

**“AN ANALYSIS OF PUBLIC DEBT, ITS
SHARIAH ALTERNATIVES AND OTHER
AVENUES FOR RESOURCE MOBILIZATION
FOR GOVERNMENT”**



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CERTIFICATE

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Author's Declaration

I MUHAMMAD NAOMAN KHAN hereby state that my MPhil thesis titled "AN ANALYSIS OF PUBLIC DEBT, ITS SHARIAH ALTERNATIVES AND OTHER AVENUES FOR RESOURCE MOBILIZATION FOR GOVERNMENT" is my own work and has not been submitted previously by me for taking any degree from Pakistan Institute of Development Economics or anywhere else in the country/world.

At any time if my statement is found to be incorrect even after my Graduation the university has the right to withdraw my MPhil degree.

Date: 20 - 4 - 2023

Muhammad Naoman Khan
Muhammad Naoman Khan

*This dissertation is dedicated to My
Parents, who instilled in me the virtues of
perseverance and commitment and
relentlessly encouraged me to strive for
excellence.*

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In the name of Allah, the most gracious and the most merciful, whose mercy enables me to accomplish the tasks with success. Blessings of Allah be on Holy Prophet Muhammad (Peace Be Upon Him) whose teachings have served us as beam of light in the hours of despair and darkness and has given us the new vision of life.

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ABSTRACT

Pakistan is declared one of the highly indebted countries. This study is meant to review public debt situation in Pakistan. We have analyzed composition of public debt and change in composition over time. Next we studied impact of public debt on the economic growth. We have incorporated both GDP and GNP in this study as dependent variables. There is sound reason to include GNP. In Pakistan, amount of foreign remittances is significantly high making the effect on GNP important. On the other hand, various multinational companies (MNCs) are working in Pakistan emphasizing again the importance of including GNP in the study. Effect of domestic debt, external debt, debt servicing, inflation and openness of economy is studied for both GDP and GNP using appropriate econometrics techniques. It is found that variables are mixture of $I(1)$ and $I(0)$. So ARDL is used after confirming long run relation by using Bound test. Results show that debt accumulation is having negative impact on both GNP and GDP over long run in Pakistan. Presence of debt overhang effect is confirmed for both GDP and GNP in Pakistan.

After analyzing results, we may suggest some Islamic/Shariah alternatives for public debt. These alternatives can be categorized on the basis of different modes such as Leasing, Musharakah, Mudarabah, Trade or a combination of two or more modes. Each category may further have different types of modes of finance which result in developing interest free debt alternative instruments. These alternatives may reduce the burden of public debt in the future. Shariah alternative can prove a source for stability of the economy as well as a tool to reduce inflation rate.

Our final task is to suggest some other avenues to finance the government expenditure. Avenues other than public debt will cause to reduce the debt servicing burden in the future releasing resources for the development projects. These avenues include projects by Islamic banks, Investment funds, Public Sector Enterprises (PSEs), Local governments' surplus budgets and finally mines and minerals. Each mode is discussed in depth especially mines and minerals. Pakistan has 92 different types of minerals. Three minerals i.e., Petroleum, Gas and Uranium are owned and managed by Federal government. Other minerals are managed by the province of extraction of minerals. Reforms in this sector can significantly reduce reliance on public debt to finance the government expenditures.

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LIST OF ABBREVIATIONS

AAOIFI	Accounting and Auditing Organization for Islamic Financial Institutions
AIB	Assets Ijarah Bonds
AIS-GOV	Asset Ijarah Securities-Issued by Government Itself-for a Third Party Acquiring an Asset and Leasing the Same to Government
AIS-IFI	Asset Ijarah Securities Involving a Financial Intermediary
AIS-SIM	Simple Asset Ijarah Securities
CDA	Capital development Authority
CIE	Commission for Islamization of Economy
CII	Council of Islamic Ideology
CMC	Central Bank Musharkah Certificate
DCA	Department of Civil Aviation
DFC	Deferred Price Certificates
FIC	Financial Ijarah certificates
FRDL	Fiscal Responsibility and Debt Limitation Act
GMC	General Musharkah Certificates
GMC	Government Mudarbah Certificate
HSBC	Hong Kong & Shanghai Banking Corporation
IC	Istisna certificates
IIIE	International Institute of Islamic Economy
LBMS	Leasing Based Mudarbah Sukuk
LIC	Leveraged Ijarah Certificates
MCC	Musharkah Convertible Certificates
MEC	Musharkah Exchangeable Certificates
MSPO	Musharkah Sukuk with Put Option

NAV	Net Asset Value
NHA	National Highway Authority
OIC	Operating Ijarah Certificates
PB	Participation Bonds
PISCL	Pakistan International Sukuk Company Ltd
PMDC	Pakistan Mineral Development Corporation
PSE	public sector enterprises,
RMC	Decreasing-Partnership or Redeemable Musharkah Certificates
RSC	rent- sharing certificates
SC	Salam Certificates
SEMW	Salam Embedded Musharkah Warrants
SMC-EPSU	Special Musharkah certificates against Existing Public Sector Undertakings
TADB	Tender Assisted Drilling Barge
TIW-BLT	Transferable Ijarah Warrants with a Build-Lease-Transfer Arrangement
TIW-FLT	Transferable Ijarah Warrants with a Finance-Lease-Transfer Arrangement
TMA	Tehsil Municipal Administration
WAPDA	Water and Power Development Authority

CHAPTER 1

INTRODUCTION

Government can finance its budget expenditures from different sources such as tax, non-tax income, mineral resources, printing high powered money or from public debt. Out of these sources, public debt has become a challenge for developing countries. Pakistan has been declared as one of the highly indebted countries by World Bank. Public debt has increased twelve times during previous twenty years in Pakistan. It stood at Rs 3172 billion in year 2000, Rs 3,636 billion in year 2002, Rs 35207 in year 2020 and Rs 44,366 by the end March 2022.

Gross Public Debt / GDP increased from 63% in 2015 to 86% in 2019 and 71.5% in 2022. Whereas Debt Service to Revenue ratio has increased from 44% in 2015 to 62% in 2019 and to 85% in 2021, after which it reduced to 65% in 2022. Debt servicing has become the largest item in the expenditure side of the government budget. We need to take measures to reduce debt servicing burden in the near future.

Public debt consists of both Domestic and External debt. Domestic debt is collected in form of domestic currency and consists of Permanent, Floating and Unfunded debt. External debt is payable in currencies other than the local currency. It may also be paid in terms of goods and services or in other words as a barter exchange. It consists of long term and short term debt. Long term debt consists of public debt, publically guaranteed debt and private non guaranteed debt. Short term debt consists of commercial debt and debt obtained by IMF.

Debt has justification for both positive and negative effects. As long as positive effects are concerned, the justification to accumulate public debt especially in poor

countries is presented as, “local financial markets get developed, state gets finance during the time of external shocks, and Foreign Exchange risk is decreases due to the public debt.” (Del, 2003; Aizenman, 2004; Kumhof, 2005). Risky private investment is enhanced due to domestic debt. The reason is that when government gets loans from commercial banks at high interest rate, banks get fixed and sure return and can start risky investment as they already had good return from government. (Barajas 1999; 2000). Macroeconomic variables become stable due to External Debt obtained for productive investment (Burnside, 2000), shortage of capital inflow is covered by external, which can in fact compliment domestic savings. Savings can thus enhance investment and as a consequence, it can enhance the economic growth. (Eaton, 1993). But how can these positive effects be justified in case of Pakistan where both domestic and external debt have been accumulated to a very high level. Debt servicing of public debt is having negative effect on investment and economic growth. We must take care of negative effects of public debt servicing too.

As long as negative effects of public debt are concerned, most prominent negative effect is “debt overhang” effect. According to debt overhang effect, with a sharp increase in public debt, a country may find it difficult to pay installments and interest on public debt. Debt servicing may become much more as compared to the ability of a country to spare resources out of budget revenue. In this case taxes may increase to an enormous amount. It will decrease consumption and investment. According to Keynesian economics, multiplier effect will depress the economy resulting in slower or even negative economic growth. It further decreases the country’s ability of debt servicing and ultimately results in default on the part of the borrowing country.

Another negative effect of Public Debt is just opposite of crowding in effect on domestic investment explained in previous paragraphs. This is crowding out effect on domestic investment. When government borrows from public, then less funds are left for private investors as is explained in loanable funds theory. It causes less capital accumulation and thus lower economic growth rate. This simply means less welfare (Diamond, 1965).

Debt servicing cost in the form of crowding out effect on investment has its multiplier effect in the form of indirectly reducing private expenditures. (Karagol, 2002; Diaz-Alejandro, 1981).

We have discussed both crowding in and crowding out effect of public debt on investment. We have empirical studies in this regards, where some authors (Pattillo 2002, 2004) don't accept or reject the hypothesis of crowding out effect of debt on investment. While some other authors like (i.e. Elbadawi, 1997, Clements, 2003, Chowdhury, 2004) don't reject the hypothesis of crowding out effect and confirm the reduction in investment and economic growth due to increased public debt and consequently increased debt servicing.

According to some authors, concessionary external debt (like package deal from IMF) is less expensive as compared to the domestic debt bearing high interest rate and so are beneficial for the economy (Burguet , 1998).

Another point of view is that Domestic debt servicing leave less tax revenue in the hands of the government, which otherwise could have been used for development projects or for anti-poverty project. High interest rate on domestic debt improves income statement and protects the balance sheet of commercial banks and they need

not to invest in risky project, thus reducing the level of real investment in the economy (Hauner, 2006).

1.1 Repayment of public debt

Repayment of public debt or debt servicing is made out of the government revenues. Government revenues consist of taxes, borrowing from market or printing high powered money (borrowing from state bank). Government expenditures consist of current expenditures, capital expenditures and debt servicing. Now it is clear that all the components of government budget cannot be exogenous at the same time. At least one component should be endogenous. The normal practice in the past has been to keep development expenditures as endogenous. It means in simple words a cut on development projects. This step of reduction in development expenditures decreases the economic development and thus the economic growth.

1.2 Public Debt of Pakistan

Pakistan was established in 1947 and we had to develop the country with very low National Capital. Formation of National Capital required National Savings, which were already not enough. With low saving rate, it was not possible to enhance investment without domestic and/or external borrowing. In the early years, external debt was more than domestic debt. External debt was basically needed due to unfavorable terms of trade. External debt has been obtained from Asian Development bank, World Bank, IMF and some other countries. But now domestic debt is more than the external debt. Domestic debt each year is acquired basically for debt servicing and to roll over the debt to the next year.

In this study, we are using data after the year 1972. Data before 1971 is useless for our analysis due to Dhaka fall in 1971. In 1972, our internal debt was Rs 7.62 billion and our external debt was Rs. 39.86 billion amounting to total public debt of Rs 47.48 billion. In 1990, our internal debt was Rs 374 billion and our external debt was Rs. 428 billion amounting to total public debt of Rs 801 billion.

From the data, we realize that during early years, Pakistan relied more on external debt as compared to internal debt. Over first four decades, country gradually increased share of domestic debt in the total debt.

In FY13, Pakistan accounted for approximately Rs. 15,531 billion and it was 67.8% of GDP. Our internal debt was Rs 9833 billion and our external debt was Rs. 5698 billion amounting to total public debt of Rs 47.48. Short term domestic debt payable within one year was 36% of the public debt.

End June 2021 data shows total public debt of Rs 36,399 billion. Out of which, our internal debt was Rs 23283 billion and our external debt was Rs. 13601 billion.

In term of ratios with GDP, domestic debt was 47.1% and external debt was 24.4%, total debt was 71.5% of GDP. End March 2022 data shows total public debt of Rs 44,366 billion. Out of which, Domestic debt is Rs 28,076 billion and external debt is Rs 16,290 billion.

According to 2016 amendment in the Fiscal Responsibility and Debt Limitation Act (FRDL) 2005, government should not cross certain a limit for public debt to GDP ratio. Public Debt to GDP ratio should not be above 60% in 2018 and it should be reduced 0.75% in each consecutive year until it becomes 50% in 2033. But the situation is quite different. Public debt to GDP ratio was 71.5 at the end June 2021. It

makes management of economy quite difficult by limiting the scope of demand side policies like Fiscal and Monetary policies.

1.3 Shariah Perspective

Federal government gets loans from financial institutions, foreign governments and general public all on interest basis. Loans disbursed by Federal government to the provincial governments are also interest based. This type of financial system has been adopted by all governments whether conventional or Islamic. Quantity of the debt borrowed and its components differ from country to country. In Pakistan, Domestic debt has gained a larger proportion as compared to external debt. Further we observe that out of all components, “Pakistan Investment Bonds” form the largest component of domestic debt. Large amount of interest is paid on all instruments of public debt including PIBs. Debt servicing has become largest component of the government budget expenditures.

The efforts to eliminate interest from all of financial transactions, at the global level, started in the mid of previous century but interest elimination remained mostly an idea for two decades. It was as late as 1970’s that some interest free Islamic banks were established. These Islamic financial institutions have most of their financial transactions in interest free form but up to now no practical step has been taken to finance public debt in an interest-free way by any of the Muslim countries.

So far the Pakistan economy is concerned, financial transaction were run in a conventional, non-Islamic framework up to 1980. On 29th September, 1977 the late President of Pakistan, General Muhammad Zia-ul-Haq took first step towards Islamization of financial institution. He assigned the task of preparing a draft of interest free financial system to the Council of Islamic Ideology (CII). A time limit of

three years was set on 12th Rabi-ul-Awal, 1399. Interest from all financial transactions of the economy was assumed to be eliminated within these three years. Government decided to take action on the recommendations of Council of Islamic Ideology and as an initial step introduced a system of Zakah and Usher. As a result, the government took concrete action on the Council's report on the introduction of Zakah and Usher.

The Council of Islamic Ideology recommended a plan of three phases for converting conventional interest based financial institutions to interest free financial institutions. For the elimination of interest from all domestic financial transactions, CII set clearly defined time schedules for each of the three phases. These three phases were assumed to start from 1st July, 1980, 1st July, 1981, and 1st January, 1982, respectively.

For the purpose of this study, we may use Islamic modes of finance offered in CII report for eliminating interest rate from public debt. Muslim Commercial bank (MCB) organized a seminar in 1981 to review the situation about Islamization of economy. Some of the Islamic modes of finance presented in CII report were questioned in 1981 seminar for their Shariah compatibility and hence further suggestions were given.

In 1992, Commission for Islamization of Economy (CIE) revised these modes and pointed out some shortcoming in report along with some proposals for improvement. In 1999, International Institute of Islamic Economy (IIIE) criticized both CII and CIE reports and offered some further suggestions. In other words, Sharia'h compatibility of these modes has always been facing observations of some or other scholars. Anyhow, these types of reports provided a direction to review Sharia'h position on these modes.

In this study our second objective will be to find Shariah compatible modes to finance the debt instruments of public debt.

1.4 Problem Statement

1- Pakistan seems to be facing “Debt Trap Problem.” Largest expense in Federal budget is debt servicing. It leaves only about half of the resources for all development and non-development expenditures. Less expenditure on public sector means less development as well as less aggregate demand resulting in less tax revenue and so further entrapping in the debt problem.

2- Debt accumulation can be avoided with the help of Shariah compatible alternatives for debt instruments (logic described in detail in section 3.4). Moreover, Interest (Riba) is prohibited in Islam but public debt is based in interest payment. This study is meant to suggest different solutions for this problem. This would require offering alternatives from two perspectives. First one is alternatives for the government to finance its budget. Second one is alternatives for the savers to earn interest free profit instead of Interest based payment.

3- In Pakistan, government is relying heavily on tax payment and public debt to finance its budget expenditures. Pakistan should search for some other avenues for resource mobilization for government budget.

1.5 Objectives of the Study

This study is directed to achieve the following objectives:

1- This study will analyze public debt situation in Pakistan along with impact of public debt on macroeconomic variables. Identify the reasons to rely heavily on

Public Debt during previous half century. How structure of public debt changed along with the macroeconomics variables. This also includes finding out benefits of public debt to government, lenders and general public.

2- Selection of modes of financial transactions compatible with Shariah and helpful in making the public debt free of the elements prohibited in Islam. Our search for Shariah compatible alternatives of public debt has two perspectives as has been mentioned in problem statement. In this study more emphasis is given to the first perspective because very less work has been done so far to finance government budget in Shariah compatible way. Most of the contemporary research on Islamic financial system is related with the everyday business matters of the society. Although some scholarly work is available for financing the government expenditure but still further research is required. We are trying to bridge the gap.

3- We will describe some avenues other than taxes and public debt for resource mobilization for federal government. These avenues will decrease government's reliance on public debt.

1.6 Significance of the Study

This study is meant basically to study and analyze public debt in depth. We will analyze impact of public debt on macroeconomic variables and then we will suggest methods to eliminate interest from public debt in order to make them Shariah compatible. This effort will have its significance in term of macroeconomic policies. It will have monetary benefits in the form of reducing government's debt servicing burden. This will release resources for other development projects as well as non

development projects such as health, education, social security etc. As a result growth rate will improve and it would be rather easier to gain economic objectives.

Converting Interest based public debt instruments into interest free alternatives may have its positive effects in many other aspects too. Such as better allocation of government revenues and better income distribution which may prove a measure for income equality. Monetary policy may change with profit based alternatives, while fiscal policy too will have significant changes with respect to its main instruments of taxes and government expenditures. With reduced debt, government would have to allocate fewer resources for debt service leaving much of the resources available for other projects such as health, education, social security etc.

CHAPTER 2

LITERATURE REVIEW

Review of the Literature can be written in two parts. In first part we can discuss literature on the analysis of public debt. We will basically analyze and discuss the impact of public debt on macroeconomics variables. In second part we can discuss Shariah alternatives for the public debt.

We can find a number of research papers on impact of external debt on macroeconomic variables including economic growth. Various authors have already conducted some research on comparing effect of public debt on macroeconomic variables. This category of research papers is available for different countries. Most of the authors conducted this type of research for their respective country. Let us first discuss the literature review for affect of external and domestic debt on economic growth.

2.1 Literature Review for Public Debt Analysis

Mahmood and Rauf (2008) have discussed a complete profile of public debt for three decades. They conducted their research with respect to the monetary and fiscal policy of the government in the respective year. They discussed data for more than three decades after 1971. Changes are discussed in two ways in this research. Firstly, changes in relative shares of external and domestic debt. Secondly changes within the different components of the domestic debt. It is shown that ratios went on changing with respect to the supply and demand (monetary and fiscal) side polices of the respective governments. They have taken care of the rebasing of the data in year

2000. Due to change in the base year, there seems to be structural break in the data. After adjusting all of the data to the same base year, anomaly has been removed. They discussed about the more reliance on the short term debt in domestic debt. While external debt went on increasing with time and this external sector imbalances were responsible for rise in public debt. Similarly debt services increased, besides all the reforms taken to slow down rapid increase in stock of public debt. Rescheduling and restructuring of external debt during first half of 2000s brought some relief but caused high debt services during second half of 2000s.

Tahir and Tahir (2012) have discussed the debt situation in Pakistan and possible results of eighteenth amendment which allows provinces to borrow domestically and externally. Eighteenth amendment along with seventh NFC gives greater autonomy to the provinces. Authors have shown that continuous primary and secondary deficit of federal budget is making the existing public debt unsustainable. By giving provinces power to have debt will worsen the situation. Monetary policy will become unmanageable and SBP will face problems in controlling inflation and adjusting interest rate. Countries like Argentina and Brazil have already faced such problems after allowing for sub-national debt in their countries. Researchers have used Cecchetti, et al. (2010) methodology for regression analysis. They have regressed public debt on primary deficit and structural deficit. Both regressands are indicators of fiscal stance at federal level. Time period was 1976-2011. Their conclusion was that government kept on using expansionary fiscal policy year by year. Then they used methodology of Liu, et al. (2009) to investigate sustainability of provincial debt by separating effect of inflation and growth. Their findings from the data analysis are that provinces have not shown fiscal responsibilities in the past and in absence of such

responsibilities, provinces may be denied to get loan independently, domestically or internationally.

