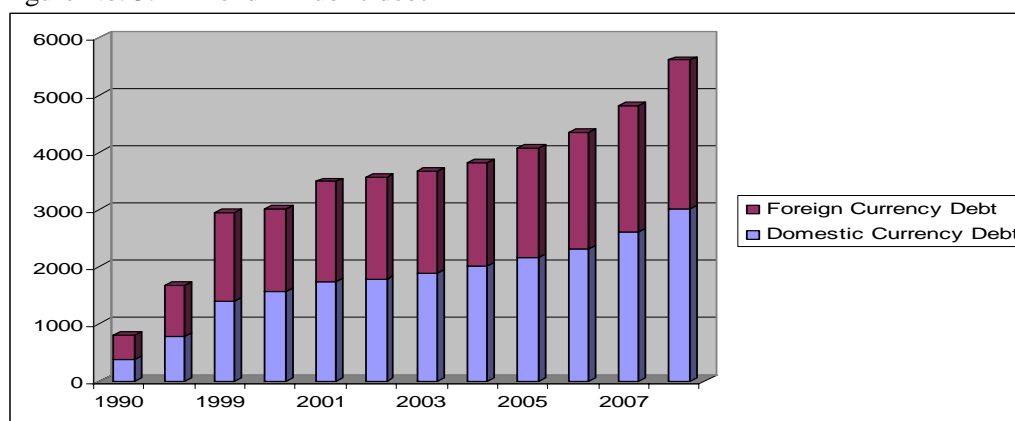
Table No 3.9 Total Public Debt in Multiple years

Years	1990	1995	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008q1
Billion of Rs.												
Domestic Currency Debt	374	790	1389	1576	1728	1775	1894	2012	2158	2314	2610	3020
Foreign Currency Debt	428	873	1557	1442	1761	1795	1766	1810	1913	2041	2213	2593
Total Public Debt	802	1663	2946	3018	3489	3570	3660	3822	4071	4355	4823	5613
In percentage of GDP												
Domestic Currency Debt	42,79	42,34	47,28	41,19	41,51	40,32	39,27	35,67	33,20	30,47	29,98	30,29
Foreign Currency Debt	48,97	46,78	53,00	37,69	42,30	40,78	36,62	32,09	29,43	26,88	25,42	26,01
Total Public Debt	91,76	89,12	100,27	78,88	83,81	81,10	75,89	67,75	62,63	57,35	55,39	56,30
In percentage of Revenue												
Domestic Currency Debt	235	245	296	307	312	284	263	250	240	211	201	205
Foreign Currency Debt	269	270	332	281	318	288	245	225	213	186	170	176
Total Public Debt	504	515	628	588	631	572	508	474	452	398	372	380
In percentage of Total Debt												
Domestic Currency Debt	46,6	47,5	47,1	52,2	49,5	49,7	51,7	52,6	53,0	53,1	54,1	53,8
Foreign Currency Debt	53,4	52,5	52,9	47,8	50,5	50,3	48,3	47,4	47,0	46,9	45,9	46,2
Total Public Debt	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Memo												
Foreign Currency Debt(\$ Billion)	19.3	28.1	30.2	27.5	27.8	29.9	30.6	31.2	32.1	33.6	36.4	37.9
Exchange Rate(Rs/US \$)	21.9	31.1	51.6	52.5	63.4	60.1	57.7	57.9	59.7	60.2	60.6	60.6
GDP (in Rs Billion)	874	1866	2938	3826	4163	4402	4823	5641	6500	7594	8707	9970
Total Revenue (in Rs. Billion)	159	323	469	513	553	624	721	806	900	1095	1298	1476

Source: Various Economic Survey, M/O Finance Division,

The table 3.9 shows that the structure of public debt. The share of both external and internal debt shows a declining trend after followed government debt strategy in 2000. *The Debt/GPD ratio has decline trend, due to reduction in fiscal and current accounts deficit, lowering the cost of borrowing, raising revenue and debt re-profiling from Paris Club, but still the percentage of total debt to GDP is more then 50 percent i.e. 56.30 percent.* Figure 3.4 shows the increasing trend in public debt in the multiple years.

Figure No. 3.4 Trend in Public debt

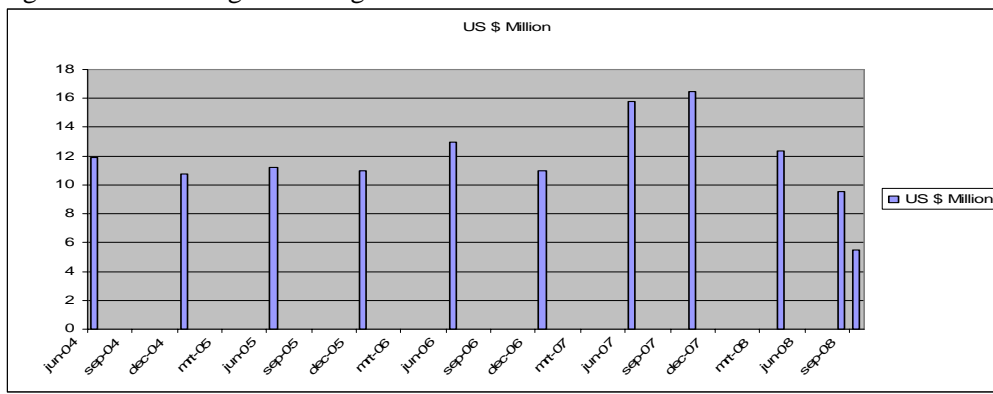


Despite improvements in recent years, public debt remains a serious problem for Pakistan. Also domestic public debt is becoming a larger component of total public debt of total debt, it has received relatively less attention despite of its serious economic and social implications.

3.10 Foreign Exchange Reserves

Pakistan foreign exchange reserves have been depleting and still have a declining situation. Total foreign exchange reserves were 15.646 US\$ million in June 2007, which were significantly reduced to 12.344 US\$ in April 2008. As mentioned earlier, in September 05, 2008 the reserves had fallen to 5.5 billion. Figure 3.5 shows foreign exchange reserves position from last four years.

Figure No.3.5 Foreign Exchange Reserves



According to Business News¹⁷ Karachi, “Pakistan’s foreign reserve crisis deepened further as the central bank said it had lost around 700 million dollars in just a week. The State Bank of Pakistan's net foreign reserves fell to around 8.1 billion dollars against 8.8 billion, the bank said in a statement. The trend of declining reserves sent the Pakistani rupee down to 78.50 against the US dollar, compared with 78.30. Out of the 8.1 billion dollars around 4.68 billion dollars are the Central Banks own reserves while the rest are deposits of private financial institutions.”

Analysts (**Dr Qaisar Bengali**) said that “increase in import bill is constantly putting pressure on Pakistan’s foreign exchange reserves. The depleting reserves have also caused highest-ever depreciation of rupee. It has lost 21.7% since the beginning of the year”.

Hence in present situation the country seems to be in financial crisis, and agencies are expecting that Pakistan is close to defaulting on its commitments of external loan repayments. So this hard situation has an adverse effect on Pakistan debt.

3.11 Debt Servicing

Debt servicing and its liabilities of the country in an economy has an important component with the accumulation of debt. It’s squeezed the net flow of foreign resources, when debt servicing increased. In 1990s the net flow of resources was US \$534 million an average, but in 2003-04 it has declined to negative US \$1708, due to

¹⁷ Pakistan's crisis of net foreign reserves deepens, Business News, Oct 4, 2008, 10:09 GMT. www.monstersandcritics.com/news/business/news/article (Accessed on 18th October 2008)

lower disbursement over the increasing debt servicing. Over reliance on external resources have many allegation of debt servicing problem.