Jibran, Iqbal, et al (2016) studies impact of external and domestic debt on GDP and GNP. Their study is distinguished from other in the sense that they included GNP along with GDP while previous studies discussed only GDP as dependent variable. They used bound test based ARDL model and included inflation and openness of economy too in the model covering period from 1972 to 2012. Their finding is that domestic debt does not impart any significant effect on GDP as well as GNP in both short run and long run. External debt imparts significant negative effect on both GNP and GDP. Same was true for inflation, which is insignificant for both GDP and GNP. Debt servicing is significant in short run and has negative effect for both GDP and GNP. Constant is significant for both GNP and GDP in long as well as short run depicting the effect of other variables. ECM has negative sign and is significant as is expected for short run adjustment towards equilibrium. They suggested to improve tax culture in Pakistan instead of accumulating debt to finance government expenditures.

Akram (2011) has studied impact of public debt on economic growth. He included investment as control variable. He tried to find out implications of both “debt overhang” and “crowding out” hypothesis. Phenomenon of debt overhang effect emerges when excessive debt results in high debt servicing cost with interest rates which depress investment and thus economic growth. Crowding out effect of public debt results when due to greater debt servicing, very little amount is left for investment and so public debt causes the investment to slow down. Author has used separate model to check for both the hypotheses. His findings are that external debt causes the economic growth to slow down proving debt overhang effect, while

domestic debt has no significant effect on economic growth. As long as crowding out effect is concerned, it is revealed that domestic debt actually crowd out the investment. The reason probably is that due to domestic debt, commercial bank gets a chance to earn high yield on government securities and have less attraction in borrowing for real investment.

Akram (2016) repeated his previous investigation of Pakistan economy for Philippines' economy. Results were same to the extent that debt overhang effect of external debt as well as crowing out of investment due to domestic debt was observed for Philippines' economy too. However in this case domestic debt was positively related with economic growth.

Ali and Mustafa (2012) have discussed impact of external debt on economic growth along with some control variables for the period 1970 to 2010. They included human capital and external debt in the production function along with capital stock and labor force. In the long run human capital and capital stock have positive relation with economic growth as expected. Labor force has negative relation which is probably due to large unskilled labor and disguised unemployment in agriculture sector. External debt is negatively related with economic growth both in short and long run. ECM is negative and significant. Sign of ECM confirms stability of the negative effect of external debt on economic growth.

Anwar(2000) has discussed the debt trap prediction for Pakistan during early 1990s and then actually falling in debt trap during late 1990s. He has shown worst indicators of debt situation in Pakistan as compared to neighboring countries of India, Bangladesh and Srilanka. This working paper discussed the possible causes of debt trap and possible remedies for it.

Public debt remained an issue even during 1980s. Burney (1988) has examined various debt indicators and ratios during the period 1959 to 1987. He discussed different determinants of debt ratios and then pointed out low debt servicing capacity. According to him terms of borrowing and GDP growth do not have any significant effect on debt ratios. He concluded that debt servicing capacity can be enhanced by increasing marginal saving rate in the economy.

Hasan, et al. (1999) discussed the indicators which are used for debt situation in historical evolution as well as international scenario. According to them public debt management is an art which if properly used, can enhance economic growth and can prove beneficial for the country. Then they discussed about trends in domestic burden along with the rising public debt problem and factors behind this problem. They discussed consequences of the rising public debt overhang and suggested for better macroeconomic management, enhancing exports and reducing current account expenditures.

Kemal (2001) has discussed how debt accumulation causes low economic growth and high level of poverty. Debt crises demands for high taxes, which may result in low investment, high unemployment and more poverty. Author has discussed the logic too behind gaining debt. Debt particularly the external debt has the same effect in short run as high exports or high savings have. So investment increases which increases economic growth and decreased unemployment and poverty. Due to economic growth, country's savings increase and it becomes possible to return back the debt. According to author, Pakistan could not get benefits of external debt due to corruption, capital flight, donor's agenda and impact of debt on domestic savings in the form of lower level of domestic savings. A number of steps are required to handle

the situation of debt crises. These include debt rescheduling or even debt forgiving, Policy reforms in Pakistan economy, increased investment by increasing capital formation from domestic resources and increasing openness of economy.

Chandia , et al. (2019) have presented an assessment of public and external debt sustainability for India and Pakistan. They have used debt dynamic equation approach for the period 1971 to 2017. They concluded that factors involved in high public and external debt of India and Pakistan consists of growth rate of GDP, interest rate, primary budget deficit and reserve money supply.

Maana, Owino, and Mutai (2008) studied relationship between domestic debt and GDP in Kenya. Time period was from 1996 to 2007. They used using Modified Barro Growth Regression. Their findings were that domestic debt is insignificant (though positive) determinant of economic growth. Debt accumulation had no impact on Kenya's Economy.

Safdari and Mehrizi (2011) studied impact of external debt on economic growth for Iran. They used VAR model and their findings are that external debt significantly and negatively affect the economic growth. Their additional finding were that private investment is negatively affected by external debt and imports.

Shah and Pervin (2012) studied impact of external debt on economic growth of Bangladesh. They investigated for the period 1974 to 2010. By using cointegration technique, their findings were that economic growth of GDP growth is positively affected by external debt and same is negatively affected by debt servicing.

Atique and Malik (2012) studied impact of external debt on economic growth of Pakistan. They investigated for the period 1980 to 2010. They used cointegration technique and their findings were that both domestic debt and external debt

significantly and negatively affect the economic growth (GDP) of Pakistan. Further, they discovered that effect of external debt was stronger as compared to effect of domestic debt on GDP of Pakistan.

Egbetunde (2012) studied impact of total public debt on GDP in Nigeria. He used cointegration technique and investigated for the period 1970 to 2010. His findings were that total public debt significantly and positively affect the economic growth. Further, he discovered bidirectional Granger causality between economic growth and public debt. He suggested to increase reliance on domestic debt instead of external debt so that repayment in future is easy. He recommended using debt for development projects so that economy may achieve a high growth rate.

Azam, Emirullah, Khan, and Prabharker (2013) studied impact of external debt on economic growth of Indonesia during 1980 to 2012. By using cointegration technique, their findings were that external debt and inflation have negative impact on economic growth. Exports, savings and infrastructure were positively related with growth of the economy. They suggested for an effective debt management policy, which may enhance economic growth.

Afonso and Jalles (2013) conducted a research on European countries for impact of public debt on economic growth. They used pooled data in their research. Time was 42 years (1970-2012) and space was 14 countries. They used random effect and fixed effect analysis. Findings of their research were that public debt as well as debt servicing have negative and significant effect on economic growth.

Zouhaier and Fatma (2014) too studied impact of public debt using panel data. They selected 19 countries, all from developing economies. They used data covering a period from 1990 to 2011. Along with variables under study (Total, External,

Domestic Debt), they used some other independent variables such as Inflation, Investment and openness of Economy etc. They used Panel GMM as econometrics tool for estimation. They came up with the results that external debt has negative and significant effect on economic growth of 19 selected countries. Same were the results for debt to GNI ratio. However openness of economy was having positive and significant effect on the economic growth of the 19 selected countries.

Bal and Rath (2014) studied impact of public debt on economic growth of India. Data set covered period from 1980 to 2011. They used ARDL model as econometrics technique. Public debt had long run significant and negative relation with economic growth. Similarly, by using ECM model, it was confirmed that negative and significant short run relation exists between public debt and economic growth of India and same was true for debt servicing too.

Korkmaz (2015) conducted a research to study impact of external debt on economic growth of Turkey. He used data consisting of 48 observations. It was quarterly data for 12 years (2003-2014). His econometrics tools were consisting of VAR, Johansen Cointegration and Granger causality tests. His findings of the research were in contrary to most of the previous studies conducted on developing countries. He found positive and significant relationship between external debt and economic growth. Same was the case of debt servicing when used as independent variable. He used Granger causality test for his data and discovered unidirectional causality from external debt to economic growth.

Zafar, Sabri, Ilyas, and Kousar (2015) conducted a research to find relationship between economic growth, external debt and openness of economy. Some other variables such as FDI and Government expenditure, Government savings were used

as independent variables. Countries were selected from Middle East, East Asia and South Asia. Panel Data set covered period from 1980 to 2012. They used fixed and random effect model in their analysis. Their findings were that external debt has significantly and negatively related with economic growth. They suggested for proper debt management policies to reduce the external debt burden. They further discovered that openness of economy was positively and significantly effecting the economic growth. They suggested for reducing tariff barriers so that enhanced international trade may result, which can further enhance the economic growth.

Serrao~ (2016) conducted a similar study for developed countries. He used data set for 64 years (1946-2009). Penal data techniques wer used by him. His findings were that public debt is negatively and significantly related with real economic growth. The results were almost similar to most of the studies presented above. His recommendations consist of reforms in debt management policies so that future burden of debt as well as debt services may be reduced.

Fatai (2016) conducted a research on Nigeria economy to study relationship between economic growth, external debt and debt servicing. He used yearly time series data of 45 observations (1970-2014). Results of his analysis were somewhat different from previous studies. Although according to his results external debt was negatively and significantly related with economic growth just like most of previous studies. But debt services was found to be positively and significantly related with economic growth which is in contrary to all previous studies. He found bidirectional Granger causality between external debt and economic growth . Same bidirectional causality was found between debt services and economic growth. He found unidirectional Granger causality from external debt to debt servicing. His results are stringent and contrary to

previous studies. Probably a close scrutiny of data set is required to find out the reasons for the difference and only the results of the research can be justified.

Khemais, Mohamed, and Nesrine (2016) conducted a research on Tunisia economy. Dependent variable was GDP or economic growth. A list of variables was included as independent variables. List consists of external debt, Debt servicing, Investment, Schooling, Openness of economy, money supply (M2), and rules and law. They used data set consisting of 51 years (1961-2011). They used Unrestricted Cointegration rank test, Pulse analysis and Granger causality test in their estimation. Results of their research proved that economic growth is negatively and significantly affected by both external debt and debt servicing. Same was the case of openness of economy and money supply. However investment and schooling were found to positively and significantly affect the economy.

Akram (2016) conducted an interesting and different research about effects of public debt. He used two models. In first model GDP or economic growth was taken as dependent variable just like other contemporary studies. In second model, he used GINI coefficient as independent variable in order to study impact of independent variables on poverty. List of independent variables consists of external debt, domestic debt, debt servicing, Inflation, openness of economy, investment and urbanization. Research was conducted for four countries i.e., Pakistan, India, Bangladesh and Sri Lanka. Time series data of 36 years (1975-2010) was used. He used 2SLS , GMM and Fixed Effect Model for his analysis. According to the results of first model, economic growth was negatively affected by external debt but positively affected by domestic debt, investment, urbanization and openness of economy. Economic growth was found to have no or insignificant relation with debt servicing or inflation. In the

second model poverty or GINI coefficient was found to be negatively related with GDP per capita and domestic debt, but positively related with urbanization and openness of economy. GINI coefficient had no or insignificant relation with dependent variables of external debt and debt servicing.

2.2 Literature Review for Shariah Alternatives of Public Debt

In Islamic Shariah, we may find various financial instruments. Each instrument may have its distinctive features and utilization. These features are determined by the different conditions and rulings conditions deduced from the Holy Quran, Hadith, Qiyas and general consensus of Shariah scholars. CII report (1981), SBP circular (1984), Fahmy and Sarkar (1997), and IIIIE report (1999) have described some of these instruments. Here let us first have a brief survey of Shariah modes of finance and then we will see how these modes can be converted to financial instruments, which can fulfill requirements of the modern financial system.

2.2.1 Islamic Financial Instruments

Without going into details, we can describe some of the Shariah compatible instruments as follows.

2.2.1.1 Musharkah:

This is a partnership mode in which two or more individuals or parties share capital in same or different ratios. The legitimacy of Musharkah from the point of view of Shariah is deduced from holy Quran from Hadith, and from Ijma of Shariah scholars. According to Shafi and Malikli schools, Profits from economic activity or projects

resulting from Musharkah contract are distributed among the partners according to the proportion of their share. The Hanafi and Hanbali schools have different approach. They allow differences in profit shares even when capital is equally shared by the partners or vice versa.

2.2.1.2 Diminishing Musharkah:

In this type of Musharkah contract two parties enter into a partnership (just like any normal Musharkah contract) and they jointly own an asset. Ownership of each party is further divided into smaller units. Asset may be utilized by only one (second) party, which may be obliged to pay rent to the other (first) party according to share in partnership. The difference starts from normal Musharkah contract when one of the parties (say first party) sells share of its ownership to the second party on each coming week/month/year. At the end of the contract, ownership is completely transferred from one (first) party to the other (second) party. The rental payment (by second party to first party) decreases with periodical purchase of units of ownership in the asset by the other (second) party.

2.2.1.3 Mudarbah:

This is a also a partnership type of business just like Musharkah. The basic difference is that one category of parties provides capital and other category of parties imparts its labor or expertise. Any accrued profit should be distributed among partners according to predetermined and declared percentage that was agreed upon between them. If the activity results in loss, then the first category of participants (who provided the capita) will be liable for it alone. The working partner will lose its effort. An exception lies here for the case of a loss in the business. The loss may be due to negligence of second category of participants (working partner). In this case only second category

of participants (working partner) will be liable to cover it.

2.2.1.4 Murabah: (Cost-plus or markup sales):

Literally, Murabah means to earn pre-decided profit on sale. Practically, Murabah is a sale in which merchant/dealer/trader/seller declares the actual cost and profit margin or markup on the product/commodity. The markup may be a fixed in two ways. It may either be a fixed amount of money or a certain percentage over the previous price. The Islamic Fiqh Academy has approved the Murabah sale by purchase orders. This type of sale is based on mutual promise of contract. Mutual promise is required to proceed for the actual Murabah sale contract.

2.2.1.5 Ijara (leasing):

Leasing may be defined as “Handing over a well specified property at a well specified price for a well specified time in order to use usufruct/services of the property.” The point to be noted is that it is not transfer of ownership of asset but of usufruct of asset. The leased usufruct may, however, be either of an asset in kind (e.g., an apartment), or of a human asset (e.g., labor). In order to prevent any type of Gharar (deception) in the contract, the leased asset and the usufruct should be known and well defined prior to the contract. The lease of usufruct may be defined in two ways. Lease may be either for a fixed time period or for the provision of service rendered to the lessee irrespective of the time incurred.

2.2.1.6 Salam (Prepaid contracts for agricultural products):

Salam is a sale contract which is usually used for agricultural products. Salam involves prompt payment of the price, which is called Capital-Salam. The price is paid on the spot while well defined product is delivered in the future.

2.2.1.7 Istisna (Manufacturing contracts):

Istisna is a sale contract which is usually used for industrial products. Istisna involves prompt payment of the price. The price is paid on the spot while well defined product is delivered in the future. According to Maliki, Shafi and Hanbali schools, Istisna is just like Salam and they therefore impose all the conditions and requirements of Salam on Istisna. However according to Hanafi school Istisna is related to manufacturing while Salam is related to agriculture and each one may have different set of conditions and requirements.

2.2.1.8 Joala:

Joala is a sale contract which is usually used for professional services or skills. Joala involves prompt payment of the price. The price is paid on the spot while well defined service/skill is provided in the future.

2.2.1.9 Muzara:

In Muzara, owner of a land hands over his land for a specified time to a party (usually a farmer) against a predefined ratio/percentage of the produce of the land. This contract is legitimate according to Hanbali and Hanafi schools. However, legitimacy of this contract is rejected by both Maliki and Shafi schools. Muzara differs from Mudarbah mode of finance because in the case of Mudarbah the 'labor' cannot share the 'revenue' with the 'capital owner' unless capital is completely refunded by the accumulated revenues. Only after refunding the capital out of revenues, labor can share profit with capital owner. While in the case of Muzara the subject matter of partnership is the output (revenue), not the profit. Therefore, agricultural output may be shared automatically between the two partners as soon as the activity ends regardless to whether the share of the land owner may cover the value of his capital

(e.g., land, seeds, fertilizers etc) or not.

All above mentioned modes of finance or instruments are actually building blocks for more complicated hybrid type of instruments, which may be devised to fulfill the needs of the modern industrial world and public sector requirements.

2.2.2 Classification of Islamic Financial Instruments

Different Economists have grouped Islamic financial instruments on different basis. These groups or categories are made (1) on the basis of profit sharing, (2) on the basis of fixed return (on cost of capital), (3) instruments having their origin from trade, (4) instruments involving direct investment etc.

2.2.2.1 Council of Islamic Ideology (CII) Report (1980)

CII was established under the second constitution of Pakistan in 1962. This council presented its recommendations on 25th June 1980. Council recommended Investment type modes like Mudarbah and Musharkah has fundamental instruments for interest free banking. But recommended to use trade and lease based instruments too where needed. Council recognized that interest elimination will be difficult in case of international trade and finance. So it recommended to at least eliminate the interest at domestic level.

Council recommended eliminating interest in three phases. The first phase was assumed to start from 1st July 1980. During this phase all transaction from SBP to federal and provincial governments, from federal government to provisional governments and from government to its employees were to be replaced with interest

free alternatives. No penal interest was to be charged in case of delay in due payments. Similarly commercial banks would provide all types of financing only in interest free modes of finance, be it for investment or consumption purpose.

Second phase was assumed to start from 1st July 1981. During this phase, all financial assets of banks and financial institutions were planned be made interest free.

Third phase was assumed to start from 1st January 1982. It was planned that all transactions of commercial banks with depositors or account holders would be on profit and loss sharing basis.

2.2.2.2 State Bank of Pakistan (SBP) Circular (1984)

State Bank of Pakistan vide BCD Circular No. 13, dated 20th June, 1984 specified twelve modes of finance for adoption by commercial banks in lieu of interest-free operations with effect from July 1, 1984.

The twelve modes are divided in three categories as follows:

2.2.2.2.1 Financing by Lending

- i. Interest-free loans carrying service charges.
- ii. Qarz-e-Hasnah (an interest-free loan without service charges).

2.2.2.2.2 Trade Related Modes of Financing

- iii. Purchase of goods/commodities/property by commercial banks and their immediate re-sale to the client on deferred payment (by client) with mark-up added (bai'mu'ajjal).
- iv. Buyback arrangement.

- v. Providing Financing to client for development of property on the basis of a development charge.
- vi. Purchase of trade bill.
- vii. Leasing.
- viii. Hire-purchase facility for client.

2.2.2.2.3 Investment Type Modes of Financing

- ix. Musharkah
- x. Equity participation
- xi. Purchase of ‘participation term certificate (PTCs)’ and ‘Mudabah certificates’.
- xii. Financing on the basis of rent sharing or redeemable partnership.

2.2.2.3 Commission for Islamization of Economy (CIE) Report (1992)

Commission for Islamization of economy submitted its report in June 1992. Later on an improved version was submitted in 1996. Various instruments offered in this report were questioned by Islamic jurists for their actual Shariah compatibility.

Following instruments were declared to be Shariah incompatible.

1. Linking returns on government loans to growth rate of economy.
2. Return according to profit earned by the general business activity of the country.
3. Tax concessions for the lender instead of fixed return on the borrowed amount.

4. Government securities on which profit is not fixed but declared at the time of maturity.
5. Loan with service charges.
6. Indexation of loan according to inflation rate in the economy.
7. Introduction of new currency “Pak Dinar” linked with a basket of commodities.
8. Hire purchase arrangement as adopted by conventional banks.
9. Use of Provident and Pension funds as debt to government
10. Use of demand deposits of commercial bank by the government.

Following instruments were declared to be Shariah compatible only with some amendments.

1. Sale-Hire-Purchase arrangement.
2. General Mudarbah Bonds.
3. SBP’s variable dividend securities.

Following instruments were declared to be Shariah compatible.

1. Bai Muajjal based securities or debt instruments.
2. Bai Salam based certificates.
3. Bai Istasna base transaction with instant payment but deferred delivery of product.
4. Asset Ijarah bonds
5. Rent Sharing Certificates.
6. Musharkah Bonds.

2.2.2.4 International Institute of Islamic Economics (IIIE) Report (1997):

In 1997, IIIE in its workshop presented different modes compatible with Shariah to finance government expenditures. IIIE blue print divides the instruments into three categories which are trade based instruments, leasing based instruments and partnership based instruments.

Trade based instruments consist of following three instruments.

- 1- Bai'mu'ajjal-Based Tradable Securities
- 2- Istisna'-Cum-Staggered Payment Arrangement
- 3- Salam Certificates

Leasing Based Instruments consist of following five instruments.

- 1- Simple Asset Ijarah Securities (AIS-SIM)
- 2- Asset Ijara Securities Involving a Financial Intermediary (AIS-IFI)
- 3- Asset Ijarah Securities-Issued by Government Itself for a Third Party Acquiring an Asset and Leasing the Same to Government (AIS-GOV).
- 4- Transferable Ijarah Warrants with a Finance-Lease-Transfer Arrangement (TIW-FLT)
- 5- Transferable Ijarah Warrants with a Build-Lease-Transfer Arrangement (TIW-BLT)

Partnership-Based Instruments consists of following three instruments.

- 1- Government Musharakah Certificates (GMCs)
- 2- Decreasing-Partnership or Redeemable Musharakah Certificates (RMCs)

- 3- Special Musharakah certificates against Existing Public Sector Undertakings (SMC-EPSUs)

Some Shariah compatible instruments were suggested by Muslim economists at individual level. Zarqa (1997) classifies Islamic financial instruments into three categories.

- 1- Participatory modes, such as Musharakah and Mudarabah
- 2- Sale based modes such as Salam (forward sale) and bai'mu'ajjal (deferred sale)
- 3- Rent based modes.

Zarqa (1997) has described difference between participatory based and sales based modes of finance. Participatory based modes of finance can be adopted where projects or business ventures results in generation of profits. For example transport services may generate profits. If a project does not generate profit then sales based modes of finance can be adopted. For example light house, military airbase or military equipment does not generate profits.

2.2.3 Nomenclature for Islamic Financial Instruments

The terms that are used for Islamic financial instruments are most often bond, certificates, securities, Sanadat and Sukuk. Let us first of all see what does these terms stand for in the literature.

2.2.3.1 Bond: Bond mean the way in which things are joined together, like a firm bond between two surfaces, regions, countries or even people such as bond of friendship. Bond is also a binding agreement by a government or a company to pay

the subject interest on the money that the subject has lent; a document containing these agreements is called a bond.

2.2.3.2 Certificate: Certificate is an official document that firmly attests and proves that facts stated into it are true.

2.2.3.3 Security: Security is a state of being safe. It is a document proving that subject is owner of shares etc. in a particular company. Government bonds are sometimes called securities instead of bonds, as these are the most secure debt contracts.

2.2.3.4 Sanadat: Sanadat is an Arabic word and has same meaning as certificates.

2.2.3.5 Sukuk: Sukuk is also an Arabic word used for documents that can act to prove ownership of an asset, whether real or financial. Sukuk is the most recent term used for Islamic financial instruments in place of all previous terms especially when instruments are launched in international markets. In this case Sukuk adopt features of euro bonds.

CHAPTER 3

METHODOLOGY AND MODEL

3.1 Methodology

First line of argument will be to study the categories and sub categories of public debt. We will check if public debt as a whole needs to be included in the analysis as a variable or if we need to include its categories instead in econometric analysis. This analysis will basically concentrate on cause and effect relationship between public debt and macroeconomic variables. We will try to investigate econometric relationship among components of public debt and major macroeconomic variables. This will lead to future policy implication. We will also search for Shariah alternatives for existing interest based instruments of public debt.

3.2 Analysis of Public Debt

Public debt has two broad categories, Domestic Debt and External Debt. Domestic debt is declared in terms of local currency units (Rupees), while external debt is declared in terms of international currency unit (Dollar). Both type of debt has shown almost ever increasing trend in Pakistan.

We can further study both categories of domestic debt in terms of sub categories as follows.

3.2.1 Domestic Debt:

There had been three sub categories in domestic debt as permanent debt, floating debt, unfunded debt. During previous three years two new sub categories are introduces

which are Naya Pakistan Certificates and SBP's SDR-based lending to government. These are discussed as follow.

Permanent Debt has many components but most prominent are only three. These are Pakistan Investment Bonds (PIBs), Prize Bonds and GOP Ijara Sukuk. Some of the components, which had been used in the past are now redundant. Bearer National Fund Bonds and Federal Investment Bonds are no more in use now. Composition reveals that volume of prize bonds remained fluctuating over the years, though declining since June 2018. GOP Ijara Sukuk too don't have stable volume. It declined in 2019 and is increasing since then. Pakistan Investment Bonds has an increasing trend. Permanent debt with all its components upto March 2022 is described as follows.

Table 3.1: Components of Permanent Debt

	Jun-13	Jun-18	Jun-19	Jun-20	Jun-21	Mar-22
Permanent Debt	2179	4659	12097	14031	15911	18714
Market Loans	2.8	2.8	2.8	2.8	2.8	2.8
Government Bonds	1.3	1.3	1.3	1.3	1.3	1.3
Prize Bonds	389.6	851	893.9	734.1	443.7	373.5
Foreign Exchange Bearer Certificates	0.1	0.1	0.1	0.1	0.1	0.1
Bearer National Fun Bonds	---	---	---	---	---	---
Federal Investment Bonds	---	---	---	---	---	---
Foreign Currency Bearer Certificates	---	---	0.1	0.1	0.1	0.1
U.S. Dollars Bearer Certificates	0.1	0.1	0.1	0.1	0.1	0.1
Special U.S. Dollar Bonds	4.3	5.1	6.7	6.9	6.5	7.5
Pakistan Investment Bonds (PIBs)	1321.6	3413.3	10932.2	12886	14590	19529.1
GOP Ijara Sukuk	459.2	385.4	71	198.2	665.3	1776.3
Bai-Muajjal of Sukuk	---	---	177.8	201	201	23.2

Source: Economic Survey of Pakistan 2021-22

Floating Debt mainly consists of market treasury bills. These bills can be traded in market and have maturity date of few months but less than one year. Situation of floating debt end March 2022 is given as follows.

Table 3.2: Components of Floating Debt

	Jun-13	Jun-18	Jun-19	Jun-20	Jun-21	Mar-22
Floating Debt	5149.9	8889	5500.6	5578.3	6680.4	5241.6
Market Treasury Bills	2919.7	5294.8	4930.5	5575.5	6676.9	5190.6
MTBs for Replenishment	2275.2	3594.2	570.2	2.8	3.5	50.9

Source: Economic Survey of Pakistan 2021-22

Unfunded Debt has largest number of components out of all sub categories of domestic debt. Currently Behbood Savings Certificate constitutes the largest portion of Unfunded Debt. Other main components are Regular Income Certificates, Special Savings Accounts, Savings Accounts, Defense Saving Certificates, Special Savings Certificates (Reg), and Pensioners' Benefit Accounts. Unfunded debt components are presented as follows.

Table 3.3: Components of Unfunded Debt

Unfunded Debt	2,146.5	2,868.1	3,144.1	3,673.6	3,645.9	3,608.5
Defence Saving Certificates	271.7	336.2	393.4	486.2	477.2	470.4
National Deposit Certificates	0.0	0.0	0.0	0.0	0.0	0.0
Khass Deposit Certificates	0.3	0.2	0.2	0.2	0.2	0.2
Special Savings Certificates (Reg.)	388.2	381.9	413.7	427.7	421.4	398.7
Special Savings Certificates (Bearer)	0.3	0.3	0.3	0.3	0.3	0.3
Regular Income Certificates	262.6	347.5	489.6	572.9	599.6	619.4
Premium Saving Certificates	0.0	0.0	0.0	0.0	0.0	0.0
Bahbood Savings Certificates	528.4	794.9	914.5	997.8	1,000.4	1,009.2
Short Term Savings Certificates	4.0	4.3	5.1	24.3	4.0	3.9
Khass Deposit Accounts	0.3	0.3	0.3	0.3	0.3	0.3
Savings Accounts	22.3	38.3	38.2	42.7	43.2	50.8
Special Savings Accounts	346.2	549.0	416.6	617.3	581.4	542.8
MahanaAmdani Accounts	2.0	1.7	1.6	1.5	1.5	1.5
Pensioners' Benefit Account	179.9	274.9	318.3	352.2	368.5	384.2
Shuhadas Family Welfare Account	-	-	0.0	0.1	0.1	0.1
National Savings Bonds	0.2	0.1	0.1	-	-	-
Postal Life Insurance Schemes	67.1	46.7	47.9	48.5	47.2	47.2
GP Fund	73.1	91.7	104.3	101.5	100.8	79.5

Source: Economic Survey of Pakistan 2021-22

Two new sub categories are Naya Pakistan Certificates with 37 billion rupees and and SBP’s SDR-based lending to GOP with 475 billion rupees of domestic debt as on March 2022..

Source wise profile of domestic debt is summarized in the form of following figure.

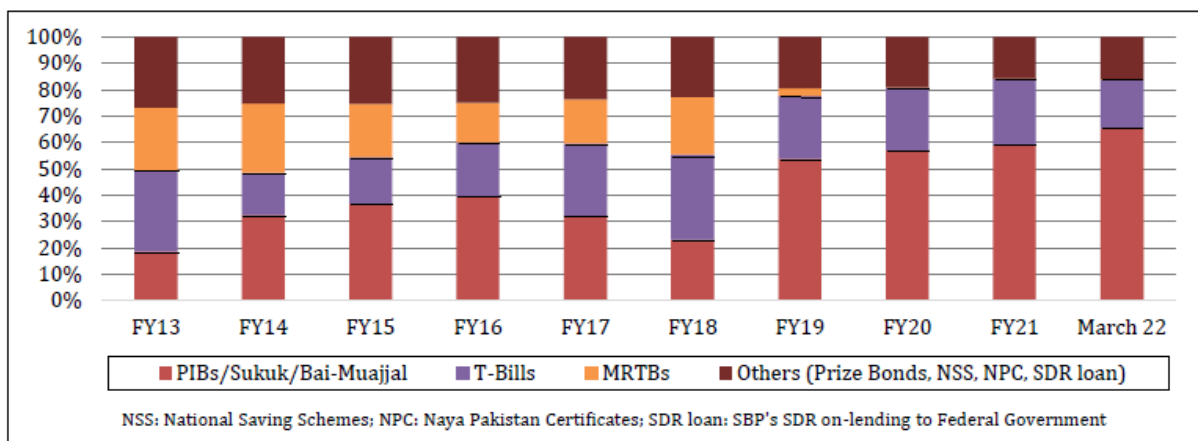


Figure 3.1: Change in Domestic Debt Profile over time

Proportion of Pakistan Investment Bonds (PIBs) has increased over the years. It means government is preferring long term debt instead of medium and short term debt.

3.2.2 External Debt:

External debt mainly consists of Multilateral Debt, Bilateral Debt and Bonds. Other sub-categories are IDB loan, Naya Pakistan Certificates (NPCs), Pakistan Banao Certificates (PBCs), Local Bonds (TBs and PIBs) and IMF loans. Bilateral loans consist of loans from Paris club countries and loans from non Paris club countries. External debt outstanding on 30th June 2022 (excluding IMF loan) is described in the following table.

Table 3.4: Components of External Debt

Country/Creditor	30-Jun-22
I. BILATERAL	Amount
a. Paris Club Countries	
AUSTRIA	23
BELGIUM	15
CANADA	44
FINLAND	3
FRANCE	1,469
GERMANY	1,191
ITALY	154
JAPAN	4,453
KOREA	422
THE NETHERLANDS	75
NORWAY	9
RUSSIA	87
SPAIN	60
SWEDEN	77
SWITZERLAND	68
UNITED KINGDOM	4
UNITED STATES	1,081
	<u>Sub Total I.a. Paris Club Countries</u>
	9,232
b. Non Paris Club Countries	
CHINA	16,223
KUWAIT	137
LIBYA	1
SAUDI ARABIA	1,193
UNITED ARAB EMIRATES	32
	<u>Sub Total I.b. Non-Paris Club Countries</u>
	17,587
c. Commercial Banks	10,031
d. Friendly Countries Deposits	7,000
	<u>Total I. (a+b+c+d)</u>
	43,850
II. MULTILATERAL & Others	
ASIAN DEVELOPMENT BANK (ADB)	13,772
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT (IBRD)	1,934
INTERNATIONAL DEVELOPMENT ASSOCIATION (IDA)	15,917
Other	2,400
ASIAN INFRASTRUCTURE INVESTMENT BANK (AIIB)	870
ISLAMIC DEVELOPMENT BANK (IDB)	987
INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD)	325
NORDIC DEVELOPMENT FUND	6
OPEC FUND	121
ECO TRADE BANK	92
	<u>Sub Total II. Multilateral & Others</u>
	34,023
III. BONDS	8,800
IV. IDB (SHORT TERM CREDIT)	1,327
V. LOCAL CURRENCY BONDS (TBs & PIBs)	27
VI. NAYA PAKISTAN CERTIFICATE (NPCS) AND PAKISTAN BANAO CERTIFICATE (PBCs)	998
	<u>Grand Total: (I+II+III+IV+V+VI)</u>
	89,024
Excluding IMF Loans	Source: Economic Affairs Division

3.2.3 Proportion of Domestic and External Debt:

In order of compare composition of public debt, we have to convert either domestic debt into foreign currency or we have to convert external debt into local currency. Here, both categories are described in terms of local currency units for the comparison purpose. Data is compared as follows.

Table 3.5: Domestic and External Debt

Year	Domestic	External	Total	Year	Domestic	External	Total
1971	14	16	30	1997	1056	939	1995
1972	17	38	55	1998	1199	1193	2392
1973	20	40	60	1999	1389	1557	2946
1974	19	44	63	2000	1645	1527	3172
1975	23	48	71	2001	1799	1885	3684
1976	28	57	85	2002	1775	1862	3637
1977	34	63	97	2003	1895	1800	3695
1978	41	71	112	2004	2028	1839	3867
1979	52	77	129	2005	2178	2034	4212
1980	60	86	146	2006	2322	2038	4360
1981	58	87	145	2007	2601	2201	4802
1982	81	107	188	2008	3274	2853	6127
1983	104	123	227	2009	3860	3871	7731
1984	125	132	257	2010	4653	4357	9010
1985	153	156	309	2011	6014	4756	10770
1986	203	187	390	2012	7638	5059	12697
1987	248	209	457	2013	9520	4771	14291
1988	290	233	523	2014	10907	5085	15992
1989	333	300	633	2015	12193	5188	17381
1990	381	330	711	2016	13626	6051	19677
1991	448	377	825	2017	14849	6559	21408
1992	532	437	969	2018	16416	8537	24953
1993	617	519	1136	2019	20732	11976	32708
1994	716	624	1340	2020	23283	13116	36399
1995	809	688	1497	2021	26265	13601	39866
1996	920	784	1704	2022	28076	16290	44366

Source: Economic Survey of Pakistan 2021-22

Proportions of domestic and external debt in total debt are depicted in the following graphs.

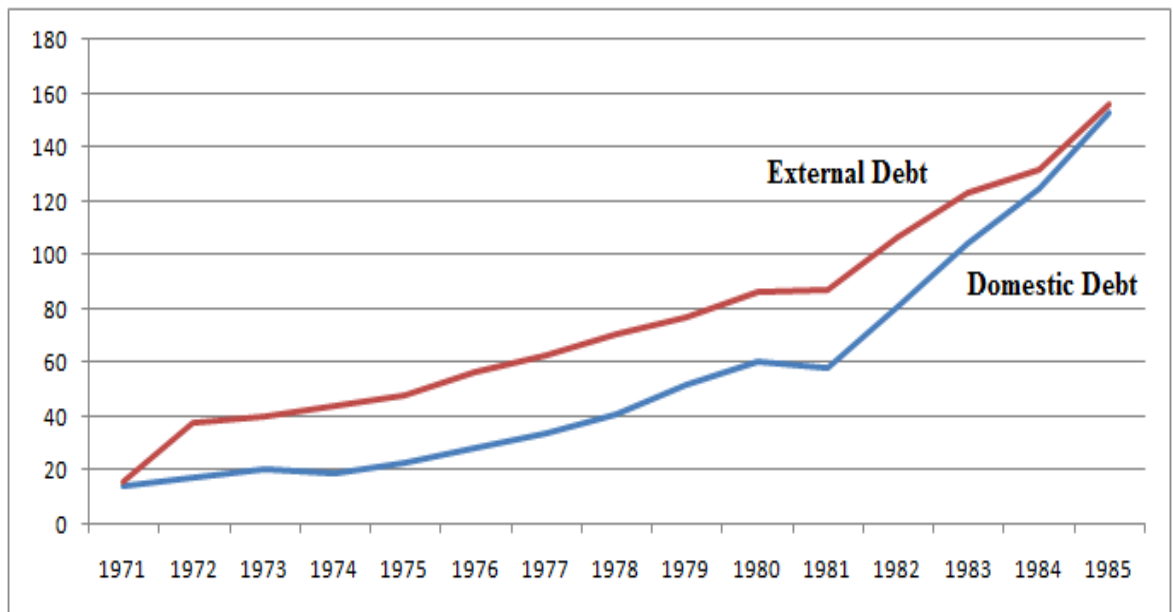


Figure 3.2: Change in Domestic and External Debt proportions (1971-1985)

During the period 1971 to 1985, external debt remained above the domestic debt.

Difference was maximum around 1980 and then gap started to decrease.