Net transfer as percentage of total disbursement was 25 percent in the decade 1990s, and in the last seven year only for 2004-04 is negative. In 2008P the net resources inflows were accounted 44 percent of Net transfer of gross disbursement, as shown in table 3.10.

Table No. 3.10 Debt Servicing and NT as % of Gross Disbursement

Year	Gross Disbursement	Debt Servicing	Net Transfer (NT)	NT as % of Gross Disbursement
2000-01	1599	1546	53	3
2001-02	2316	1190	1126	49
2002-03	1553	1327	226	15
2003-04	1270	2978	-1708	-134
2004-05	2275	1461	814	36
2005-06	2863	1572	1291	45
2006-07	3232	1748	1484	46
2007-08P	2503	1413	1090	44

Source: Economic survey of Pakistan

3.12 Monetary Policy

Monetary policy is refers to that strategy, by which monetary authority use to controls, supply of money, availability of money, and adjust interest rate in the country. In Pakistan Monetary policy is controlled by the central bank, called **State Bank of Pakistan (SBP)**. Monetary policy can not be isolated from fiscal policy, due to government borrowing, spending and increase or decrease revenue. Hence both the policies have equaled important for the country political and economical stability. Pakistan tighten monetary policy began in 2005, broadly for moderate interest rate, together with broad-based private sector credit demand, which can helped in raising industrial production. This translated in to monetary expansion, which further fed core inflation in country. Government of Pakistan applied strategy with objective to reduced inflation, for this, in April 2005, raised its discount rate by 150 basis points to 9 percent and again 9.5 in July 2006. But due to high demand pressures in credit to private sector, raising import resulting in the widening of the current account deficit the strategy not succeeded, and the prices in Pakistan went high, especially the food prices, although it is global problem.

During the fiscal year 2007-08 the State Bank of Pakistan continued with tight monetary policy by raising the discount rate, increasing Cash Reserve Requirement and Statutory Liquidity Requirement so as to give incentives commercial banks to mobilize long-terms deposits. Moreover in order to improve the effectiveness of monetary policy and avoiding ambiguities in sending out policy signal, the SBP has abolished the Annual Credit Plan. With all this strategy, the main purpose was to made effectiveness monetary policy in country, but due to political uncertainty, less security environment, unseen law and order situation on domestic front and international financial crises, the monetary policy not worked out for Pakistan, i.e. in country the prices are not stability, there are full unemployment, and no name of economic prosperity and welfare of the people of the economy in the country.

3.13 Fiscal Policy

Fiscal policy refers to government policy that attempts to influence the direction of the economy through changes in government taxes, or through some spending or say fiscal allowances. The two main instruments of fiscal policy are government spending and taxation. Reduce in tax rates or rises in government expenditure both tend to stimulate the domestic economy.

Pakistan fiscal policy focused on sustained economic development, poverty alleviation and declining debt position. But due to several political and economic events, like heightened political tensions, soaring global oil prices, international and domestic food phenomena have make adverse consequences for fiscal discipline. This unfavorable condition of fiscal deficit continuously missing the target of 4 percent of GDP for the last three year. Although IMF provision is that fiscal deficit should not be greater then 3 percent of GDP.

This hard, environments has caused several macroeconomic imbalances, for which Pakistan is likely to pay a heavy price in terms of devaluation of Pak rupee, rise in the level of poverty, widening of current account deficit, increase in domestic and external debt, lose of foreign exchange reserves, rise in interest rate, high inflation and the most important is the deceleration in economic growth.

3.14 Conclusion

The chapter has reviewed in brief the macroeconomic indicators of Pakistan, which shows that numerous factors are responsible of debt accumulation in country. This large extent of debt accumulation is one great challenge for country.

Now at what level this challenge is to acceptable or at what level the debt is sustainable and how much debt is consider as too much. It is well know that a country or government accumulate debt beyond its debt servicing, then a debt crises can create a large economic and social costs. Therefore it is necessary for the government to find out a way to how much debt a country can safely absorb. This leads to an important and significant question as to what level of debt is sustainable.

Therefore in chapter II, we mentioned, debt sustainability methodologies, at which debt can be assist. In next chapter we assist public debt sustainability of Pakistan.

Chapter IV

Assessment of Debt Sustainability in Pakistan

4.1 Introduction

For assessing debt sustainability, we are using the methodologies, as discussed in chapter II, section 2.8.2. Therefore first of all we shall assess public debt in current situation, and then the public debt sustainability will be assessed in medium term perspective, under the projection of macroeconomic variables. At the end will conclude the result.

4.2 Assessment of Debt Sustainability

4.2.1 Accounting Approaches Indicators

This section will provide critical thresholds level of different debt ratio, so as to understand sustainable public debt.

4.2.1.1 External debt Service to Export Ratio

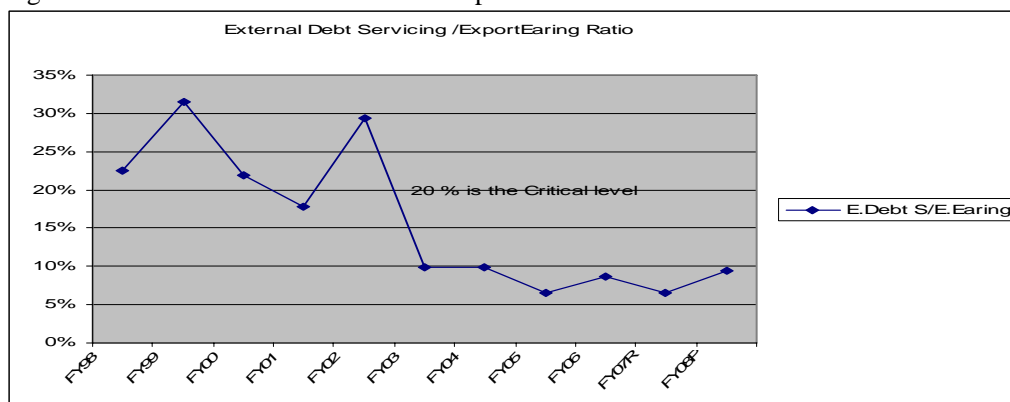
Table 4.1 shows the external debt services to export ratio. The ratio is above from the critical level of 20% in the fiscal years 1998, 1999, 2000 and 2002, and then it declined and came below to target level in fiscal year 2003 to 2008. The average of external debt to servicing to export earning ratio is 16 percent, which is below from the critical level.

Years	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07R	FY08P
External Debt Serving	84	123	97	96	165	64	70	56	85	67	88
Export Earning	373	390	444	539	561	652	709	854	985	1029	940
External Debt /Export. Earning	23%	32%	22%	18%	29%	10%	10%	7%	9%	7%	9%
Remarks	Unsustainable level		Sustainable		Unsustainable			Sustainable level			
Average of External Debt Servicing to Exports Earning = 16%											

Source: Data from economic survey of Pakistan 2007-08 and own calculation

The figure 4.1 shows trend of external debt servicing to export ratio. The trend suddenly dropped below the critical level in 2003. The reason is that government shift fiscal deficit to finance from domestic source and also of the debt rescheduling in the end of the year 2001, which bringing this external debt ratio to lower level.