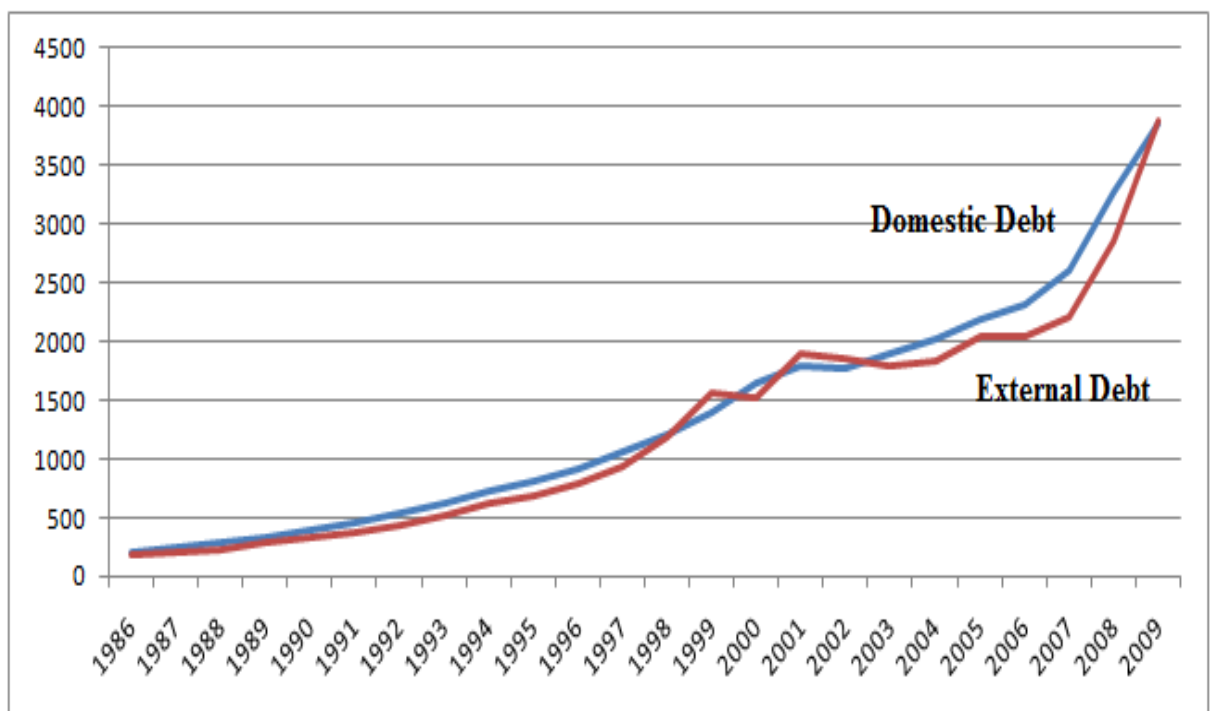


Figure 3.3: Change in Domestic and External Debt proportions (1985-2009)

During the period 1986 to 2009, volume of domestic remained almost equal to that of external debt though for most of the years domestic debt remained slightly above the external debt.

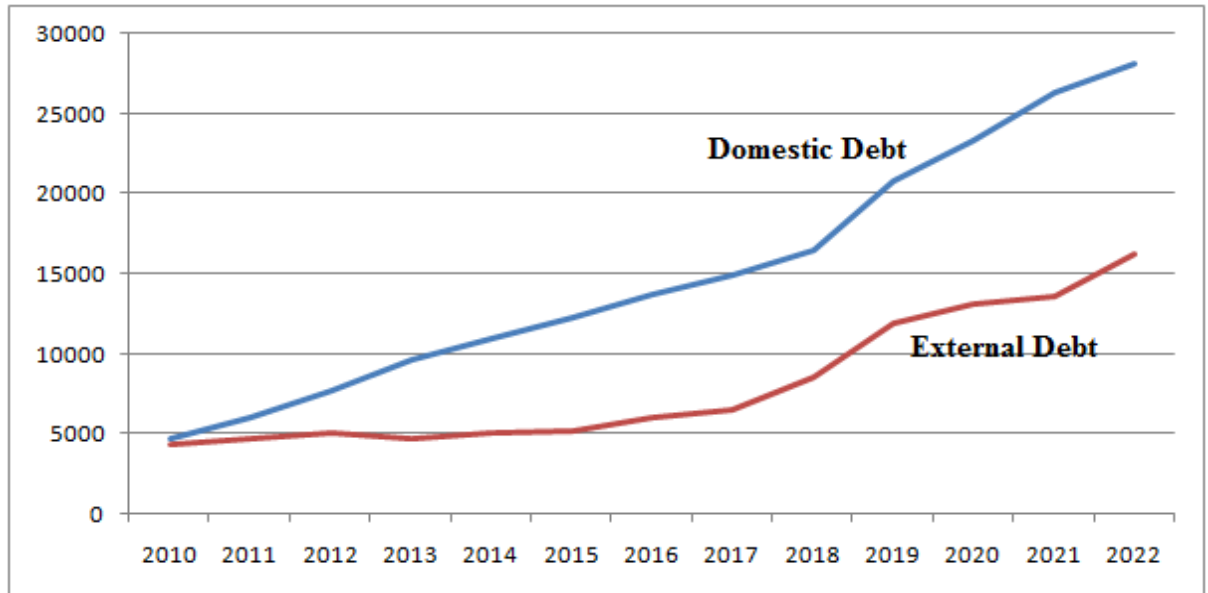


Figure 3.4: Change in Domestic and External Debt proportions (2009-2022)

After 2010, domestic debt started to increase at a higher rate as compared to external debt. Gap between the two is increasing year by year. Perhaps, it is because of the reluctant of international donors to lend to Pakistan due to debt trap type situation. Moreover Pakistan seems to merely rolling over the debt, be it domestic or external. It means each year country gets fresh loan in order to service installment and interest payment of the previous loan.

Our next task in this thesis is to analyze impact of public debt on economic growth both in long run as well as in short run. Two different measurements are used for economic growth. These measurements are GDP and GNP. Almost all of the previous studies considered only GDP as a measurement of economic growth and thus included GDP in the analysis of public debt.

One such research was conducted by Jebran et al. (2016). This type of research is unique and distinguished from almost all contemporary work, in the sense that both indicators of economic growth of a county are used. GDP may not provide true picture of the progress of a country's economy. In case of high foreign remittances, GNP becomes higher than GDP. Similar difference may occur in case of Foreign Direct Investment (FDI) and portfolio investment. If income received from domestic resources and production is transferred to foreign residents, then GDP may not reflect true picture about the progress of the country's economy.

Acronyms used for different terms about data set along with method for calculations of data columns set are given as follows.

- 1- The data of external debt is in percentage of GDP represented as (ED_Y).
- 2- The data of external debt is in percentage of GNP represented as (ED_X).
- 3- The domestic debt data is in percentage of GDP and is represented as (DD).
- 4- The data of debt services is in percentage of exports represented as (DS).
- 5- The data of trade openness is ratio of exports and imports to GDP represented as (OP).
- 6- The data of inflation is in annual percentage and is represented as (INF).

Now the econometric specification can be written as follows:

3.3 The Model

- $GDP_t = c + \beta_1 GDP_{t-1} + \beta_2 ED_Y_t + \beta_3 DD_t + \beta_4 DS_t + \beta_5 INF_t + \beta_6 OP_t + \varepsilon_t$ (1)

The above equation depicts the relationship between dependent and independent variables in general form. We can convert it to long run and short run forms. Long

run form is presented in equation (2) and short run form is presented in equation (3) below.

- $GDP_t = c + \beta_1 GDP_{t-1} + \beta_2 ED_Y_{t-1} + \beta_3 DD_{t-1} + \beta_4 DS_{t-1} + \beta_5 INF_{t-1} + \beta_6 OP_{t-1} + \varepsilon_t$ (2)
- $\Delta GDP_t = c + \alpha_i \sum_{i=0}^p \Delta GDP_{t-i} + \alpha_j \sum_{j=0}^p \Delta ED_Y_{t-j} + \alpha_k \sum_{k=1}^p \Delta DD_{t-k} + \alpha_l \sum_{l=1}^p \Delta DS_{t-l} + \alpha_m \sum_{m=1}^p \Delta INF_{t-m} + \alpha_n \sum_{n=1}^p \Delta OP_{t-n} + ECM_{t-1} + \varepsilon_t$ (3)

If variables are a mixture of I(1) and I(0) then we use AR DL model after confirming for long run relationship through Bound Test procedure. We converted all the data in log arithmetic transformation. After getting results for all the with GDP ratios, we proceed for second model.

We use a separate model for analyzing GNP related data. GNP includes GDP and net foreign remittances from abroad. Depending on the sign of net foreign remittances, GNP can be more or less than the GDP. Most common variable used as a proxy of GNP is Gross National Income or GNI. We have used GNI in place of GNP in this thesis.

In the model above (for GDP related data) we presented external debt to GDP ratio by ED_Y. In the model below (for GNP related data) we will present external debt to GNP ratio by ED_X.

Now general form of the GNP related model is presented as follows.

- $GNP_t = c + \beta_1 GNP_{t-1} + \beta_2 ED_X_t + \beta_3 DD_t + \beta_4 DS_t + \beta_5 INF_t + \beta_6 OP_t + \varepsilon_t$ (4)

We can convert it to long run and short run forms. Long run form is presented in equation (5) and short run form is presented in equation (6) below.

- $GNP_t = c + \beta_1 GNP_{t-1} + \beta_2 ED_{t-1} + \beta_3 DD_{t-1} + \beta_4 DS_{t-1} + \beta_5 INF_{t-1} + \beta_6 OP_{t-1} + \varepsilon_t$ (5)
- $\Delta GNP_t = c + \alpha_1 \sum_{i=0}^p \Delta GNP_{t-i} + \alpha_2 \sum_{j=0}^p \Delta ED_{t-j} + \alpha_3 \sum_{k=1}^p \Delta DD_{t-k} + \alpha_4 \sum_{l=1}^p \Delta DS_{t-l}$
 $+ \alpha_5 \sum_{m=1}^p \Delta INF_{t-m} + \alpha_6 \sum_{n=1}^p \Delta OP_{t-n} + ECM_{t-1} + \varepsilon_t$ (6)

We proceed by checking for existence of unit root. If our model has both stationary and non-stationary variables, then we use ARDL modeling. Before starting ARDL modeling we check and confirm for long run relationship among dependent and independent variables. We will use Bound Test technique for this purpose.

3.4 Shariah Alternatives for Public Debt

Second line of argument will be Shariah accommodating alternatives to replace the current interest based debt instruments. We have discussed in literature review that various studies reveal negative impact of public debt or its categories on GDP. Though, a few studies discuss about positive impact too. We have discussed in this chapter that both domestic and external debt are continuously increasing with time. Government is in a debt trap type of situation. It seems government is only rolling over the debt instead of repayment of debt and thus decreasing debt burden.

Whether effect of debt on macroeconomic variables is positive or negative, need for Shariah alternatives may be described as follows.

- 1- If effect of public debt is positive, we may switch over to shariah alternatives on the ground that interest is prohibited in Islam.
- 2- If effect of debt on macro variable is negative, then besides the reason above, a second reason is to get rid of the principal amount. Shariah alternatives cannot cause accumulation of public debt in form of principal amount and

interest rate.

A strategy in this regard may be to switch over from interest based to interest free system. Both systems have their own consequences. In the interest based system, lender has no concern about the actual use of the money lent. Borrower has to repay the principal amount along with the interest payment.

In interest free system, lender has to finance the needs of the borrower in a well defined and well documented manner. Borrower has no responsibility over the principal amount and interest payment. However borrower has responsibility to abide by the rules written or specified at the time of the contract/ project. Shariah compatible modes of finance are a way to make lender responsible for utilization of resources and return on his money. These Shariah compatible modes may lead to generation of various certificates which may be sold in the secondary market.

Debt is obtained for either consumption or investment purpose. In both cases, shariah alternatives are available.

- 1- If debt is obtained for consumption purpose, Shariah alternatives consist of fundamental instruments like, Bai-Muajjal, Bai Salam, Bai Istisna etc and combinations or derivations of them.
- 2- If debt is obtained for investment purpose, Shariah alternatives consist of fundamental instruments like Mudarbah, Musharkah, Murabaha etc and combinations or derivatives of them.

In either of the above cases, it may be well predicted that level of corruption will be reduced. In case of interest based debt, lender has no concern about the nature of utilization of debt by the borrower. While, in case of Shariah alternatives, lender (which may now be called investor/producer/lesser etc) is well concerned about the

proper and profitable usage of the money, he is going to provide. So it will reduce chance of the corruption on the part of the debtor (which may now be called beneficiary/consumer/lessee etc.)

Interest free certificates can prove substitutes for the existing debt instruments. Two factors are considered important while investing in any venture. First is the expected rate of return on investment. Second is the length of time for which money is going to be bound or not available due to business venture. A variety of certificates may be offered keeping in view these two factors. A saver can choose any certificate or a combination of certificates depending upon his priorities. A technique to decrease the level of risk from all certificates may be to use all the methods described in these schemes and at the same time make their combinations according to time period required for each type of mode. It would automatically imply adding up all the profits in a different pool, while each pool representing a different maturity period for the investment. Now government can announce a single type of certificates of different time period. These certificates may be called **Investment Certificates**. About 3600 billion rupees of unfunded domestic debt consists of National Saving Schemes (NSSs), which may thus be converted into **National Investment Schemes (NISs)**.

3.5 Some other Avenues to Finance Government Expenditures

Third line of argument will be to suggest some others avenues to finance the government expenditures. Government has to run its office and needs the financing for its expenditures. Defense is a public good and can be financed only by government. Similarly to provide education and health facilities is considered a government responsibility.

Our final task is to suggest some other avenues to finance the government expenditure. Avenues other than public debt will cause to reduce the debt servicing burden in the future releasing resources for the development projects. These avenues include projects by Islamic banks, Investment funds, Public Sector Enterprises (PSEs), Local governments' surplus budgets and finally mines and minerals. Each mode is discussed in depth especially mines and minerals.

We can notice that public sector expenditures are managed in other countries from extraction of minerals despite the revenue from taxes and borrowing. We will try to find possibilities for similar avenues in Pakistan. Pakistan has 92 different types of minerals. Three minerals i.e., Petroleum, Gas and Uranium are owned and managed by Federal government. Other minerals are managed by the province of extraction of minerals. Reforms in this sector can significantly reduce reliance on public debt to finance the government expenditures.

3.6 Data Sources

Most of the data is extracted from World Bank Indicators (WBI). The missing data may be collected from various issues of Economic Survey of Pakistan (ESP), State Bank of Pakistan (SBP), Federal Bureau of Revenue (FBR) and other public sector departments. Data collected will be of good quality as all transactions in public debt are recorded by government with high accuracy.

CHAPTER 4

RESULTS

We have two sets of data. In one set we have GDP as dependent variable and in second set we have GNI as dependent variable, whereas GNI is used as a proxy for GNP. Data is converted into log form. Two data sets one pertaining to GDP and other to GNP are collected. These graphical presentation is given below.

4.1 Graphical Presentation of Time Series Variables

Following graphs are ratios related to GDP, where,

LGDP= Log of GDP converted in US\$

LED = Log of External Debt to GDP ratio in US\$

LDD = Log of Domestic Debt to GDP ratio in US\$

LSD = Log of External Debt Service to export ratio in US\$

LI = Log of Inflation rate

LO = Log of Openness of economy (ratio of imports and exports to GDP in US\$)

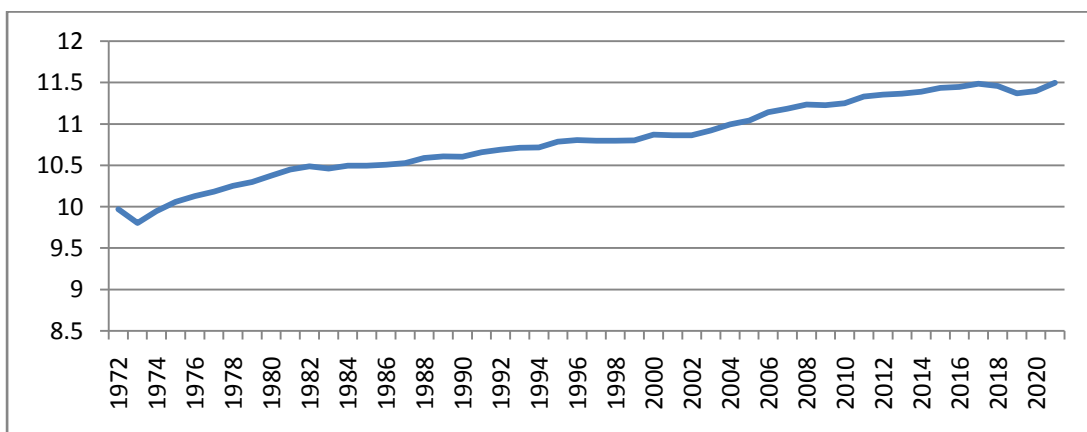


Figure 4.1: Log of GDP in US \$

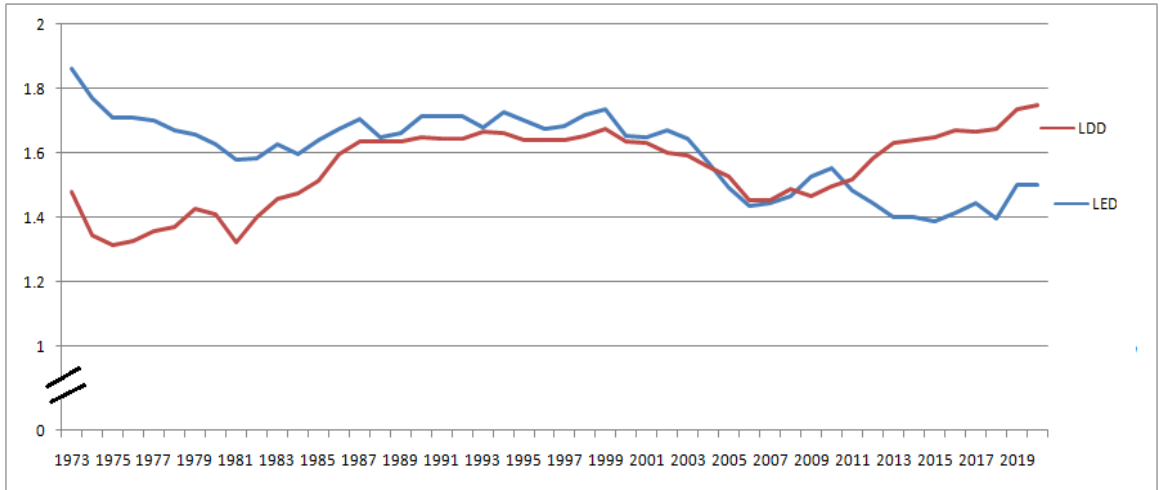


Figure 4.2: Log of Domestic Debt and External Debt to GDP ratios in US \$

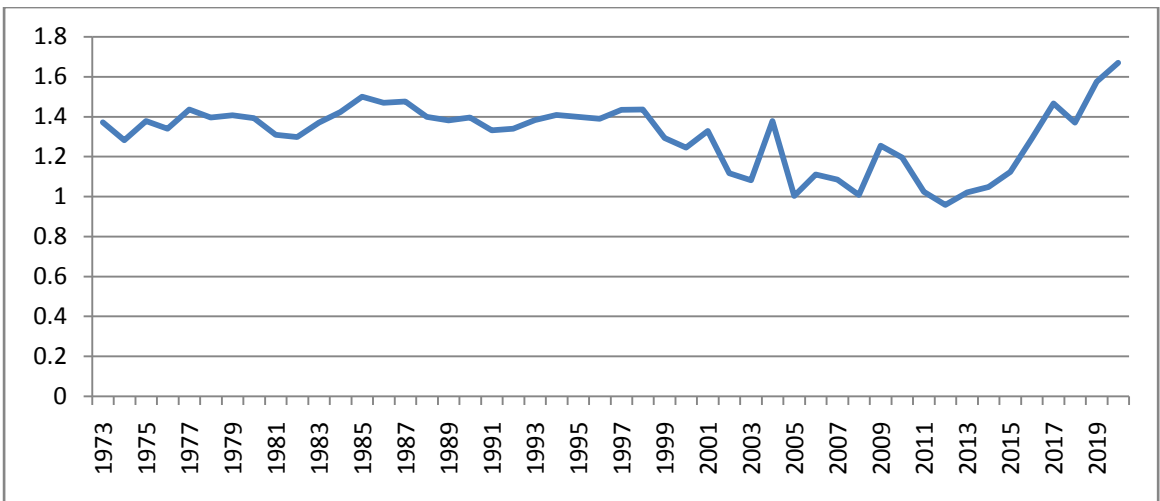


Figure 4.3: Log of Debt Servicing to GDP ratio in US \$

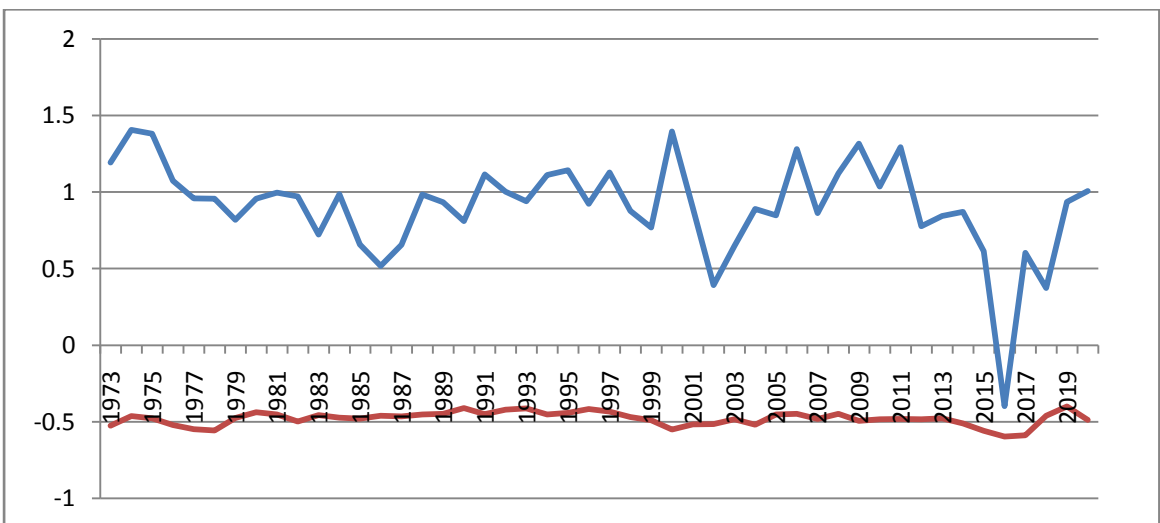


Figure 4.4: Log of Inflation and Log of Openness of economy to GDP ratio in US \$