Figure No. 4.1 External debt Service to Export



4.2.1.2 Public Debt to GDP Ratio

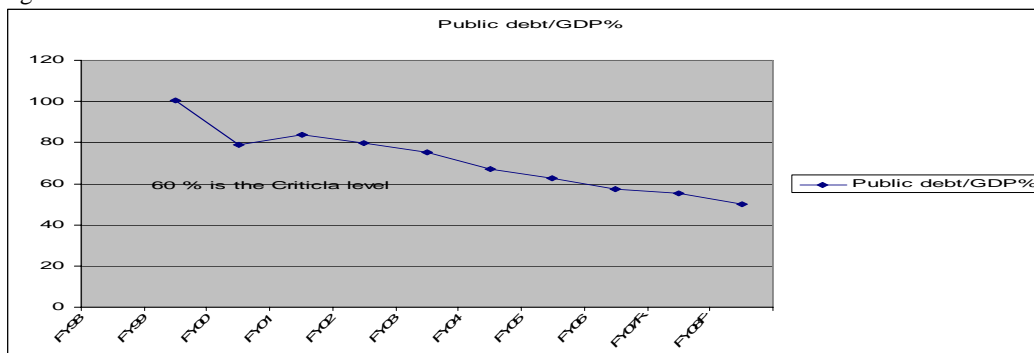
Table 4.2 shows Public Debt/GDP ratio. Public debt stock was at 100.27 percent 1999; it decreased to 62.63 percent in the year 2005, above from the critical level. Since then the trend came below from the critical level of 60 percent in the last three years 2006, 2007 and 2008 to sustainability level. This is all because of sharp increase in the GDP growth rate. The growth rate was 5.8, 6.8 and 5.8, during the period 2006, 2007 and 2008 respectively. Hence based an average (74.10%) public/GDP ratio seems unsustainable.

Years	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07R	FY08P
GDP	2678	2938	3826	4163	4402	4823	5641	6500	7594	8707	9970
Total Public debt	2564	2946	3018	3489	3570	3660	3822	4071	4355	4823	5613
Public debt/GDP%	95,74	100,27	78,88	83,81	81,10	75,89	67,75	62,63	57,35	55,39	56.13
Remarks	unsustainable level						Sustainable level				
Average of Public Debt to GDP Ratio from FY98 to FY08P = 74.10 %											

Source: Data on GDP & Public debt from economic survey and own calculation

The figure 4.2 shows the decreasing trend in public debt to GDP ratio. The trend is above the critical level of 60 % till to 2004. After then the trend has come down from the critical level in the year 2006 to 2008.

Figure No. 4.2 Debt to GDP Ratio



4.2.1.3 Fiscal Deficit to GDP Ratio Public

As discussed before that the Commonwealth Secretariat has set the benchmark for developing countries that fiscal deficit to GDP ratio should not be more than 3% of the GDP. Based on this squabble, we observed that through out the in period under study the fiscal deficit to GDP ratio is more than 3%, except for the year 2004 and can say 2005. Moreover the ratio has increasing trend from FY05 to FY08, as shown the table 4.3. The average calculation of fiscal deficit/GDP ratio is 4.8 percent, which is more than 3 percent of the critical level.

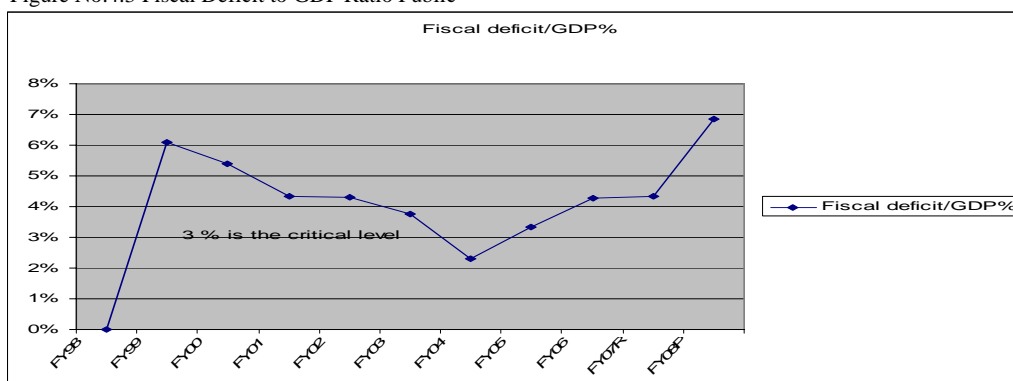
Years	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07R	FY08P
GDP	2678	2938	3826	4163	4402	4823	5641	6500	7594	8707	9970
Total Revenue	429	469	513	553	624	721	794	900	1077	1298	1546

Tax Revenue	355	391	406	442	478	556	611	659	804	890	1063
Nontax Revenue	74	78	107	111	146	165	183	241	273	408	483
Total expenditure	634	648	719	733	814	901	924	1117	1402	1675	2230
Current Exp.	530	548	626	646	700	791	775	864	1035	1375	1833
Development Exp.	104	98	96	90	126	129	161	228	365	434	412
Net Leading to PSE's	0	2	-13	-18	0	-22	20	25	2	-9	-15
Statistical Discrepancy	0	0	10	15	-12	3	-32	0	-86	-125	0
Fiscal deficit	205	179	206	180	190	180	130	217	325	377	684
Fiscal deficit/GDP%	7,7%	6,1%	5,4%	4,3%	4,3%	3,7%	2,3%	3,3%	4,3%	4,3%	6,9%
Remarks	Unsustainable level					Sustainable level		Unsustainable level			
Average of Fiscal Deficit to GDP Ratio from FY98 to FY08P = 4.8%											

Source: Data on GDP & fiscal deficit from economic survey and own calculation.

The table 4.3 are viewed in the figure 4.3, shows that the fiscal deficit to GDP ratio has mixed trend during the period under study. The trend line is above the critical level of 3% except in FY04 in the whole period.

Figure No.4.3 Fiscal Deficit to GDP Ratio Public



4.2.1.4 Public Debt Service to Govt Revenue Ratio

Table 4.4 shows public debt serving payment to government revenue. The ratio is above the critical level of 15 percent. If a country use its resources more the 30% for paying its debt, then it is very difficult to meet its development expenditure. Currently Pakistan have the same situation, as that debt servicing payment to government revenue ratio in FY99 was 73%, then declined to 27% in FY08.

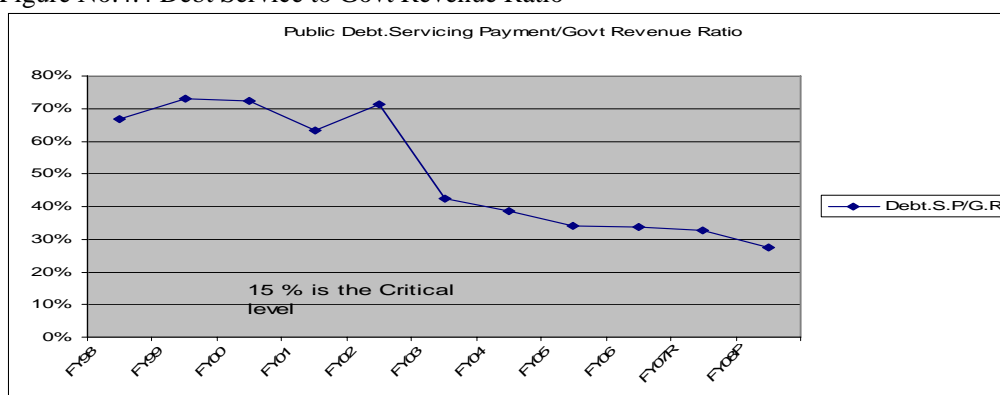
Years	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07R	FY08P
Interest Paid	202	220	274	254	279	242	237	251	277	359	336
Repayments/Amortization	84	123	97	96	165	65	70	56	85	67	88
Of Foreign Debt	59	77	79	75	68	47	46	54	63	54	63

And of Food Credits	25	46	18	21	97	18	24	2	22	13	25
Public Debt servicing payment	286	343	371	350	444	307	307	307	362	426	424
Govt Revenue	429	469	513	553	624	721	794	900	1077	1298	1546
Public Debt Servicing Pay. /Govt. Revenue	67%	73%	72%	63%	71%	43%	39%	34%	34%	33%	27%
Remarks	Total unsustainable level										
Average of Public Debt Servicing Payment to Government Revenue from FY89 to FY98 = 51 %											

Source: Data on GDP & fiscal deficit from economic survey and own calculation.