Following graphs are ratios related to GDP, where,

LGNP= Log of GNP converted in US\$

LED = Log of External Debt to GNP ratio in US\$

LDD = Log of Domestic Debt to GNP ratio in US\$

LSD = Log of External Debt Service to export ratio in US\$

LI = Log of Inflation rate

LO = Log of Openness of economy; ratio of imports and exports to GNP in US\$

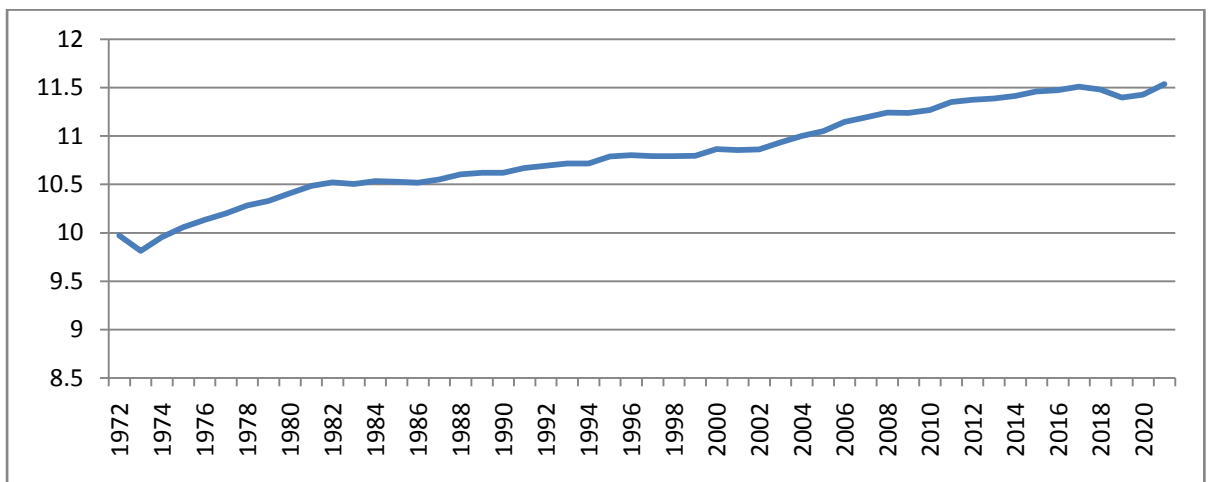


Figure 4.5: Log of GNP in US \$

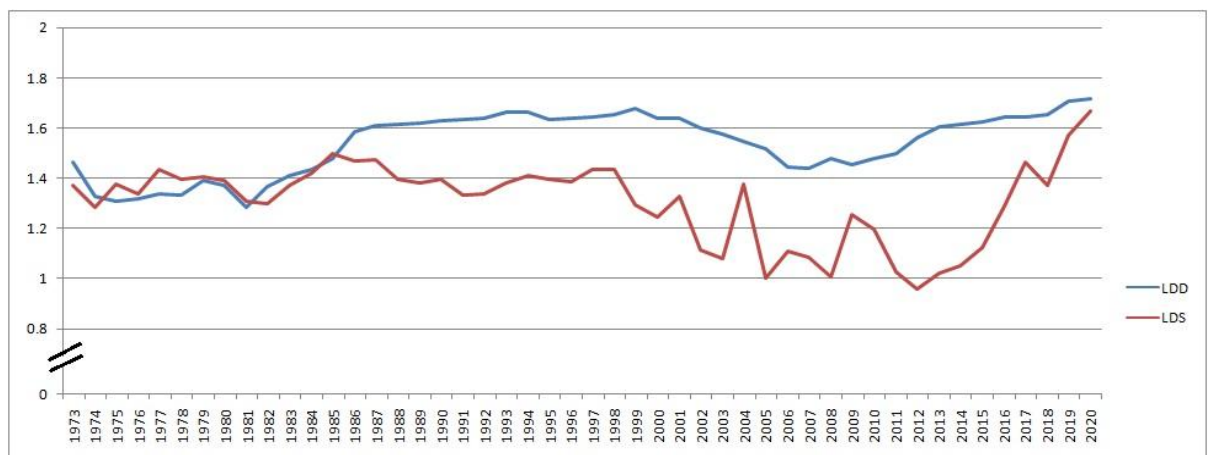


Figure 4.6: Log of Domestic Debt and External Debt to GNP ratios in US \$

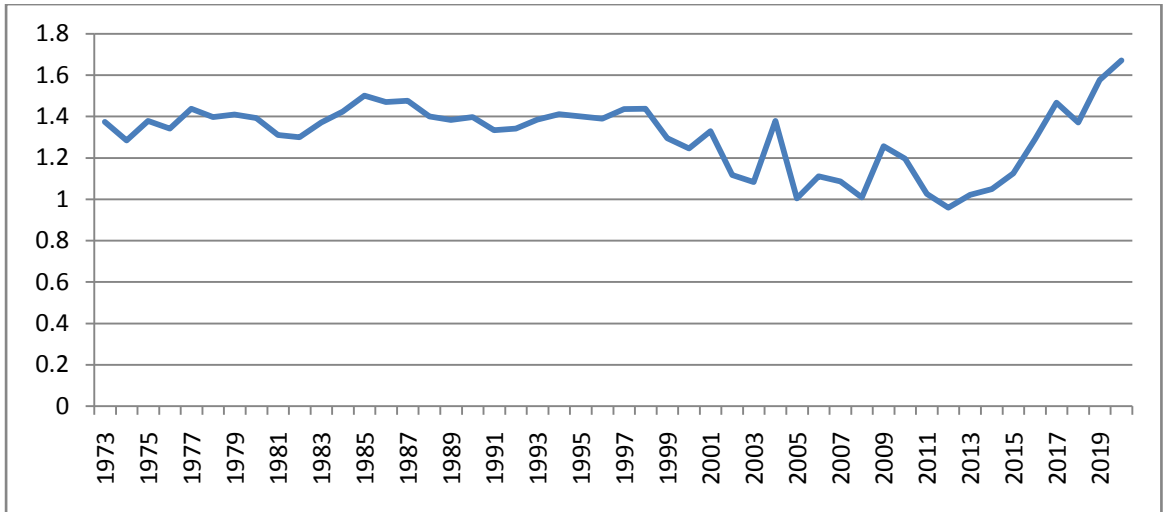


Figure 4.7: Log of Debt Servicing to GNP ratio in US \$

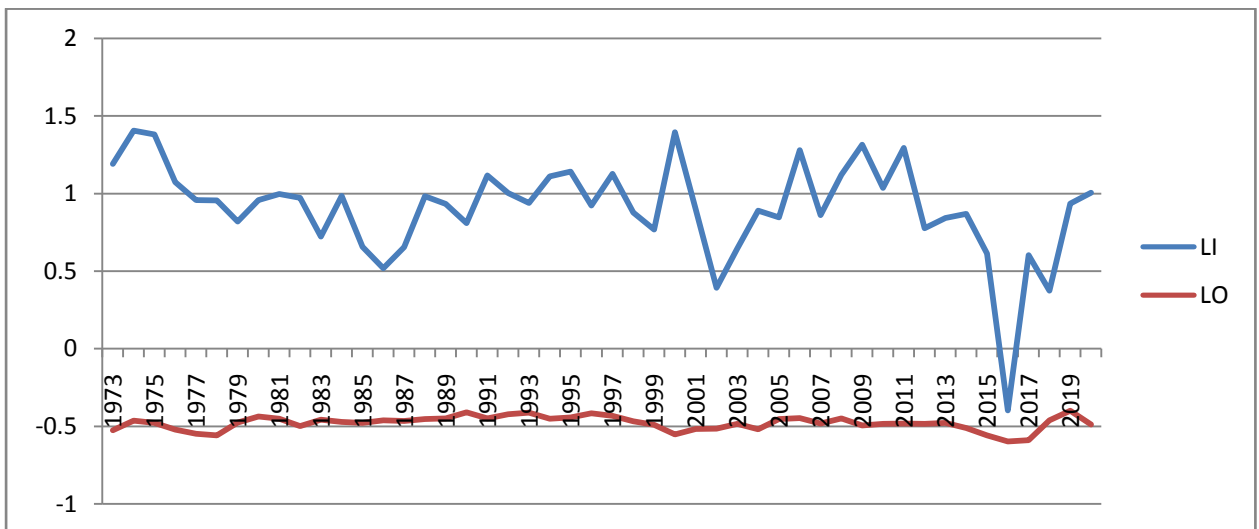


Figure 4.8: Log of Inflation and Log of Openness of economy to GDP ratio in US \$

From the visual inspection, it seems that data of LGDP, LGNP, LDD, LED is non stationary. Estimation of the model and results are discussed in next chapter.

We can now proceed to test for both data sets, one by one.

4.2 Results for model having GDP as dependent variable

In the first model, we divide External debt and domestic debt by GDP to get the required ratios. Similarly to get value of openness of economy, we divide exports and imports by the GDP. LGDP is log of GDP and it is in level. LDD is log of domestic debt to GDP ratio. LED is log of external debt to GDP ratio. LDS is log of debt service to exports ratio. LIN is log of inflation rate and LOP is log of value of openness of economy. Now let us first of all check for level of integration of the variables.

Table 4.1: Unit Root Tests of Logs of Variables

variable	Level	1 st Difference	inference
LGDP	0.9733(-2.082)	0.2686(-5.284**)	I(1)
LED	0.9302(-1.286)	0.1021(-6.042**)	I(1)
LDD	0.9301(-1.533)	0.2179(-5.325**)	I(1)
LDS	0.7897(-1.964)	-0.2749(-8.695)	I(1)
LI	0.3352(-4.78**)		I(0)
LO	0.6074(-3.24*)		I(0)

* is significance level at 5%

It is obvious from the above results that LI and LO are I(0). The results given above are used to check level of integration of other variables i.e., LGDP, LDD, LED and LDS. Test is conducted on their first differences. In the results, we get the idea that these four variables are integrated of first order or they are I(1). After confirming to have a mixture of I(0) and I(1) variables, we proceed for the Bound Test.

4.2.1 Bound Test

Bound test results are given below. We apply restrictions on the variables levels on LHS. We get F- statistics. We know that below lower bound, no long run relationship exists. Region between lower and upper bound is the region of indecision, while long run relation exists when our calculated value is above the upper bound. F-statistics for exclusion restrictions is above the upper bound given in the critical values for the bound test. So a long run relation may exist among the variables and we can proceed for ARDL modeling.

Table 4.2: Bound Test for GDP

Variable	Coefficient	Std.Error	t-value	t-prob	Part.R²
DLGDP_1	0.182220	0.1497	1.22	0.2330	0.0471
LGDP_1	0.00831051	0.01113	0.747	0.4611	0.0182
LED_1	0.0427233	0.05834	0.732	0.4697	0.0176
LDD_1	-0.101097	0.06047	-1.67	0.1049	0.0852
LDS_	10.00116522	0.04436	0.0263	0.9792	0.0000
LI_1	0.00468033	0.02599	0.180	0.8583	0.0011
LO_1	-0.0432397	0.1318	-0.328	0.7451	0.0036
DLED	-0.478820	0.1104	-4.34	0.0001	0.3855
DLED_1	0.274617	0.1314	2.09	0.0452	0.1271
DLDD	-0.250952	0.1165	-2.15	0.0395	0.1339
DLDD_1	-0.133406	0.09011	-1.48	0.1492	0.0681
DLDS	-0.00548042	0.03833	-0.143	0.8873	0.0007
DLDS_1	-0.0135869	0.03987	-0.341	0.7357	0.0039
DLI	0.00990128	0.01517	0.653	0.5189	0.0140
DLI_1	-0.0223187	0.01610	-1.39	0.1760	0.0602
DLO	-0.216605	0.1019	-2.13	0.0418	0.1310
DLO_1	0.0208631	0.1259	0.166	0.8695	0.0009

sigma	0.019683	RSS	0.0116226033
log-likelihood	128.476	DW	1.48
no. of observations	47	no. of parameters	17
mean(DLGDP)	0.0338672	var(DLGDP)	0.00158076

4.2.1.1 Test for Exclusion Restrictions

[0] = LGDP_1 [1] = LED_1

[2] = LDD_1 [3] = LDS_1

[4] = LI_1 [5] = LO_1

Subset F(6,30) = 5.6499 [0.0005]**

Bound test comes out to be $F(6,30) = 5.6499 [0.0005]**$. It is above the critical value. So long run relation exists between variables. These variables are a mixture of I(0) and I(1) time series. To get the long run relationship, we proceed for ARDL as follows.

4.2.2 ARDL

We start ARDL model with first lag. We find first lag of LDS with highest probability value to be insignificant. We exclude it and run the regression again. Now current value of LI has highest probability value. We exclude it and we run the regression again. We continue the process and finally after repeatedly refining the model, we get one lagged value of dependent variable on LHS along with four independent variables. Final model is presented as follows,

$$LGDP = 1.012 LGDP_1 - 0.55LED + 0.65LED_1 - 0.18LLD - 0.03LI_1 - 0.24LO + 0.26LO_1$$

Fist regression results are presented as follows.

Table 4.3: First ARDL model for GDP

Variables	Coefficient	Std.Error	t-value	t-prob	Part.R²
LGDP_1	1.01112	0.008718	116.	0.0000	0.9973
LED	-0.423598	0.09679	-4.38	0.0001	0.3473
LED_1	0.528995	0.09774	5.41	0.0000	0.4486
LDD	-0.283055	0.09762	-2.90	0.0063	0.1893
LDD_1	0.135982	0.08988	1.51	0.1390	0.0598
LDS	-0.0257301	0.03122	-0.824	0.4152	0.0185
LDS_1	0.000811416	0.03518	0.0231	0.9817	0.0000
LI	0.0107879	0.01474	0.732	0.4691	0.0147
LI_1	-0.0278856	0.01267	-2.20	0.0342	0.1186
LO	-0.251111	0.08941	-2.81	0.0080	0.1797
LO_1	0.210580	0.1000	2.11	0.0423	0.1097

sigma 0.0200706 RSS 0.014501834
log-likelihood 123.275 DW 1.43
no. of observations 47 no. of parameters 11
mean(LGDP) 10.8242 var(LGDP) 0.176319

Results of the last regression are presented as follows.

Table 4.4: Last ARDL model for GDP

Variables	Coefficient	Std.Error	t-value	t-prob	Part.R²
LGDP_1	1.01624	0.007408	137.	0.0000	0.9979
LED	-0.544586	0.07705	-7.07	0.0000	0.5553
LED_1	0.650401	0.07434	8.75	0.0000	0.6568
LDD	-0.177923	0.03990	-4.46	0.0001	0.3321
LI_1	-0.0276114	0.01209	-2.28	0.0278	0.1153
LO	-0.235399	0.08388	-2.81	0.0077	0.1645
LO_1	0.263185	0.08716	3.02	0.0044	0.1856

sigma	0.020193	RSS	0.016310322
log-likelihood	120.513	DW	1.33
no. of observations	47	no. of parameters	7
mean(LGDP)	10.8242	var(LGDP)	0.176319

4.2.3 ECM

Short run dynamics are just according to econometrics theory. Sign of ECM lagged term is negative and it shows the adjustment in each consecutive year. Short run dynamics are presented by ECM model as follows,

Table 4.5: ECM for the Model for GDP

Variables	Coefficient	Std.Error	t-value	t-prob	Part.R²
Constant	0.00550233	0.005720	0.962	0.3423	0.0244
DLGDP_1	0.844327	0.1759	4.80	0.0000	0.3839
DLED	-0.489862	0.07902	-6.20	0.0000	0.5095
DLED_1	0.560231	0.1386	4.04	0.0003	0.3064
DLDD	-0.233062	0.09384	-2.48	0.0177	0.1429
DLI_1	-0.0341389	0.008326	-4.10	0.0002	0.3124
DLO	-0.243956	0.06917	-3.53	0.0011	0.2516
DLO_1	0.163120	0.08405	1.94	0.0599	0.0924
residuals_1	-0.524667	0.2303	-2.28	0.0286	0.1230

sigma	0.0180935	RSS	0.0121128389
R ²	0.805658	F(8,37) =	19.17 [0.000]**
log-likelihood	124.298	DW	1.88
no. of observations	46	no. of parameters	9
mean(DLGDP)	0.0315144	var(DLGDP)	0.00135495

4.3 Results for model having GNP as dependent variable

In the second model, we divide External debt and domestic debt by GNP to get the required ratios. Similarly to get value of openness of economy, we divide exports and imports by the GNP. LGNP is log of GNP and it is in level. LDD is log of domestic debt to GNP ratio, LED is log of external debt to GNP ratio. LDS is log of debt service to exports ratio. LIN is log of inflation rate and LOP is log of value of openness of economy. Now let us first of all check for level of integration of the variables.