The Public debt servicing payment to government revenue ratio are viewed in figure 4.4, shows that the debt servicing to government revenue ratio have decreasing trend through out the period , but the trend is still above from the critical level of 15 percent as defined by the international agencies.

Figure No.4.4 Debt Service to Govt Revenue Ratio



4.2.1.5 Domestic Debt to Govt Revenue Ratio

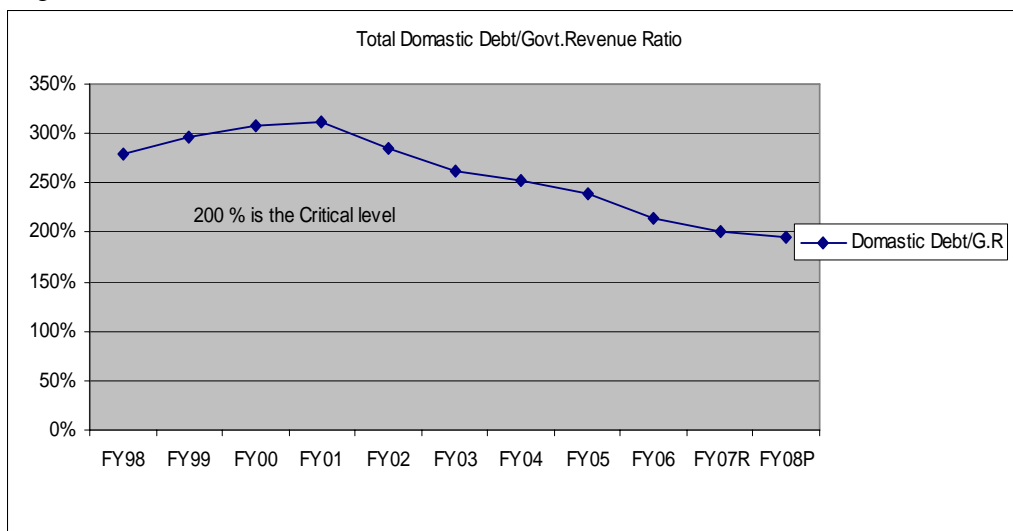
Domestic debt to government revenue, are indicated in table 4.5, it shows that from FY89 to FY06 the ratio is above from the critical level of 200 percent. After then the ratio declined to 201% and 195 % in the last two years, shows little bit a sustainable debt level. But the average domestic debt to government revenue ratio is 259 percent, which is above from the critical level.

Years	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07R	FY08P
Domestic Debt	1200	1389	1576	1728	1775	1894	2012	2158	2314	2610	3020
Govt Revenue	429	469	513	553	624	721	794	900	1077	1298	1546
Domestic Debt/G.R	280%	296%	307%	312%	284%	263%	253%	240%	215%	201%	195%
Remarks	Unsustainable level									Sustainable level	
Average of Domestic Debt to Government Revenue = 259%											

Source: Data from economic survey of Pakistan 2007-08 and own calculation

The domestic debt to government revenue trend ratio is shown in the figure 4.5, implies that the ratio is above from the critical level of 200% till to 2006, and then come to cross downward to critical level in fiscal year 2007 and 2008.

Figure No. 4.5 Model of Domestic Debt to Govt Revenue Ratio



4.2.2 Probabilistic Model Approach

a) **Public debt to GDP ratio:**
$$\Delta d_t = p_t + \left\{ \frac{(r-g)}{(1+g)} \right\} d_{t-1}$$

Where d_t = public debt to GDP ratio in period t

p_t = fiscal deficit¹⁸ to GDP ratio in period t.

r = real interest rate,

g = real growth rate in GDP,

Table No. 4.6 Model of Public Debt to GDP ratio.

Years	d_t	p_t	r	g	$(r-g)$	$(1+g)$	$\frac{r-g}{1+g}$	$\frac{r-g}{1+g}d_{t-1}$	$p_t + \frac{r-g}{1+g}d_{t-1}$
1997-98	0,9574	0,0011	0,053	0,035	0,018	1,035	0,0174		
1998-99	1,0027	-0,0140	0,098	0,042	0,056	1,042	0,0537	0,000	1,0028
1999-00	0,7888	-0,0146	0,059	0,038	0,021	1,038	0,0202	0,000	0,7885
2000-01	0,8381	-0,0166	0,125	0,02	0,105	1,020	0,1029	-0,002	0,8366
2001-02	0,8110	-0,0191	0,005	0,031	-0,026	1,031	-0,0252	0,000	0,8114
2002-03	0,7595	-0,0112	0,007	0,047	-0,040	1,047	-0,0382	0,001	0,7602
2003-04	0,6772	-0,0170	0,009	0,075	-0,066	1,075	-0,0614	0,001	0,6779
2004-05	0,6263	-0,0005	-0,024	0,086	-0,110	1,086	-0,1013	0,002	0,6280
2005-06	0,5710	0,0086	-0,019	0,058	-0,077	1,058	-0,0728	0,000	0,5710
06-07R	0,5535	-0,0011	-0,01	0,068	-0,078	1,068	-0,0730	-0,001	0,5528
07-08P	0,5332	0,0155	-0,01	0,058	-0,068	1,058	-0,0643	0,000	0,5333

Own Calculation

¹⁸ Here fiscal deficit is the primary deficit (the deficit before interest payment)

Table 4.6 show the public debt/GDP trend, it is sustainable, if primary balance should balance in the long run and the real interest (r) should not exceed real growth (g). In our case the primary balance (p_t) shows deficit in most of the years and real interest (r) are higher then real growth (g) in year 1997-98 to 2001-02. Although from the year 2002-03 to date shows positive position. The trend is declining position, but it is due to GDP growth. In these situations public debt is linked with monetary and fiscal policy, therefore for debt sustainability, both the policies need to be coordinated.

b) External debt to export ratio:
$$d_t = \frac{M_t - X_t}{X_t} + \frac{1+i}{1+g_x} d_{t-1}$$