Table 4.6: Unit Root Tests of Logs of Variables (w.r.t. GNP)

Variable	Level	1 st Difference	inference
LGNP	0.97307(-2.082)	0.32047(-4.932**)	I(1)
LED	0.93688(-1.217)	0.15505(-5.690**)	I(1)
LDD	0.9301(-1.533)	0.2179(-5.325**)	I(1)
LDS	0.7897(-1.964)	-0.2749(-8.695)	I(1)
LI	0.3352(-4.78**)		I(0)
LO	0.6074(-3.24*)		I(0)

It is obvious from the above results that LI and LO are I(0). The results given above are used to check level of integration of other variables i.e., LGDP, LDD, LED and LDS. Test is conducted on their first differences. In the results we get the idea that these four variables are integrated of first order or they are I(1). After confirming to have a mixture of I(0) and I(1) variables, we proceed for the Bound Test.

4.3.1 BOUND TEST

Bound test results are given below. We apply restrictions on the variables levels on LHS. We get F- statistics. It comes out to be $F(6,30) = 5.6499 [0.0005]**$. We

know that below lower bound, no long run relationship exists. region between lower and upper bound is the region of indecision, while long run relation exists when our calculated value is above the upper bound. F-statistics for exclusion restrictions is above the upper bound given in the critical values for the bound test. So a long run relation may exist among the variables and we can proceed for ARDL modeling.

Table 4.7: Bound Test for GDP

Variables	Coefficient	Std.Error	t-value	t-prob	Part.R²
DLGNP_1	0.182220	0.1497	1.22	0.2330	0.0471
LGNP_1	0.00831051	0.01113	0.747	0.4611	0.0182
LED_1	0.0427233	0.05834	0.732	0.4697	0.0176
LDD_1	-0.101097	0.06047	-1.67	0.1049	0.0852
LDS_1	0.00116522	0.04436	0.0263	0.9792	0.0000
LI_1	0.00468033	0.02599	0.180	0.8583	0.0011
LO_1	-0.0432397	0.1318	-0.328	0.7451	0.0036
DLED	-0.478820	0.1104	-4.34	0.0001	0.3855
DLED_1	0.274617	0.1314	2.09	0.0452	0.1271
DLDD	-0.250952	0.1165	-2.15	0.0395	0.1339
DLDD_1	-0.133406	0.09011	-1.48	0.1492	0.0681
DLDS	-0.00548042	0.03833	-0.143	0.8873	0.0007
DLDS_1	-0.0135869	0.03987	-0.341	0.7357	0.0039
DLI	0.00990128	0.01517	0.653	0.5189	0.0140
DLI_1	-0.0223187	0.01610	-1.39	0.1760	0.0602
DLO	-0.216605	0.1019	-2.13	0.0418	0.1310
DLO_1	0.0208631	0.1259	0.166	0.8695	0.0009

sigma	0.019683	RSS	0.0116226033
log-likelihood	128.476	DW	1.48
no. of observations	47	no. of parameters	17
mean(DLGNP)	0.0338672	var(DLGNP)	0.00158076

4.3.1.1 Test for Exclusion Restrictions

[0] = LGNP_1 [1] = LED_1

[2] = LDD_1 [3] = LDS_1

[4] = LI_1 [5] = LO_1

Subset F(6,30) = 5.6499 [0.0005]**

4.3.2 ARDL

We start ARDL model with first lag. We find first lag of LDS with highest probability value to be insignificant. We exclude it and run the regression again. Now current value of LI has highest probability value. We exclude it and we run the regression again. We continue the process and finally after repeatedly refining the model, we get one lagged value of dependent variable on LHS along with four independent variables. Final model is presented as follows,

$$\text{LGNP} = 1.02\text{LGNP}_1 - 0.55\text{LED} + 0.65\text{LED}_1 - 0.18\text{LDD} - 0.03\text{LI}_1 - 0.24\text{LO} + 0.26\text{LO}_1$$

Fist regression results are presented as follows.

Table 4.8 First ARDL model for GNP

Variables	Coefficient	Std.Error	t-value	t-prob	Part.R²
LGNP_1	1.01112	0.008718	116	0.0000	0.9973
LED	-0.423598	0.09679	-4.38	0.0001	0.3473
LED_1	0.528995	0.09774	5.41	0.0000	0.4486
LDD	-0.283055	0.09762	-2.90	0.0063	0.1893
LDD_1	0.135982	0.08988	1.51	0.1390	0.0598
LDS	-0.0257301	0.03122	-0.824	0.42	0.0185
LDS_1	0.000811416	0.03518	0.0231	0.98	0.0000
LI	0.0107879	0.01474	0.732	0.469	0.0147
LI_1	-0.0278856	0.01267	-2.20	0.034	0.1186
LO	-0.251111	0.08941	-2.81	0.008	0.1797
LO_1	0.210580	0.1000	2.11	0.0423	0.1097

sigma 0.0200706 RSS 0.014501834
log-likelihood 123.275 DW 1.43
no. of observations 47 no. of parameters 11
mean(LGNP) 10.8242 var(LGNP) 0.176319

Results of the last regression are presented as follows.

Table 4.9: Last ARDL model for GNP

Variables	Coefficient	Std.Error	t-value	t-prob	Part.R²
LGNP_1	1.01624	0.007408	137.	0.0000	0.9979
LED	-0.544586	0.07705	-7.07	0.0000	0.5553
LED_1	0.650401	0.07434	8.75	0.0000	0.6568
LDD	-0.177923	0.03990	-4.46	0.0001	0.3321
LI_1	-0.0276114	0.01209	-2.28	0.0278	0.1153
LO	-0.235399	0.08388	-2.81	0.0077	0.1645
LO_1	0.263185	0.08716	3.02	0.0044	0.1856

sigma	0.020193	RSS	0.016310322
log-likelihood	120.513	DW	1.33
no. of observations	47	no. of parameters	7
mean(LGNP)	10.8242	var(LGNP)	0.176319

4.3.3 ECM

Short run dynamics are presented by ECM model as follows,

Table 4.10: ECM for the Model for GNP

Variables	Coefficient	Std.Error	t-value	t-prob	Part.R²
DLGNP_1	0.844327	0.1759	4.80	0.0000	0.3839
Constant	0.00550233	0.005720	0.962	0.3423	0.0244
DLED	-0.489862	0.07902	-6.20	0.0000	0.5095
DLED_1	0.560231	0.1386	4.04	0.0003	0.3064
DLDD	-0.233062	0.09384	-2.48	0.0177	0.1429
DLI_1	-0.0341389	0.008326	-4.10	0.0002	0.3124
DLO	-0.243956	0.06917	-3.53	0.0011	0.2516
DLO_1	0.163120	0.08405	1.94	0.0599	0.0924
ECM_1	-0.524667	0.2303	-2.28	0.0286	0.1230

sigma	0.0180935	RSS	0.0121128389
R ²	0.805658	F(8,37) =	19.17 [0.000]**
log-likelihood	124.298	DW	1.88
no. of observations	46	no. of parameters	9
mean(DLGNP)	0.0315144	var(DLGNP)	0.00135495

Short run dynamics are just according to econometrics theory. Sign of ECM lagged term is negative and it shows the adjustment in each consecutive year. If in one period

value is above equilibrium, then in next period change is positive and vice versa. In this way equilibrium is said to be stable.

From the results, we conclude that debt overhang effect is observed in Pakistan. Over the long run, both GDP and GNP are negatively related with both domestic and external debt. It requires policies to minimize the accumulation of public debt. It can be achieved through proper legislation. One such effort was Fiscal Responsibility and Debt Limitation (FRDL) Act of 2005. Other efforts may include offering the Shariah alternatives of interest based instruments of public debt and searching for other avenues for financing government expenditures. This is discussed in next chapter.

CHAPTER 5

SHARIAH ALTERNATIVES AND OTHER AVENUES FOR RESOURCE MOBILIZATION FOR GOVERNMENT

We will divide this chapter in two parts. First part will be about Shariah alternatives of public debt. Second part will be about some other avenues (other than tax and debt) for resource mobilization for government.

5.1 SHARIAH ALTERNATIVES OF PUBLIC DEBT

We have to take care of both borrower and lender while trying to offer interest free alternatives. The instruments listed above can serve on both ends. At one hand they provide attractive returns to the savers and on the other hand government can get enough resources to finance its projects. To provide benefits to the savers, government must think of the ways to provide savers to invest in real sector.

Government expenditures in government budget are of two types, i.e., current expenditures and development expenditures. Current expenditures can be fulfilled with budget revenue consisting of taxes and non-tax income. While development expenditures can be financed by using different types of Shariah compatible modes of finance, instead of by using interest-based borrowing. There are different types of development expenditures. Some of which are described as follows.

- 1- Infrastructure development, which consists of construction of dams, roads, bridges etc.
- 2- Maintenance and repair of infrastructure.

- 3- Provision of transportation for logistic support and for employees of government institutions
- 4- Purchase of office related stationary and equipments.
- 5- Construction and maintenance structures and buildings for government institutions.

Government of Pakistan is now rolling the public debt. It means that in order to return the previous loan, government has no option except to get the fresh loan. In order to roll over the public debt, government has to take different strategies for two main categories of public debt, which are external and domestic debt. Domestic debt further has three parts, which are unfunded debt, floating debt and permanent debt. Out of permanent debt, Pakistan Investment Bonds PIBs is the largest part. Out of unfunded debt, National Saving Schemes or NSSs is the largest part. It will be shown in this study that main beneficiaries of NSSs are savers and not government. It is true that these saving schemes were started by British government in sub continent to finance budget deficit but now these schemes have grown to such an enormous amount that interest paid exceeds the net accruals causing negative net gain to the government. It is in interest of the government to get rid of these types of schemes. Different types of Shariah compatible instruments to finance these expenditures can be described as follows.

5.1.1 Alternatives Based on Ijarah

Council of Islamic Ideology report (1980) presented leasing as one of the possible nine modes to make financial system Shariah compatible. Khan (1992) reviewed the

progress made in Pakistan for Islamization of its financial system, particularly with respect to sources and application of long term finance. He described lease and lease purchase as one of the six main applications of long term finance. State bank of Pakistan vide BCD Circular No. 13, dated 20th June, 1984 specified leasing as one of the twelve possible modes of finance to make financial system interest free. Akram (1992) enlisted leasing certificates as one of the eight instruments of long term finance.

5.1.1.1 Assets Ijarah Bonds (AIBs)

Kahf (1997) has presented the idea of *assets ijarah bonds (AIBs)*. Such bonds can be used by government as an alternative means of borrowing funds from the public based on leasing instruments. These bonds are easier to be used in open market operations of the Central Bank of an Islamic State as compared to both common stocks and *sanadat al muqaradah* (سندات المقارضة) or Debt Bonds under the assumption that an Islamic state's Central Bank does not use debt ridden bonds for its open market operations. Such ijarah bonds (AIBs) can be issued against assets leased to the government (both central and local) and may prove an Islamic economy's perfect substitutes of the prohibited treasury bonds.

5.1.1.2 Rent- Sharing Certificates (RSCs)

Zarqa (1997) proposed *rent- sharing certificates (RSCs)*, which are basically Ijarah (Leasing) based financial instruments. RSCs holders jointly share the ownership of an asset. Asset is rented to government and rent is proportionately shared by the

certificate holders. As rent sharing certificate is a fixed income debt instrument. It fulfills dual role when it protects the real value of the debt against inflation.

IIIE (1999) used the nomenclature “Asset Ijarah Securities” in view of the formal usage of “bonds” as borrowing instruments that help to create debt.

According to IIIE report, Leasing Based Instruments consist of following five instruments.

5.1.1.3 Simple Asset Ijarah Securities (AIS-SIM)

Against this title and lease agreement, say 1000 securities may be issued. These can be sold and bought in the market at any price determined due to market forces. Let owner of a land wants to sell its property for Rs one billion and government needs the same property. By selling these AISs, funds are transferred from public to owner of land, ownership transfers from landlord to public and usufruct transfers from public to government. Owner himself too can hold these securities along with other purchasers of securities. Now government pays rent to buyers of securities on the ground that buyers of securities are the actual owner of the asset and they have given this asset to government on lease. At the end of the contract, there are two possibilities. Government can either pay price of securities to public and becomes owner of land or a new contract is signed with new terms and conditions. Old securities holders can sell their securities to new investors and government starts to pay rent to new owners. This is same as rolling over the debt in conventional interest based system. If mobilization of funds is also involved in arranging the asset, then following two arrangements (following number 2 and number 3) would be applicable.

5.1.1.4 Asset Ijarah Securities Involving a Financial Intermediary (AIS-IFI)

Government may consult an Islamic bank for the Asset (as Land etc) required on rent. Bank may purchase the land and issues securities of equal denomination. Now rent paid by government each year will be divided equally against securities. Security holders will get rent according to total amount of securities which they are holding. Securities can be sold to institutions or to general public by issuing bank. While selling securities bank may aid its commission of issue in the price of each security. Like AIS-SIMs, these securities too can be bought and sold in the market at prices to be determined by market forces.

5.1.1.5 Asset Ijarah Securities-Issued by Government Itself-for a Third Party Acquiring an Asset and Leasing the Same to Government (AIS-GOV)

Here government issues Ijarah securities itself. Government can collect fund from buyers of securities. From the proceeds obtained by selling securities, government purchases the desired asset on behalf of the buyers of securities on Wakalah basis. Rent paid by government is disbursed among security holders on equal basis. When selling securities, government can aid its commission on selling to the price of the securities.

5.1.1.6 Transferable Ijarah Warrants with a Finance-Lease-Transfer Arrangement (TIW-FLT)

Government should first acquire from its own sources Land and feasibility report so

that there exists some real assets and possibility of usufruct. Government estimates total cost as cost of construction plus cost of maintenance for the period of lease. Cost of construction is charged in advance and cost of maintenance can be charged year by year, or government may call for Pledge Money, invest it and use profit for maintenance cost. Government can issue warrants of equal denomination for total cost or total amount to be collected. Each warrant represents equal right for usufruct. Right after completion of the project, lessee start to get benefits from the project. They cover total amount always paid by them to government plus some additional returns for the pre specified time horizon. Upon the expiry of time, asset will be handed over to the government. These warrants would be transferable in the open market at the market rates.

5.1.1.7 Transferable Ijarah Warrants with a Build-Lease-Transfer Arrangement (TIW-BLT)

This differs from TIW-FLT in one respect that financier (lessee would also develop the asset as Wakeel for the government. This will be substitute for standard Build-Operate-Lease (BOT) arrangement when ownership cannot be transferred to another party.

Government can device some additional Ijarah based certificates. These can be traced from the conventional Leasing based instruments used by different corporations now a days. With some modification these instruments can be made Shariah compatible. These are explained as follows.

5.1.1.8 Operating Ijarah Certificates (OICs)

In case of availing products like computer hardware, software, photocopying equipments and automobiles, government can ask the savers to provide operating Ijarah against Operating Ijarah certificates. These are short-term cancelable Ijarah contracts, which are cancelable at the option of the lessee with proper notice. Savers will become owner of the equipments or asset to be leased. Government will purchase this asset on behalf of the owner from the proceeds obtained from the sale of the certificates. Lease period is less than the economic life of the asset. At the expiry of the period government will have three options.

- 1- Hand over the depreciated asset to the owner. The owner or lesser takes possession of the asset and is entitled to any residual value associated with it
- 2- Sell it with owner's consent and hand over the proceeds to the owner.
- 3- Have another Ijarah contract at lower rate of return as asset is now depreciated one and less efficient
- 4- Purchase the asset at the expiration of the contract. The purchase price must not be lower than the fair market price.

5.1.1.9 Financial Ijarah certificates (FICs)

For some types of equipments, government may not be willing to return back the equipments to the lesser. For example radars used by aviation or equipments used by army. In this case government may issue financial Ijarah certificates. These certificates are longer term in nature and non cancelable. The lessee is obliged to pay lease payments until the lease expires. Period of lease generally corresponds to the

total or useful life of the asset. The payments have dual function. They amortize the cost of the asset as well as pay rent to the lesser. At the end of the contract asset has only its salvaged value. Contract may specify whether lessee will have the right to sell and use the proceeds from scrapped asset or return the proceeds to the lesser.

5.1.1.10 Leveraged Ijarah Certificates (LICs)

Sometimes government needs assets bearing heavy cost such as aircrafts, fighters, oilrigs, railway engines etc. In order to finance these types of assets, government can issue leveraged Ijarah certificates. In this type of Ijarah government actually consult some strong party who can provide finance adequately for the asset. At the same time government allows the party to have Musharkah contract with the general public. Government as a lessee is to do nothing but pay the periodic payments over the basic lease period. Against the payments made, government is entitled to the use of the asset over the period of time. In some assets where number of hours matter, such as aircrafts, contract may specify number of hours the asset is used instead of number of years passed.

Agency will purchase all the certificates from the government and will sell some of the certificates to those willing to participate in lease contract. So agency is involved in Musharkah contract with other participants. The agency will receive periodic payment from the Government and distribute among the equity participants.

Agency along with equity participants via Musharkah contract becomes the owner of the asset and is thus entitled to deduct all depreciation charges associated with the asset. From the point of view of agency, the cash flow pattern of the asset involves following cash inflow and out flows.

- 1- A cash outflow at the time asset is acquired which is the equity participation by all the participants via Musharkah contract.
- 2- A period of cash inflows in the form of periodic lease payments by the lessee.
- 3- A period of cash outflow in the form of payment to equity participants of Mudarbah contract.

If there is some residual value at the end of the lease period, it accrues to the agency. Agency can now distribute the residual value among participants of Musharkah contract according to pre decided terms and conditions.

Now a days a growing market of financial instruments consists of derivative securities. With proper modification these securities can be made Shariah compatible.

5.1.2 Alternatives Based on Musharkah

Musharkah has always been one of the most celebrated modes of finance among those searching for Shariah alternatives of interest-based system. Council of Islamic Ideology report (1980) presented Musharkah too as one of the possible nine modes to make financial system Shariah compatible. Similarly Khan (1992), State bank of Pakistan (1984) and Akram (1992) described Musharkah as one of the possible Shariah instruments as an alternative of interest-based system. Akram (1992) has mentioned different forms of Musharkah as Mutual Funds Certificates, Investment Trusts and Profit Loss Sharing Investment Schemes. He further described that ICP already has a “State Enterprise Mutual Fund”, which is a form of Musharkah.

Siddiqui (1997) has presented role of Islamic financial instruments in financing infrastructure building. He has categorized Islamic financial instruments into two

groups i.e., Sharing Based Instruments and Instruments Yielding Predetermined Returns. According to him Participation Term Certificates launched by Investment Corporation of Pakistan (ICP) can prove a good substitute for interest-based instruments to finance budget deficit.

He further described that in Iran, **Participation Bonds (PBs)** were issued. These bonds were issued by Tehran Municipality, Iran in September, 1994. Purpose of these bonds was to finance a project about reconstruction of Navab Highway. These bonds were negotiable and could be transacted through Tehran Stock Exchange. Bank Mili (Central Bank of Iran) was the agent responsible for floating this bond as an underwriter.

Sudan introduced Central Bank Musharkah Certificate (CMCs). These were equity based instruments and were issued against the ownership of central bank in the commercial banks. These bonds can be used as an instrument of monetary policy and can be used to regulate domestic liquidity through open market operations.

In 1999 IIE issued a blueprint of Islamic financial system. According to IIE blueprint Musharkah is the only Partnership-Based Instrument and it consists of following three types.

5.1.2.1 General Musharkah Certificates (GMCs)

In order to float GMCs, Government can establish a mutual fund. In Pakistan, we already have such a fund known as National Investment Trust (NIT). Capital collected by the Fund established by government can be utilized for the public sector projects. These projects may be in transport, energy or education sectors etc. Examples of these

projects may be thermal power plants, hospitals, bridges, colleges etc. These projects will generate income, which will be returns on GMCs. In order to sell GMCs, Government allocates some seed money,. This money will be used to generate some assets. Once assets have been generated, government then sell GMCs. Profits earned can be distributed among certificate holders on proportionate basis. These certificates are tradable in open market.

5.1.2.2 Decreasing-Partnership or Redeemable Musharkah Certificates (RMCs)

Government invites others to put money through RMCs of equal denomination with the condition that over time government will buy out stakes of other parties in a phased manner. When government pays an equal payment to all certificate holders then denomination would be reduced accordingly. Certificate holders can trade the certificate in open market.

5.1.2.3 Special Musharkah certificates against Existing Public Sector Undertakings (SMC-EPSUs)

Government can float SMCs towards the Management-Cum-Maintenance of selected public sector undertakings that generate income flows such as Pakistan Steel Mills or Pakistan Post Office etc. There should be no rational earnings and profits will be distributed among shareholders and government. These certificated resemble shares and can be traded in the secondary market.

In addition to Interest free Sukuk and other types of trade based, leasing based and investment type instruments, government can finance its expenditures by offering interest free options, which can be treated as interest free derivative securities. Three specific types of interest free options can be stated as follows.

5.1.2.4 Musharkah Convertible Certificates (MCCs)

Sometimes finance is required for some part of the business and Musharkah participation is not required at the same time. For example PIA may need automobiles and may not want at the same time to issue shares in order to avoid dilution of equity and assets. Under such type of circumstances government may issue Musharkah convertible certificates. Government will issue MCCs and expect them to be converted in the future.

By issuing a convertible certificate instead of Musharkah certificates of the business entity, government will create less dilution in earning per Musharkah certificate both now and in the future. As conversion price is higher than price of a Musharkah certificate, so government gets more financing without dilution of equity and assets. By getting MCCs people or savers will get an opportunity to earn return by entering in a part on the corporation and on the other hand they will get the option to become business partner by converting MCCs into Musharkah certificates of the company similar to common stock. Investors can convert MCCs at any time into Musharkah certificates. In this case investors' share in the part of the business (in this case leasing the vehicles) will decrease and now they will share in the overall business. Investors will decide to for conversion according to the return they are getting from MCCs and from profit, which could be earned from the Musharkah certificates.

Corporation can stimulate conversion after any desirable period by increasing return on Musharkah certificates which could be by using any accounting technique such as by decreasing retained earnings or allowing cash inflows by selling some of the depreciated assets etc. It is worth mentioning that MCCs are tradable in the market. Price of MC depends on the expected return from the project and risk of the return from the project, which in our example is leasing of vehicles to PIA.

5.1.2.5 Musharkah Exchangeable Certificates (MECs)

Government has different corporations, such as Pakistan Telephone Corporation (PTCL), Pakistan International Airlines (PIA), Oil and Gas development Corporation (OGDC) etc. Investors may be willing to become partner in one corporation while government may desire to get finance for another corporation. Under such type of circumstances, government may issue Musharkah exchangeable certificates. By purchasing MECs investors become partner in a corporation. According to the level of investment the investor may be given voting rights and also allowed to give suggestions to run business according to their own business expertise if any.

Government off course has share in all the government owned enterprises and most often this share is more than fifty percent. So government can easily issue Musharkah exchangeable certificates. Further research is required to study Shariah position about issuance of certificates without permission of all the partners in the project or business.

A recent development in the market of Shariah compatible instruments to finance Government expenditures is the issuance of Sukuk. Sukuk are described as follows.

5.1.2.6 Musharkah Sukuk with Put Option (MSPOs)

Government can issue such types of Sukuk against that public sector infrastructure which has capacity to generate income such as roads and bridges. As an example, government can sell motorway. If we assume that one-kilometer of motorway cost Rs 100 million. It will mean a 100-kilometer sect can be sold against Rs 10 billion. Now toll collected for this part will be calculated. Government will announce its share in toll as it is providing services to collect the toll. Rest of the toll will be divided among Sukuk holders. This type of Sukuk may be offered with put options, meaning that Sukuk can be sold back to the government on the specified terms and conditions. These types of Sukuk are tradable and return on them is not fixed. Government has already offered somewhat similar Sukuk in international market. But these Sukuk have fixed return and also are not available for general public. General public can buy National Savings Schemes and Sukuk may be offered to people as a substitute for interest based NSSs.

5.1.3 Alternatives Based on Mudarbah

Council of Islamic Ideology report (1980) presented Mudarbah too as one of the possible nine modes to make financial system Shariah compatible. Similarly Khan (1981), State bank of Pakistan (1984), and Akram (1992) described Mudarbah too as one of the possible Shariah instruments and as an alternative of interest-based system. Sudan introduced Government Mudarbah Certificate (GMCs). These certificates were issued through financial intermediaries. Islamic banks and other financial banks may purchase the certificates with the amount accumulated in their investment accounts of

insurance premiums etc. Government uses the amount in different public sector projects. Returns are disbursed according to the profit generated by the projects. These certificates may be of two types. First type has a certain maturity date. At the expiry of the date, government buy back the certificates and may resale to the same or another client. Second type has no maturity date and so is a type of perpetuity. Government need not to roll over the debt in this type of corticated. These certificate4s may be issued against the projects which are expected to yield the returns for ever. Both types of certificates may also be resalable in open market making it possible to earn capital gain along with the normal return.

5.1.4 Alternatives Based on Bai Muajjal

CII report (1980), SBP (1984) and IIIE (1999) suggested bai muajjal as an Islamic mode of finance. But it is difficult to find practical examples of bau muajjal. IIIE (1999) suggested bai'mu'ajjal-based tradable securities: These are derivatives of Bai-Muajjal. Government can purchase the desired goods and issue securities to pay price of goods in installments. These securities can be transferable.

5.1.5 Alternatives Based on Bai Salam

Literature on Islamic instruments of finance is short on this instrument. Fahim (1997) has mentioned that Salam contract has a large potential to develop Islamic future markets on the basis of the concept of "parallel Salam." Since the price is paid in advance, the Salam based Islamic future could be instrumental in developing Islamic future markets while at the same time avoiding the problem of speculation which is

largely due to deferment of price in the conventional future markets.

ElGari (1997) suggested Salam Certificates as a short –term financial instrument. He argued that this type of certificates can fulfill financial need of the government in short run period. Certificates may be issued for three or six months.

Salam certificates suggested by him are described as follows.

5.1.5.1 Salam Certificates (SCs)

Government may issue Salam Certificate (SCs) with clearly defined and mention commodity (with quantity and quality) and date of delivery in the future. Proceed of SCs will be used by the government over the period defined. Government can either directly sell the certificate or can involve a financial intermediary in the process. Buyer of the certificate can either hold the certificate till maturity or can sell it in open market in case he is in need of immediate cash or in case he has an opportunity to earn capital gain.

IIIE (1999) suggested use of Salam certificates: Government can issue several lots of Salam certificates each one represents delivery of a specific quantity of a certain commodity such as natural oil on the prescribed date at a price to be negotiated at the time of their sale. These certificates can be sold to public at the stated prices. These certificates may be transferable with two conditions. (a) Principle of Khiyar (i.e., right to claim refund from immediate seller). (b) The original seller's consent for transferability of collection rights to another buyer.

Another suggested way to get finance by using bai salam is as follows.

5.1.5.2 Salam Embedded Musharkah Warrants (SEMWs)

Sometimes government needs finance for a project, which can provide utilities in the future, for example exploring oil and gas or constructing dam for electricity generation. Government can invite investors to come and finance the project on Musharkah basis with the Government. These Musharkah certificates issued for the project can be made attractive by offering Bai Salam warrants along with the Certificates. A warrant will provide the option to purchase specific number of units of the utility such as oil, gas or electricity etc for a specified period often lasting for years and sometimes in perpetuity. The price at which units of utility associated with the warrants can be purchased is the exercise price.

5.1.6 Alternatives Based on Bai Istisna

Bai istisna is one of the Islamic instruments least used practically as an alternative of interest based instruments. SBP (1984) described Istisna as one of the twelve suggested modes of finances as alternatives to interest based instruments. Zarqa (1997) suggested **Istisna certificates (ICs)** which aim at enabling Islamic governments to finance social infrastructure. Development of social structure is basically responsibility of the government. Social infrastructures include schools, hospitals, bridges, road links etc., which cannot be financed by the private sector. Financing such projects is in the core of budget deficit in many countries. The only alternative in such a case is to resort to deferred sale by issuing certificate know as Deferred Price Certificates described as follows.

5.1.6.1 Deferred Price Certificates (DPCs)

Total debt generated by deferred sale or Istisna can be owned by many investors as deferred price certificates (DPCs) The value of deferred price certificates comprise of the principal plus profit margin for the delay of price in the Istisna sale. DPCs are not liquid assets. These certificates can only be exchanged for cash on their face value and subject to hawala al dyin. The liquidity problem of DPCs would be overcome by purchasing against them goods and services. DPCs can be of different maturity to avoid the adverse impact of the long run DPCs, such DPCs may be based either on a stable currency or a composite standard of value.

IIIE (1999) suggested Istisna'-Cum-Staggered Payment Arrangement: These are derivatives of Bai Salam. It is also discussed in Fiqh literature as Bai' Istisna which is manufacturing and delivery of a thing with the payment made in advance. This arrangement does not give rise to a tradable instrument.

5.1.7 Alternatives Based on Bai Juala

Fahim (1997) proposed that various services including social, educational, community or environmental services can be supplied on the basis of Bai Juala contract. Government may sell Juala Certificates (JCs) as a promise to pay services in the future against the payment made on spot. An interesting field may be mineral exploration. Government may collect financial resources on the basis of JCs and may use proceeds to develop mineral exploration sector. In the future certificate holders will have right to use physical resources (equipment, machinery, infrastructure) of government to explore the minerals in specified area for specified time period.

5.1.8 Shariah Compatible Sukuk

Since 2001, a new financial market has been emerging known as Sukuk market. A number of countries have issued Sukuk since then. Sukuk are issued against the physical assets of the government. Government sells the assets to the purchaser of the Sukuk. Then government pays regular rent on the usage of the asset. Accounting and Auditing Organization for Islamic Financial Institutions” (AAOIFI) issued a list of sixteen different types of Sukuk in November 2002. Some of the types include embedded Sukuk, Zero-coupon non-tradable Sukuk, variable rate redeemable Sukuk, hybrid/pooled Sukuk and pure Ijarah Sukuk. Some examples of Sukuk are given as below.

Department of Civil Aviation (DCA) in United Arab Emirates (UAE) issued Sukuk worth \$ 750 billion against Dubai International Airport. These Sukuk were purchased by Dubai Islamic bank. Proceeds of the Sukuk were utilized for expansion of the airport.

Government of Pakistan entered Sukuk market in February 2005. Government formed Pakistan International Sukuk Company Ltd. (PISCL) to float Sukuk. Sukuk worth 1.2 billion dollar were floated but half of them were accepted. These Sukuk were the fifth one out of the Sukuk offered on international/global level. Rate or return was approximately 5%. These Sukuk were redeemed in 2010 and were issued against the ownership of Islamabad Lahore motorway (M2). This part of motor way is administered by public sector National Highway Authority (NHA).

Water and power development authority (WAPDA) of Pakistan issued Sukuk worth

eight billion rupees in October 2005. These were seven years maturity Sukuk and matured in October 2012. This was the first time that Sukuk were offered in domestic market in Pakistan. These Sukuk earned return out of the electricity payment.

Further different types of Shariah compatible Sukuk can be introduced according to the requirements of the projects to be financed. For example, a Sukuk based on leasing is described as follows.

5.1.8.1 Leasing Based Mudarbah Sukuk (LBMS)

This type of sukuk may consist of both Mudarbah and leasing options embedded in it. Government can establish an agency, which may function on Mudarbah based contracts with savers. On the other hand, this agency may fulfill government's requirements on leasing bases.

We can illustrate this type of sukuk with the help of an example, in which government need transportation facility for some of its institutes. Agency will issue sukuk of equal denominations clearly mentioning specification of vehicle and its price. Certificate holder will become partner in ownership. Agency will collect funds from savers and purchase the vehicle. Now this vehicle will be handed over to the government on lease against monthly/yearly payment. Agency will calculate the depreciation cost for one month/year and thus calculate the profit incurring. Agency can now keep with itself a predetermined ratio/ percentage of the profit and distribute rest of the profit among the certificate holders.

Now a problem raises here about use of the "depreciation amount." Agency can disclose the situation onto the participants that "value of assets of the project" or in

other words “amount invested in project” has decreased. If depositors wish then “accumulated depreciation amount” can be invested in some other project or otherwise it can be returned back to certificate holders (i.e., depositors). It would be like retiring a part of the debt in the sense if these certificates were interest based saving certificates like NSSs.

5.2 SOME OTHER AVENUES FOR RESOURCE MOBILIZATION

Along with the Shariah compatible instruments to finance government expenditures, we may seek for other avenues also. This is very briefly discussed as follows.

5.2.1 Resource Mobilization by Islamic Banks

A Shariah compatible way of resource mobilization for government can be inviting Islamic banks to finance government projects. Examples of Islamic banks in Pakistan include Bahrain based Al-baraka Bank which started its operation in Pakistan in 1991 and Meezan Bank Which was granted full-fledged license by SBP in January 2002. These types of banks can fulfill requirements of savers for stable return on constant intervals. But at least at the moment, they are not providing solution for government borrowing needs. Although Albaraka Bank launched some public sector projects in Arab countries and Turkey but no such project is ever started in Pakistan. Just for an example, few public sector projects started by this Islamic bank are briefly enlisted here.

1. Bank started Fiber Optic communication link around the Arabian Gulf (FLAG) in 1991. It was huge one and half billion dollars public sector project.

2. Bank financed seventeen million dollars worth of buses for Turkish municipality in 1994. Bank directly purchased the buses from manufacturer and leased the same to Turkish municipality under four years lease agreement.
3. Bank use same lease arrangement to finance Tender Assisted Drilling Barge (TADB) worth thirty million dollars. It was to be used in oil drilling task.

Public sector projects may be handed over to Islamic banks. Banks will receive profit, rent or any combination of Shariah compatible return instead of interest rate from the government.

5.2.2 Resource Mobilization through Investment Funds

An investment fund is a diversified portfolio of stocks, bonds, other securities and investments, run by professional managers. The assets of each investment fund are divided equally into smaller units. When the fund starts these units have equal nominal value the total of which represent the Net Asset Value (NAV) of the fund.

El Gari (1997) mentioned the relevance of investment funds both in terms of their relative consistency with the Islamic financial principals as well as in terms of the effectiveness in offering attractive investment opportunities and encouraging savings. Such funds can also be linked to infrastructure projects, which generate revenues, for example for a city sewerage scheme. He, however, suggests that some compromise is needed between the rules underlying mudarbah and the conventional investment funds to make investment funds as a pure Islamic vehicle for resource mobilization.

Some features of existing funds such as guaranteed return for investors and composition and base of assets in the fund are inconsistent with the Islamic principal

of financing. On the other hand, for distribution of profit of investment funds as ongoing concerns, the principle of “constructive liquidation” which some Shariah scholars approve as a substitute to actual liquidation, need to be embraced

It has been estimated that in the more developed or developing countries an investment equal to 5% to 7% of GDP is needed for infrastructure projects. Nevertheless many infra structural projects can pay for themselves through user fees, if construction cost can be made available by the private sector. In many countries this is done through loans extended by the banking sector to local or central government. The funds are then used to build these projects and paid back from government revenues, which is mainly coming from taxes and levies.

5.2.3 Resource Mobilization through PSEs

Another popular source of income for government during and after 90's has been privatization of public sector enterprises, such as PIA OGDC, PTCL and UBL etc. but privatization proceeds from any particular enterprise prove a source of revenue only in the year of privatization. A question rises about the reason for an enterprise to become profitable after privatization. The answer lies in principle agent problem. Administration of the enterprise is the agent. The agent gets the salary and has no concern with the profit. If government announces a certain percentage of profit for the administration, the enterprise may become profitable. This type of privilege for the administration is not a strange thing. As we know PIA staff is given handsome concession in fair for themselves and their families. All the staff of WAPDA gets free electricity for their houses. Yet as another example, army officers are not entitled to

toll tax or house tax all over the country irrespective of how much precious their car or house is.

By solving the principle agent problem in government enterprise, government will save the subsidies given each year to these enterprises. Also, profit generated by these enterprises will prove a source to finance budget expenditures.

5.2.4 Resource Mobilization through Reforms in Taxation System of Local Governments

Still another way is to think of the working of provincial and district government. There are seventy-three districts in Pakistan. Each district has four or five Tehsil. There are about 350 Tehsils in 73 districts. Some districts have cantonments. Overall there are 32 cantonments in Pakistan. Federal government does not maintain record of budgets of Tehsils.

Most of the districts and cantonments can prove a source to earn revenue for the federal government. For just an examples budget of Tehsil Rawalpindi was surplus by Rs 145 during year 2021-22. This amount has been adjusted by TMA Rawalpindi for the next year's budget (2022-23). Similar is the case of Capital Development Authority. Revenues for the fiscal year 2021-22 were 156.353 billion rupees, expenditures were 82.550 billion rupees and so budget was surplus by an amount of 73.803 billion rupees.

Federal government can maintain record of budgets of all Tehsils, districts and provinces. Federal government can then distribute the revenue among district governments according to some formula. Corruption in district government is not a

hidden problem at all. If government manages to handle revenue of district governments by some central authority, it would not only eliminate wastage of resources by corruption but also fulfill one of the objectives of taxation, which is to make income distribution more even. Normal Practice which is prevailing is that all revenue earned within a specific district is consumed within that same district. In this way underdeveloped districts have fewer opportunities to start development projects. More over when each district tries to collect taxes on its own, a lot of resources are wasted during tax collection.

Government must also take care of the fact that too high a tax rate can decrease total tax revenue instead of increasing it, as is explained by “Laffer curve.” It’s quite possible that just by restructuring the taxation system government comes up with more revenue to finance its expenditures.

5.2.5 Resource Mobilization through Mines & Minerals

Pakistan has reserves of 92 types of minerals. Out of which three minerals i.e., Gas, Oil and Uranium are owned by Federal government irrespective of the province of these three minerals extraction. While rest of the 89 minerals belong to the province from where they are extracted. Mines and Minerals are controlled by Pakistan Mineral Development Corporation (PMDC) under ministry of Petroleum and Natural Resources. Unfortunately, only 50 minerals are being exploited on commercial basis. In October 2021, Prime Minister announced a plan to take radical and innovative measure for exploiting and uplifting the minerals sectors. All the stake holders including provisional governments were included in the plan. Due to political unrest nothing could be done in this regard.

Minerals other than Oil, Gas and Uranium are handled by provinces. So each province further has its own minerals development department. There are vast reserves of iron and **coal** in Pakistan. Most of the reserves in Balochistan and Sindh have been explored and are being utilized.

5.2.5.1 Punjab

In Punjab 35 minerals are notified, out of which only 20 are being extracted. Major minerals which are being extracted include coal, iron ore, limestone, gypsum and bauxite. Minor minerals include ordinary sand, sandstone and sand gravels. Surface Minerals are also extracted and these include fireclay, silica sand and bauxite etc.

5.2.5.2 Sindh

Minerals Found in Sindh are presented in tabulated form as follows.