Where d_t = External debt to GDP ratio in period t

M_t = Import in period t, i = real interest rate,

g_x = growth rate in export, X_t = Export in period t

Table No.4.7 External debt to export ratio

Year	Export	Import	i	g_x	External Debt	d_t	$\frac{M_t - X_t}{X_t}$	$1+i$	$1+g_x$	$\frac{1+i}{1+g_x}$	$\frac{1+i}{1+g_x} d_{t-1}$	$\frac{M_t - X_t}{X_t} + \frac{1+i}{1+g_x} d_{t-1}$
1997-98	373	436	0,043	0,147	1364	3,657	0,1689	1,043	1,147	0,91		
1998-99	390	466	0,123	0,046	1557	3,992	0,1949	1,123	1,046	1,07	3,9260	4,1209
1999-00	444	534	0,016	0,137	1442	3,248	0,2027	1,016	1,137	0,89	3,5687	3,7714
2000-01	539	627	0,184	0,215	1761	3,267	0,1633	1,184	1,215	0,97	3,1649	3,3281
2001-02	561	636	-0,06	0,041	1795	3,200	0,1337	0,937	1,041	0,9	2,9419	3,0756
2002-03	652	714	-0,05	0,163	1769	2,713	0,0951	0,952	1,163	0,82	2,6196	2,7147
2003-04	709	898	-0,02	0,087	1808	2,550	0,2666	0,981	1,087	0,9	2,4486	2,7152
2004-05	854	1223	-0,04	0,205	1913	2,240	0,4321	0,96	1,205	0,8	2,0323	2,4644
2005-06	984	1711	-0,05	0,153	2022	2,055	0,7388	0,951	1,153	0,82	1,8474	2,5863
06-07R	1029	1852	-0,05	0,045	2209	2,147	0,7998	0,951	1,045	0,91	1,8697	2,6695
07-08P	940	1979	-0,04	0,12	2296	2,443	1,1053	0,959	1,12	0,86	1,8378	2,9431

Source: Own Calculation

Table 4.7 is presenting the trend of Debt/Export ratio. The Debt/ Export ratio will be growing as long as import exceed than export and the co-efficient of ($d_{t-1} > 1$). But in this ($1+i$) is less the ($1+g_x$) and d_{t-1} is greater then one, shows sustainable level.

Hence the debt burden can be reduced by increasing export and decreasing import and lowering the interest rate, and hence go the debt in good direction.

4.3 Observation Regarding Public Debt of Pakistan

The results report in section 4.2 regarding the public debt sustainability, based on data from 1998 to 2008, are summarised in respect to debt sustainability as:

- **External debt Service to Export Earning Ratio:** this ratio in 1998, 1999, 2000 and 2002 respectively are above the target level of 20 percent, where as the rest of all other year are below from the critical level. Hence this ratio for the last five leads to **sustainable position**, because the average value is 16 percent, as calculated in table 4.1.

- **Public Debt to GDP Ratio:** The ratio is above the from critical level the year 1998 to 2005, since then for the last three year it is below from the target level. The average value public debt/GDP ratio is 74.10 percent, as given in table 4.1, are above from 60 percent of the critical level, leads to **unsustainable**.
- **Fiscal Deficit to GDP Ratio:** This ratio is above from of 3 percent for the critical level except for the two year 2004 and 2005. Average value of fiscal deficit/GDP ratio stood to 4.8 percent, as calculated in the table 4.2 are above from the standard agreed by International bodies. Such a high fiscal deficit definitely leads to debt acceleration and impairs the repayment capacity. Hence based on average value, fiscal deficit/DP ratio leads to **unsustainable**.
- **Public Debt Servicing to Government Revenue Ratio:** This ratio remained above from the critical level of 15 percent through the period. Hence this ratio is very high from the critical level, which leads to danger **position of unsustainable level**.
- **Domestic Debt to Govt Revenue Ratio:** This ratio also above the target level of 200 percent from the year 1998 to year 2006, since then in the last two year it is below from the critical level. The average value of this ratio is 259 percent, as given in table 4.4. above from critical level leads **to unsustainable**.
- **Probabilistic Model Approach:** The probabilistic model seeks to determine whether government can able to repay its debt in any circumstances. According to Public Debt to GDP Ratio, the government should coordinate both the monetary and fiscal policy, so as to curtail the debt burden. The External Debt to GDP the debt burden can be reduced by increasing export and decreasing import and lowering the interest rate, so as to make it sustainable level.

Hence we concluded that the debt is unsustainable. The probabilistic approaches say about coordination of monetary and fiscal policy and guiding to reduce import and increase export, so as to maintain sustainable debt level.

Since the current circumstances shows that debt situation in Pakistan can be unsustainable in the long run, and therefore it guided me to investigate debt sustainability in the medium term perspective in order to know where the public debt is sustainable over the time.

4.4 Medium Term Perspective Scenario Analysis

The dynamic of debt growth suggest that public debt problem is relatively more inflexible, so the formulation of a public debt reduction must be in the context of macroeconomic framework to ensure consistency of debt reduction with projections for key economic variables, like growth, investment, government revenue, expenditure and fiscal deficit.

Hence the purpose of this section is to assess development of public debt in the medium term (FY2009-FY2015), by using the key macroeconomic indicators to see public debt is sustainability, and how much the public debt ratio is sensitive by change the assumption.

4.4.1 Scenario Analysis

The medium term scenarios of debt sustainability are based on macroeconomic variable with fiscal adjustment. Key variables, whose future behaviour have been

projected are GDP growth, government revenues and expenditure, fiscal deficit, interest payment, primary surplus/ deficit and export earning.

Based on these phenomena we developed three scenarios with assumptions. In current situation the average growth of GDP at Current base is 13 percent, average growth of government revenue is 15 percent, average growth of expenditure 16 percent and export has 13, in the period (2000- 2008). All these variables show mixed fluctuation. Usually revenue and expenditure shows stable over the time. Hence base on this information we developed three scenarios which are as follows. Further we assume that interest payment and public debt position with all three scenarios are growing equally in projection period.

4.4.1.1 Scenario 1. Scenario with Unfavourable Economic Circumstances

In chapter three the macroeconomic indicators show that economy has continuously going to fall down, as the Pakistan actually have this situation. Under such circumstances we assumed that Pakistan economy will fall down in future, GDP growth, revenue, expenditure and export may be decline and assumed that:

- *GDP growth:-* GDP growth is 13 percent in 2007 and 2008. Assumed that GDP growth will decrease to 10 percent for next three year (2009-2011) and then come to 11 percent for the last four year (2012-2015).
- *Government Revenue:-* Hence due to less production, government revenue will be decrease. Assumed that Government revenue decrease to 14 percent for next three year (2009-2011) and then 15 percent for the last four year (2012-2015).
- *Expenditure:-* Hence growth and revenue have decline position, so assumed that expenditure should to controlled and adjust at 15 percent for next three years and then 16 percent for the next four years.
- *Export Earning:-* Similarly export also decline to 10 percent for the next three years (2009-11 and then 11 percent for the next four years (2012-15).

Table No.4.8 Scenario 1. With unfavourable economic circumstances Rs. Billion

Years	FY09	FY10	FY11	FY12	FY13	FY14	FY15
GDP at current(mp)	10967	12064	13270	14730	16350	18149	20145
Growth	10.0%	10.0%	10.0%	11.0%	11.0%	11.0%	11.0%
Total Govt. Revenue	1762	2009	2290	2634	3029	3484	4006
Growth	14%	14%	14%	15%	15%	15%	15%
Total Expenditure	2070	2381	2738	3176	3684	4273	4957
Growth	15%	15%	15%	16%	16%	16%	16%
Current Expenditure	1842	2100	2409	2731	3094	3504	4040
Interest Payment	540	564	576	598	628	642	655
Development Expenditure	228	281	329	445	589	769	917
Fiscal Deficit	308	371	447	542	655	790	951
Revenue Deficit/Surplus	-80	-90	-119	-97	-65	-20	-34
Export	1034	1137	1251	1389	1542	1711	1899

Growth	10%	10%	10%	11%	11%	11%	11%
Total public debt	5242	5556	5889	6243	6617	7014	7435
Foreign Debt	2255	2273	2433	2498	2630	4014	3871
Domestic Debt	2987	3283	3456	3745	3987	3000	3564
Public Debt Servicing Payment	442	462	488	520	542	568	592
External Debt Servicing Payment	100	152	220	290	365	390	400
Fiscal deficit% of GDP	2.8%	3.1%	3.4%	3.7%	4.0%	4.4%	4.7%
Public Debt % of GDP	48%	46%	44%	42%	40%	39%	37%
Debt Servicing payment to Govt Revenue Ratio	25%	23%	21%	20%	18%	16%	15.5%
Domestic Debt to Govt Revenue	169%	163%	151%	142%	132%	86%	89%
External Debt Servicing Export Ratio	9.7%	13.4%	17.6%	20.9%	23.7%	22.8%	21.1%

Source: Own calculation

According to scenario 1 we observe that primary revenue is in deficit, and there is problem with fiscal deficit to GDP ratio and public debt to GDP as out of the critical level. Moreover the external debt to export ratio is also have increasing trend, may be in near future cross the critical level. Our main purpose is to reduce the public debt. Also public debt to government revenue ratio is still above the critical level.

4.4.1.2 Scenario 2: Moderate Revenue and Moderate Social Development Expenditure

Under this scenario we assumed that economic position are going to better as compare to scenario 1. This scenario assumed that GDP growth will take place. Similarly revenue and export growth also increase. It also assumed that resource mobilization will enable the govt. to development public sector program's, which will improve the economic and social indicators and public debt will reduce. So we assumed that:

- *GDP growth*:- Assumed that GDP growth has 12 percent for next three year (2009-2011) and then 13 percent for the last four year (2012-2015).
- *Government Revenue*: - Hence due to positive increase in production, government revenue also increases to some extent. Assumed that Government revenue increase to 16 percent for next three year (2009-2011) and then maintain 18 percent for the last four year (2012-2015).
- *Expenditure*: - It is often happened that when government revenue increase, also expenditure increase. But here we assumed that expenditure are controlled and adjust at 16 percent for next three years and then 18 percent for the next four years.
- *Export Earning*:- Similarly export also increase to 14 percent for the next three years (2009-11 and then 16 percent for the next four years (2012-15).

Table No.4.9 Scenario 2: Moderate Revenue and Social Develop. Expen. Rs. Billion

Years	FY09	FY10	FY11	FY12	FY13	FY14	FY15
GDP at current(mp)	11166	12506	14007	15828	17886	20211	22838
Growth	12,0%	12,0%	12,0%	13,0%	13,0%	13,0%	13,0%

Total Govt. Revenue	1793	2080	2413	2848	3360	3965	4679
Growth	16%	16%	16%	18%	18%	18%	18%
Total Expenditure	2088	2422	2810	3315	3912	4616	5447
Growth	16%	16%	16%	18%	18%	18%	18%
Current Expenditure	1858	2136	2472	2851	3286	3785	4440
Interest Payment	540	564	576	598	628	642	655
Development Expenditure	230	286	337	464	626	831	1007
Fiscal Deficit	295	342	396	468	552	651	769
Revenue Deficit/Surplus	-65	-56	-59	-4	74	180	239
Export	1072	1222	1393	1615	1874	2174	2522
Growth	14%	14%	14%	16%	16%	16%	16%
Total public debt	5242	5556	5889	6243	6617	7014	7435
Foreign Debt	2255	2273	2433	2498	2630	4014	3871
Domestic Debt	2987	3283	3456	3745	3987	3000	3564
Public Debt Servicing Payment	456	487	520	542	588	690	630
External Debt Servicing Payment	100	152	220	290	365	390	400
Fiscal deficit% of GDP	2,6%	2,7%	2,8%	3,0%	3,1%	3,2%	3,4%
Public Debt % of GDP	47%	44%	42%	39%	37%	35%	33%
Public Debt Servicing payment to Govt Revenue	25%	23%	22%	19%	17%	17%	13%
Domestic Debt to Govt Revenue	167%	158%	143%	132%	119%	76%	76%
External Debt Servicing Export	9,3%	12,4%	15,8%	18,0%	19,5%	17,9%	15,9%

Source: Own calculation

Scenario 2 show primary revenue in deficit till to 2012 and also the fiscal deficit is above from the critical level in the last three years. Moreover the public debt servicing to government revenue come to critical level in last year.

4.4.1.3 Scenario 3: Strong Fiscal Adjustment, High Revenue and High Development Expenditure

Under this scenario we assumed that high economic growth take place that is institutional capacity which was eroded over the time will improved. Hence government ability to collect tax at high level and then efficiently spends on development process. Under such scenario revenue will highly increase as well export. But in the same time we assumed that government reduced its expenditure, especially the current expenditure has reduced in reduction of interest payment. The reduction in interest payment is made both by reduced debt level, change in its composition of external and internal debt. We assumed that:

- *GDP growth*:- Assumed that GDP growth increase to 14 percent for next three year (2009-2011) and then increase to 16 percent for the last four year (2012-2015).
- *Government Revenue*:- Hence due to high increase in production, government revenue also highly increase.. Assumed that Government revenue will increase to 20 percent for next three year (2009-2011) and then increase to 22 percent for the last four year (2012-2015) ..
- *Expenditure*:- Growth and revenue are assumed to increased. But due to debt reduction strategy the expenditure are controlled and adjusted at 17 percent for next three years and 18 percent for the next two years and then 19 percent for the last two years.

- *Export Earning*:- Similarly export also increase to 16 percent for the next three years (2009-11 and then 18 percent for the next four years (2012-15) as percentage of GDP.

Table No 4.10 Scenario 3 Strong Fiscal Adjustments, High Revenue and High Development Expenditure

Years	Rs. Billion						
	FY09	FY10	FY11	FY12	FY13	FY14	FY15
GDP at Current (mp)	11366	12957	14771	17134	19876	23056	26745
Growth	14.0%	14.0%	14.0%	16.0%	16.0%	16.0%	16.0%
Total Govt. Revenue	1855	2226	2671	3259	3976	4851	5918
Growth	20%	20%	20%	22%	22%	22%	22%
Total Expenditure	2106	2464	2883	3402	4014	4777	5684
Growth	17%	17%	17%	18%	18%	19%	19%
Current Expenditure	1874	2173	2537	2926	3372	3917	4633
Interest Payment	540	564	576	598	628	642	655
Development Expenditure	232	291	346	476	642	860	1051
Fiscal Deficit/Surplus	251	238	211	143	38	-74	-234
Revenue Deficit/Surplus	-19	53	135	334	604	934	1285
Export	1090	1265	1467	1731	2043	2411	2845
Growth	16%	16%	16%	18%	18%	18%	18%
Total public debt	5242	5556	5889	6243	6617	7014	7435
Foreign Debt	2255	2273	2433	2498	2630	4014	3871
Domestic Debt	2987	3283	3456	3745	3987	3000	3564
Public Debt Servicing Payment	456	487	566	645	720	896	962
External Debt Servicing Payment	100	152	220	290	365	390	400
Fiscal deficit% of GDP	2.2%	1.8%	1.4%	0.8%	0.2%	-0.3%	-0.9%
Public Debt % of GDP	46%	43%	40%	36%	33%	30%	28%
Debt Servicing payment to Govt Revenue Ratio	25%	22%	21%	20%	18%	18%	16%
Domestic Debt to Govt Revenue	161%	147%	129%	115%	100%	62%	60%
External Debt Servicing Export ratio	9.2%	12.0%	15.0%	16.7%	17.9%	16.2%	14.1%

Source: Own calculation

According to scenario 3 we see that there is fiscal surplus in the last two years. The public debt payment to government revenue ratio has above from the critical level. But this is also acceptable to 20 percent.