Table 5.1: Minerals found in Sindh

<u>ID</u>	<u>Name</u>	<u>Location</u>	<u>Usage</u>
1	Granite	Nagarparkar	Decorative stone
2	Marble	Thatta and Jamshoro	Buildings, decorative stone and handicraft
3	Lime Stone	Khairpur, Dadu, Jamshoro, larkana, Sukkur, Hyderabad, Thatta & Karachi	Construction stone, cement, steel mill, Chemical and Sugar Industries, Filter
4	China Clay	Tharparkar	Ceramic industries, white cement, rubber & Chemicals
5	Coal	Jamshoro, Thatta, Badin and Tharparkar	Electricity, Coal briquettes, Gasification & Bricks Kilns
6	Lake Salt	Khairpur, Sanghar, Dadu & Tharparkar	Table salt, fisheries and chemicals
7	Bentonite	Karachi & Jamshoro, Thatta	Oil drilling and filtering, cosmetics, textile, fungicides

8	Chalk	Jamshoro & Thatta	Paint, cement, glass
9	Celistite	Jamshoro	Paints, rockets, medicines
10	Dolomite	Jamshoro & Thatta	Glass, Steel mill, Pigmentst
11	Fullers Earth	Hyderabad, Dadu, Sukkur , Khairpur	Oil Refining, discoloration & cosmetic
12	Gravel	Karachi, Sukkur Jamshoro	Building and road material
13	Gypsum	Jamshoro, Sanghar, Tharparkar	Cement, soil fertilizer, white pigments, plaster of paris
14	Laterite	Jamshoro , Thatta	Pigments, colours, cement
15	Mouram	Karachi, Jamshoro , Thatta	For road construction
16	Ordinary Sand	Entire province of Sindh	Buildings & road construction
17	Quartzite Sand Stone	Thatta , Dadu	Sand brick and grinding purposes
18	Red Ocher	Jamshoro , Thatta	Pigments, colours, cement
19	Shale Clay and Clay	Jamshoro , Thatta	Cement factories
20	Silica sand	Jamshoro, Thatta , Karachi	Glass manufacturing and chemicals
21	Trona	Khairpur, Shaheed Benazirabad,	Chemicals, industries & detergent

5.2.5.3 Balochistan

Balochistan has highest number of mineral in approaching to 80 minerals in the province. This province has large proven reserves of indigenous copper (associated some silver, gold, molybdenum), iron, lead, zinc, barite, gypsum, chromite, coal, limestone (marble) , silica sand, ochre etc. It has some other minerals too with small deposits of sulphur, antimony, asbestos, celestite, soapstone, fluorite, magnesite, vermiculite, etc.

Chaghi district has huge deposits of Sulfur and Onyx marble. Other regions such as Julil, Mashkicha and Butuk have 37 million tons of marble reserves. Koh-i-Sultan has

more than 50 million tons of Sulfur. Chagai and Lasbela have more than 26 million tons of Zinc and lead ore.

Pakistan is producing five million tons of Barite and is thought to be the largest producer of this mineral in the world. Only one district Khuzdar of Balochistan is producing nearly 1.7 million tons of Barite. Muslimbagh-Killa Saifullah districts and Khuzdar-Pishin districts produce half a million tons of chromium ore annually and this production is being continued for previous 100 years. Huge deposits of Chromite are found in Zhob, Khuzdar, Bela, and Dalbandin.

Titanium is a precious metal. It is used to prepare important alloys which are then used in various industries. Due to its hardness it is useful for military and civil aircraft, missiles, rocket, and electric generating plants. Ziarat district too has reserves of Titanium.

Coal reserves are found in Sarrange, Degari, Sinjidi, Mach, Pir Ismael, Abegum, Ziarat, Duki, Sharigh-Harnai, and Chamalang. Coal reserves are estimated to be 217million tons in these districts. Huge deposits of Gypsum are found in Sibi, Kohlu, Barkan, and Loralai districts. Muslimbagh and Zhob districts have Nickle ore. The ore has 0.85% of Nickle meaning than ten tons of ore gives 85 Kg of Nickel, which is economically profitable. Amalaf area in Chagai district have Tungsten Ore with molybdenum and Tin.

5.2.5.4 Khyber Pakhtunkhwa

FATA and Khyber Pakhtunkhwa is the second richest province in mineral resources after Balochistan. Hindukush-Karakoram block in KPK contains deposits of gold,

antimony, arsenic, polymetallic sulphides, radioactive minerals, sheelite, coal, dolomite/ limestone/ marble, graphite, , arsenic and gemstones (tourmaline, aquamarine, topaz, ruby, garnet, spinel, pargasite, epidote etc). Northern Kohistan terrain has anomalous traces of zinc, copper, lead, antimony and gold. Some other deposits consist of fluorite, chromite, platinum, realgar, mica, graphite and talc.

Northern Indus has deposits of magnesite, asbestos, chromite, serpentine, peridot, emerald, talc, soapstone, iron and platinum group of minerals including gold. Western Indus Suture has deposits fluorite, asbestos, chromite, copper, lead-zinc, magnesite, manganese, iron, soapstone and talc, platinum, nickel and serpentine.

High metamorphic Khyber-Hazara Zone has deposits of galena, beryl, feldspar, fluorite, graphite, magnetite, magnesite, garnet, marble, quartz, talc, sheelite, and gemstones. The gemstones include ruby, aquamarine, moonstone, pink topaz, peridot, garnet, spessartine and tourmaline.

Low metamorphic Khyber-Hazara Zone has deposits of marble, phosphate, soapstone, quartzite, gypsum, coal, iron, manganese etc. The southern part of Khyber Pakhtunkhwa and FATA has deposits of coal, bauxite/laterite, bentonite, clays, fuller's earth, fire clay, glass sand, iron ore, gypsum and anhydrite, ochre, lead-zinc ores, limestone/dolomite, manganese, shale and sandstone, gravel, potash salts, oil and gas, oil shale, rock salt, radioactive minerals, phosphate, and Sulphur.

5.3 METHOD TO SWITCH OVER TO ALTERNATIVE SYSTEM

In the conventional economics, there are three methods to switch over to a new system.

- 1- Phased manner: In this method, system is changed step by step. Different phases to change the system are designed and implemented one by one.
- 2- Pilot Project: In this method, old system is completely abolished and new system is implemented immediately.
- 3- Parallel System: In this method, new system is run parallel to the old system. Both systems keep on functioning at the same time in the economy.

In Pakistan all of these three methods have been practiced. In the report of Council of Islamic Ideology in June 1980, Council recommended that elimination of interest from domestic transactions should be taken in three clearly defined phases with specific time schedules making each phase effective from 1st July, 1980, 1st July, 1981, and 1st January, 1982, respectively. Phased manner failed and government started parallel system but It was announced in 1984, that the parallel system, in which savers were free to choose either interest bearing or PLS deposits, would be ended till period 1984-85.

From 1985, for all banking companies, it was prohibited to accept any interest bearing deposits except foreign currency deposits. In other words government announced for pilot project to be effective from 1985. But this to failed and system could not be completely Islamized to date.

Presenting Shariah alternatives of public debt would mean immediately shifting to interest free system by converting interest based schemes to their Shariah alternatives.

5.4 CONCLUDING REMARKS

Debt burden is increasing day-by-day, resulting more debt servicing required each year. We have seen in this chapter that Pakistan Investment Bonds are the largest component of permanent debt and National Saving Schemes are the largest component of unfunded Debt. Government is launching these schemes now just for the sake of savers. Maturity, rate of interest and mode of interest payment on each of these certificates and accounts is different in order to give maximum flexibility to savers according to their day to day, short term and long term financial needs. These schemes, their maturity period and mode of interest payment is described as follows

Table 5.2: Maturity and Mode of Interest Payment on National Savings Schemes

Scheme/Account	Maturity	Interest Payment
Saving Schemes:		
DSC	10 Years	After 10 years
SSC	3 Years	After 6 Months
RIC	5 Years	Monthly
BSC	10 Years	Monthly
Saving Accounts		
SSA	3 Years	After 6 Months
MAA	Perpetuity	Monthly
SA	Not Applicable	After 6 Months
PBA	10 Years	Monthly

It would be better for the government to provide savers some other opportunities in real and financial sector. Some instruments can be devised which can fulfill requirements of both the savers and the government. Contemporary literature is short in this respect. Some Islamic instruments in contemporary literature, which can prove Shariah compatible alternative for NSSs, along with some other Shariah

compatible instruments, which could be devised, are discussed in present chapter. These alternatives must have one or more of the mode of finance, described in Shariah, as their base. These instruments can take place of NSSs. So government can get rid of heavy debt burden. Some of the important alternatives along with their base in Shariah are described as follows.

Table 5.3: Shariah Alternatives of National Savings Schemes

Alternative	Based on Mode	Presented By
AIBs	Ijarah	Kahf (1997)
RSCs	Ijarah	Zarqa (1997)
AIS-SIM	Ijarah	IIIE (1999)
AIS-IFI	Ijarah	IIIE (1999)
AIS-GOV	Ijarah	IIIE (1999)
TIW-FLT	Ijarah	IIIE (1999)
TIW-BLT	Ijarah	IIIE (1999)
OICs	Ijarah	This Study
FICs	Ijarah	This Study
LICs	Ijarah	This Study
PBs	Musharkah	Iran (1994)
CMCs	Musharkah	Sudan (1994)
GMCs	Musharkah	IIIE (1999)
RMCs	Musharkah	IIIE (1999)
SMC-EPSUs	Musharkah	IIIE (1999)
MCCs	Musharkah	This Study
MECs	Musharkah	This Study
MSPOs	Musharkah	This Study
GMCs	Mudabah	Sudan
SCs	Salam	ElGari (1997)
SEMWs	Salam and Musharkah	This Study

Still other avenues can be discovered for resource mobilization. Examples of such avenues are resource mobilization by Islamic banks, through energy sector, by solving principal-agent problem in government enterprises and resource mobilization through reforms in taxation system of local government.

Corruption in developing countries is a serious problem, which causes wastage of resources for the government. It hinders the development of the country. Also, taxation system prevailing at three governmental levels (i.e., federal, provincial and local governments) needs to be reformed. All these changes will require formulation of government's fiscal and monetary policies in somewhat different way. Macroeconomic targets such as allocation of resources, distribution of income and poverty eradication would also be affected. This is discussed briefly in the next chapter.

CHAPTER 6

POLICY IMPLICATIONS AND CONCLUSION

We have discussed three aspects of public debt in this study. First one is the impact of public debt on macroeconomic variables. Second one about Shariah alternatives of public debt and third one is about other avenues (as alternatives to public debt) to finance government expenditures.

According to prevalent theories of public debt, we have two contradictory views. One view is that public debt may help in enhancing development expenditure, causes crowding in of private investment by safeguarding equity side of balance sheets of commercial banks and thus have a positive impact on GDP of the country. Other view is that public debt causes crowding out of investment as banks have less incentive to invest in risky projects when they are supported in the form of heavy interest payment on the debt given to them by the government. Another argument in favour of crowding out of investment is that as per loanable fund theory, when government borrows from public then less funds are left for investment and therefore investment declines. In the long run debt servicing on public debt may cause less resources for development projects and so public debt has negative impact on GDP of the country.

Our data analysis supports the second view and we find out that public debt in Pakistan has negative impact on both GDP and GNP. Pakistan is facing debt overhang problem. Due to debt servicing of previous public debt, less resources are left for development expenditures. It causes low growth rate of GDP. It results in less tax revenue, which further makes it difficult to allocate resources for debt servicing of previous public debt. The circle keeps on going and may result in default at government level.

Government need to take policy measures to tackle debt overhang phenomenon. In 2005, Fiscal Responsibility and Debt Limitation (FRDL) Act was passed. It was implemented on 13th June, 2005. According to this act public debt to GDP ratio should not exceed by 60% in year 2013. Qasim and Khalid (2012) have critically evaluated this act. Authors have pointed out shortcomings in the act. Latter on an amendment was made as a part of finance bill in the act in year 2016. New targets were set to reduce public debt to GDP ratio to 60% by the year 2019 and that it should not exceed by 50% in year 2033. Public debt to GDP ratio was required to be reduced year by year. The FRDL Act and its amendment were meant to avoid debt overhang effect in the country. Even this amendment could not work and public debt to GDP ratio was 69.9% in June 2020.

6.1 Shariah Alternatives

A lot of efforts have been made to Islamize the bank deposits specially time deposits of the commercial banks. But nothing has been done so far to Islamize the public debt instruments of Pakistan. In this study, we tried to explore the nature of debt instruments and then to first analyze their costs and benefits for all those who are directly or indirectly concerned with them and then to find out the ways to eliminate interest from these instruments. We may also discuss effect of elimination of interest from these instruments on the economy and formulation of fiscal and monetary policies is discussed in brief.

An effective way to avoid huge debt servicing can be the Shariah Alternatives of public debt instruments. Return on these instruments is not fixed. Return varies with the economic conditions in the country. Moreover Shariah alternatives are a deterrent

for the misuse of the proceeds of public debt. It becomes impossible to deposit domestic or external debt proceeds in personal accounts through techniques like over-invoicing (of imports), under invoicing (of Exports) or money laundering. When we change mode of financing of government expenditures, it will have its effect on formulation of fiscal policy, monetary policy and income distribution.

It seems that Pakistan has been sacrificing long run benefits for the sake of short run political benefits by accumulating interest based public debt. This accumulation of debt has continuously been experienced in Pakistan for previous 75 years. Domestic debt has increased to an enormous amount and debt servicing is now taking huge share from tax revenue to pay for interest on domestic debt.

Take an example on only one instrument of public debt, i.e., National Saving Schemes. Although we have positive figure of net accruals of NSSs but after paying for the interest on the outstanding NSSs, we are left with minute or even negative amount at hand to fulfill our expenditures. Islamization the debt instruments will cause benefits to the government as well as to the general public at the cost of no body. Small savers seem to be the only group being affected due to non-payment of fixed return on the instruments they are holding. This segment of middle-income class is reluctant in investing in real sector due to high fixed cost and risk. This problem can be solved if government takes step to reduce risk of loss in investment in real sector by giving relaxation for few initial months and relaxation in high commercial rates of utility bills. Also if government welfare institutes are to help people in case of need, they won't need to worry about fixed returns on their savings and would be happy to invest in the real business.

Abolishing NSSs will mean that the amount being paid in interest would be available for our development projects. It seems that in the case of NSSs, government and general public both are at a disadvantage while savers who have deposited their amount in the NSSs or other debt instruments are the only beneficiaries. These savers can switch over to other types of alternatives such as those presented by Islamic commercial banks. This switch over will bring Pareto optimality, as it will cause benefit to the overall economy without harming any of the beneficiaries of the Economy.

6.2 Inflation, Monetary Policy and Shariah Alternatives

One of the reasons for demanding interest rate and investing in debt instruments is to guard oneself against inflation. Curtailing possibilities of inflation and then reducing it would prove helpful in Islamizing the debt instruments. Debt instruments are a source of financing budget deficit, which reduces the need of deficit finance (currency printing) and it further reduces chance of inflation.

The curtail of inflation will also be consistent with spirit of Islam as described by Laliwala(1978). He has made an empirical inquiry into the inflation phenomena experienced in 10 Muslim countries including Pakistan. He concludes that growth of money supply significantly explains the general price rise and it clearly projects inflation as a monetary phenomenon. So deficit finance (currency printing), which collects resources mainly by creating inflation and which is a tax on the poor people, is inconsistent with the spirit of Islam. From savers' perspective a zero rate of inflation reduces the need for a necessary return as a protection against inflation rate.

Central banks Open Market Operations seriously affect the rate of return and sale of debt instruments. If we are trying to Islamize debt instruments, we should also take care of the activities of central bank too as has been described by Uzair (1978). He has compared the role of central bank in secular system to the Islamic system and then has given mechanism of central banking in an Islamic economy.

Ariff (1978) describes that interest element is not an indispensable macroeconomic policy instrument and that some of the policy prescriptions may become redundant in Islamic set-up. Choudhury and Mirakhor (1997) emphasized indirect instruments of monetary control rather direct instruments in an interest free environment of an Islamic economy. They compared the advantages and disadvantages of the two sets of instruments on monetary control for developing countries and it is argued that the weakness of direct instruments are the points of strength of the otherwise complex indirect instruments. In addition direct instruments are said to promote capital markets.

Presently government announces interest rate by keeping in view the demand and supply of debt instruments. With the new situation, debt instruments as a constraint would disappear from the scene making the monetary policy more interest free and compatible with Shariah.

3 Distribution of Income

Interest based system enhances unequal distribution of income in the economy. It causes the wealthier segment of society to become wealthier while the poor remain poor or their condition even worsens. Lenders get the interest whatever the conditions

in the economy are. In Riba free system reward of the lenders or savers changes according to the profit bearing opportunities in the economy. This causes more equitable distribution of wealth and is apparently more justified.

In economic literature, we can find view of different scholars. Rushdi (1983) has pointed out that the institution of Riba give rise to two types of distributional problems, First relating to distribution of income, firstly between bankers and public in general and savers in particular and secondly among different people specially employed workers and unemployed workers. Second type of problem is the dampening effect on investment and employment. He has shown that not only an interest free economy is feasible but is also instrumental in fostering a development policy which will cause more judicious and equitable distribution of wealth in the economy.

Owing to the fact that NSSs form about half of the domestic debt, Islamization of debt instruments will cause a much greater equitable income distribution in the economy. In case of NSSs what we are observing is that economy's resources are being utilized in serving a small proportion of the society who in fact is not taking part in the production process but is getting most of the resources merely because they are having assets in the form of interest bearing debt instruments. By Islamizing debt instruments, at one hand more people would participate into the production process and on the other hand government revenue used for debt servicing would become available for other development projects.

We observe that government has borrowed a huge amount in the form of debt instruments. Government can adopt Shariah alternatives to get rid of this debt. Savers

may have these alternatives to debt instruments either in Islamic banks or in form of having their own small-scale business.

Proceeds of NSSs are not invested in the real investment as are the cases of schemes run by the commercial banks. In commercial banks proceeds are utilized for real investment through the hands of investors. Banks use these proceeds for investment in financial assets too along with the real assets. This would speed up investment activities in the economy, which will cause a further decline in poverty.

Normal practice is that if the saver itself launches business, it gives many times profit as compared to the interest payment from the debt instruments. But due to the presence of risk of loss, fear to not be able to handle the business and due to present tax structure, savers prefer to deposit the amount in the debt instruments. If government comes ahead to remove the hurdles in starting small business, than at the one hand it would get rid of the burden of debt and on the other hand investment activities in the economy would rise which will have its impact on poverty eradication.

6.4 Other Avenues to Finance Budget Expenditures

Government can opt for different avenues just like other countries of the world. Government can ask Islamic banks to finance various public sector projects. Investment funds too may be used for this purpose. Public sector enterprises can prove a source of income for the government. To make PSEs profitable, we have to resolve managerial problems such as principal-agent problems and then using the profit yields for financing government budget expenditures. Yet another source can be

budget surplus of local governments. Federal government does not have any link with local government budget. We observe some local governments have surplus budget. Through proper rules and regulations, federal government can utilize surplus budget of local governments.

Mining can be a source of revenue for the government. Pakistan has more than ninety different types of mineral. Federal government owns, extracts and utilizes three mineral i.e., Petroleum, Natural gas and Uranium. Other minerals are managed by the provinces of their extraction. Punjab has 35 minerals, out of which only 26 are being extracted. Balochistan is the most mineral rich province of Pakistan. Balochistan has second largest reserve of gold but it is not being extracted. Bottle necks of managerial hurdles and red-tapism of bureaucracy need to be removed to extract minerals at a faster pace. Minerals are a popular source of revenue for most of the developed countries. Pakistan can export minerals in order to eliminate the need for both domestic and external debt.

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