4.4.1.4 Graphic Explanation

Figure No. 4.6 Scenarios of External Debt servicing Payment to Export Ratio

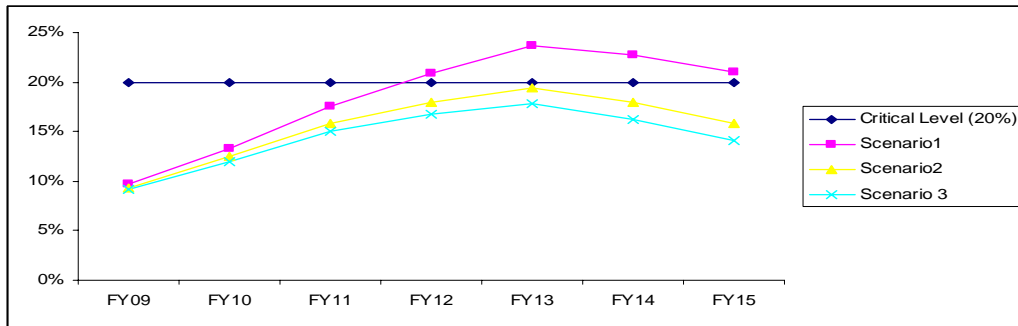


Figure 4.6 show that the trends of scenario 2 & 3 have increasing position, and then declined, also both are below from the critical level. Means that when export growth is high the government can able to achieve external debt servicing. The scenario1 the export growth is very low, due to economic crisis in country and crossed the critical level from the year 2003, but at last declined.

Figure No. 4.7 Scenarios of Public Debt to GDP Ratio

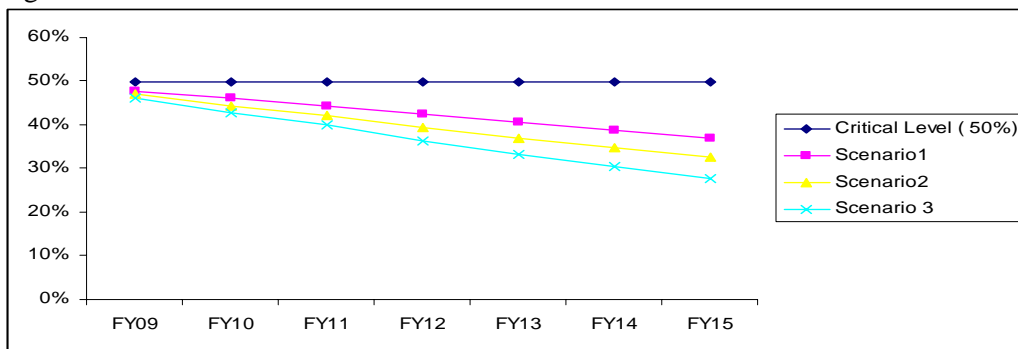


Figure 4.7 shows public debt to GDP ratio of three scenarios. All the scenarios are below from the critical level. In each case the GDP (denominator) is higher and increasing position then public debt growth, which bring ratio below from critical level continuously.

Figure No. 4.8 Scenarios of Fiscal Deficit to GDP ratio

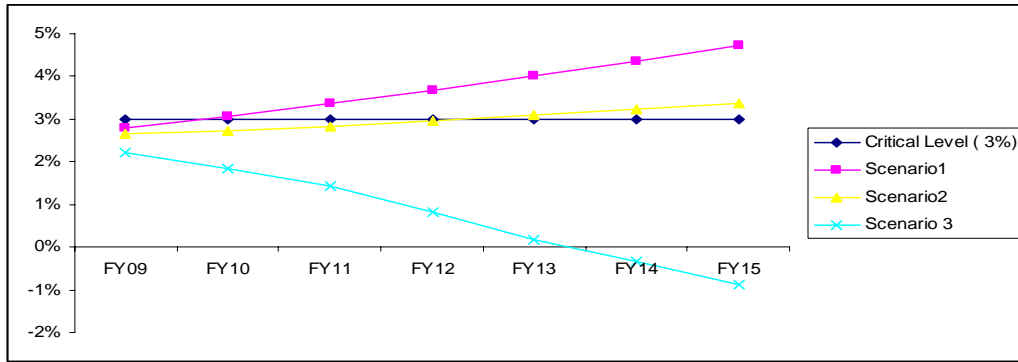


Figure 4.8 described the scenarios of fiscal deficit to GDP ratio. Scenario1 is above from the level o 3 percent almost, because of government expenditure are very high the government revenue i.e. high deficit. Scenario2 have fewer deficits, but still above from the critical level since 2003. Scenario3 is one of the batter trend and this can be possible only if government achieve highest growth, high revenue.

Figure No. 4.9 Scenarios of Public Debt Servicing Payment to Govt. Revenue

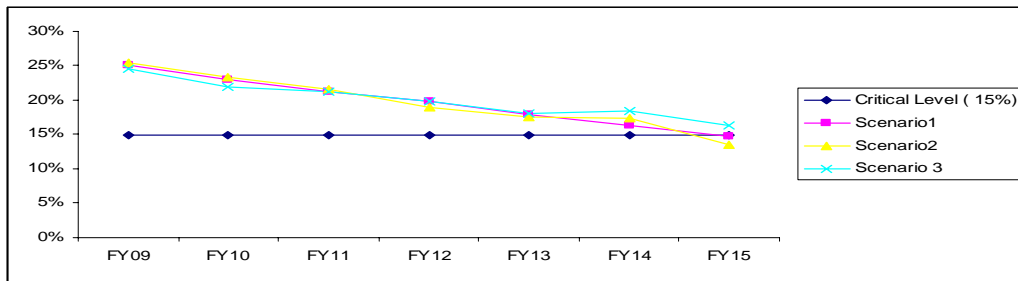


Figure 4.9 shows the public debt servicing to payment to government revenue. All the trends are declining and come to sustainable in 2015, means that government revenue are able to finance public debt serving payment.

Figure No. 4.10 Scenarios of Domestic Debt to Government Revenue

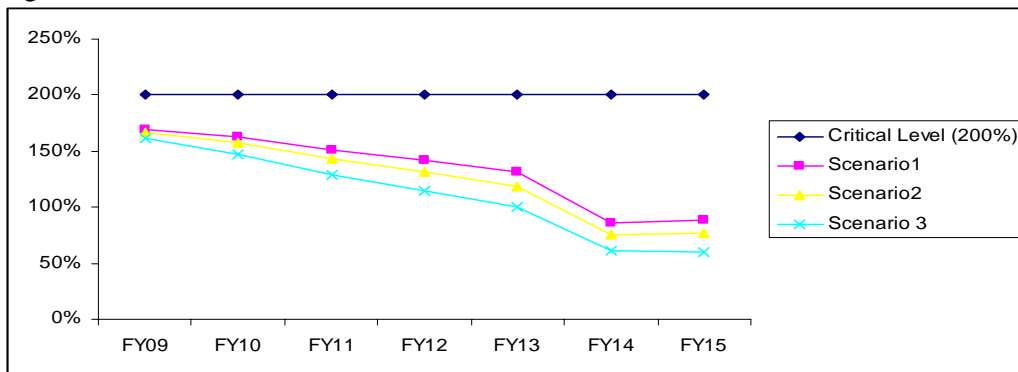


Figure 4.10 show domestic debt to government revenue. All the trends are below from the critical level, means that government can able to meet it domestic debt obligation through internal source.

4.5 Conclusion

This chapter first reviewed the public debt situation in Pakistan in current situation and find that the debt is unsustainable, and debt model argue that there is need to coordinate the monetary and fiscal policies and bring budget deficit under control and balance of payment position and improve the export, so as to reduce the debt burden. Thus it is important to analyze public debt of Pakistan in medium terms perspective under assumptions of the macroeconomic indicators. Hence the assessment was carried on the three different scenarios and projection is made until 2015.

Chapter V

Policy Recommendation and Concluding Remarks

5.1 Conclusion

In accordance with to our research question, “Whether Pakistan’s Public debt will be sustainable over time”, for this both the current situation and medium term projection are followed.

Pakistan is one of the developing countries, whose debt obligations are found unsustainable in current situation, due to numerous economic and social problems. Though Public debt/GDP ratio has declining trend, but still higher than 50 percent. Fiscal deficit/GDP ratio is higher by 3 percent of international slandered. The average ratio of domestic debt to government revenue is 259 percent higher than 200 percent of critical level. The external debt/export ratio shows sustainable level on average, but this is due to shifting debt financing from external to domestic sources and also of re-scheduling. Public debt to government revenue ratio total shows unfavourable situation. If in a country about 30 percent of revenues have been allocated to debt obligation, how can that country proceed to its development project? Moreover the models in section 4.2.2, argue that GDP growth should be higher for declining the trend in Public debt/GDP ratio, export growth should be higher than import growth and there is urgent need of fiscal and monetary management.

Hence in current situation the public debt indicators show that Pakistan’s public debt could be unsustainable. This situation guided me to investigate public debt sustainability of Pakistan in the future medium-term perspective and to make projection until 2015.

In medium-term perspective, we may argue, that strong fiscal and monetary adjustments are needed, so as to bring public debt at sustainable level.

According to scenario 1, under economic crisis in country, we found that primary revenue is in deficit, and most of the debt indicators are away from targeted level. In scenario 2 under moderate revenue, we found that primary revenue is in deficit till 2012 and fiscal deficit/GDP ratio is above from the critical level in the last three years. Also the public debt servicing to government revenue come to critical level in last year. But in scenario 3, under high revenue and high development, we found in economy in good condition, event generated fiscal surplus in the last two years. The only public debt payment to government revenue ratio is above from critical level. But this is also acceptable to 20 percent. Means that their is urgent need of enhancing growth and revenue, but in the same time to curtail the non-development expenditure.

Moreover in scenario, analysis we found that fiscal and monetary policies have strong impact on public debt burden. Therefore public debt management can not be isolated from macroeconomic variables management and appropriate fiscal and monetary policy aggregates, hence there is need to coordinate between the two policies.

5.1.1 Fiscal Policy Adjustment

Section (4.2.1.3) shows that in most of the years, fiscal deficit/GDP ratio is higher than the critical level of 3 percent. Average value of fiscal deficit/GDP ratio is 4.8 percent, hence need to reduce fiscal deficit, and means that, to reduce the gap between the government revenue and expenditure.

In scenario analysis we found that high growth and revenue are needed to level the fiscal deficit. Hence the government on one side intends to increase revenue, by

increasing the tax circle and expand tax base, bring new areas and sectors under the tax net, enhance revenue, and on the other side reduce expenditure, particularly non-developmental and administrative expenditure and increase development expenditure growth oriented, so as to reduce the fiscal deficit. Then government can overcome on fiscal deficit and be able to generate fiscal surplus, so as the debt profile will recover over time. Moreover the government should stress on the long-term fiscal implication of debt and fiscal decision. Fiscal policy should be adjusted to attain objectives such as self reliance, increase of exports, control of import of luxury and non-essential goods, promotion of investment and reduction in income disparity.

5.1.2 Monetary Policy Adjustment

For achieving sustainable public debt, not only fiscal policy is sufficient, but also there is need to adjust the monetary policy. To achieve the objective of sustainable public debt, there is need to coordinate between the two policies. Expansionary fiscal policy is needed to get the economy back on its feet, monetary policy should continue to maintain economic and financial stability to support economic growth, which is essential part of debt obligation. In current situation it seems to be that there is no coordination between them. The Central Bank has been unable in maintaining price stability, as occurred as the result of excessive liquidity in the market. Hence there is need to control it.

The Government of Pakistan issued Euro and US dollar bond. The current government should restore health of these, so as not became a part of debt crisis in future.

5.1.3 Economic Growth:

From theoretical framework (section 2.5.3) debt is sustainable, if economic growth can take place. Hence high level of GDP growth rate means, achieving affordable level of debt services obligation. Public debt/ GDP are sustainable, depend on the primary balance should be balance in long run. If it is continuously in deficit, it means that the government is not able to control its spending or raise its revenue, to finance its expenditure, so that no money is left to repay its debt. Secondly, real growth rate of GDP should be greater than real interest rate, but in our case the table 4.7 shows that primary balance is in deficit in most of the years, and real growth rate are less than real interest rate from 1997-98 to 2001-02 . Furthermore section (4.2.1.2) shows that GDP/debt ratio is higher than 50 percent. Logically, government should make necessarily, essential and unavoidable *action & policy* to increase growth as much as possible to lower the numerator (debt) and increasing the denominator (GDP). So when the economy gets back on track and government revenues increase, the government has money, not only to repay the debt, but also for development process to achieve higher growth.

5.1.4 General Recommendation

- The Debt Policy Coordination Office (DPCO), argues that the main factors, which built the public debt of Pakistan, are the real cost of borrowing and stagnant government revenue, from the last two decades. Moreover the real cost of borrowing for domestic or internal debt and external debt is measured differently, i.e. internal debt is measured in rupees where as external debt is measured in US\$. Due to this different type of measurement the real cost of borrowing for both sources has varied considerably over the time. Hence there is needed to take necessary measures by the government to overcome this problem.
- There is need to avoid fiscal deficit. Higher deficit should be targeted to finance higher public sector development program (PSDP), particularly infrastructure projects. Pakistan needs to strengthen its physical and human infrastructure to sustain growth momentum.
- There is need to pursue Fiscal and Monetary Policy management promote of GDP growth along with decline in public debt in absolute term.
- If the government has to maintain an expansionary monetary attitude, it should seek to promote more investment and more pro-poor spending. The proportion of development expenditure should be higher in overall expenditure.
- There is need for Pakistan to measure and to pursue vigorous macroeconomic policies to contain public debt, including domestic and foreign.
- In section 2.9, review literature by Eatjaz Ahmad (1999), suggested that sustainability of Public debt by sale of government enterprises (privatization), can reduce the size of external debt as well as internal borrowing and debt. The government should not to sale them, but enhance their productivity in export oriented base.
- Hafiz A. Pasha and A.F. Aisha Ghaus(1997), have suggested that increase in exports, increase in taxes, reduction in bond rate, reduction in lending rate and devaluation of the currency appear to be very significant in reducing foreign borrowing and bringing the external debt to sustainable levels. Hence there is needed to diversify the export base, along with reduction in import in luxury commodities.

In short or in brief, there is need for Pakistan to measure and to pursue vigorous macroeconomic policies to curtail public debt. Policies promoting GDP growth along with decline in public debt in must be pursued.

Liking with research topic “Sustainable Public debt leads to Sustainable Economic Growth”, hence a country having no overcome on debt obligation how can proceed development project? So sustainable public debt is necessary for sustainable economic growth.

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