AN EMPIRICAL ASSESSMENT OF MONETARY AND FISCAL POLICY COORDINATION WITH PUBLIC DEBT IN PAKISTAN: A TIME SERIES ANALYSIS

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By

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I declare that the thesis **An Empirical Assessment of Monetary and Fiscal Policy Coordination with Public Debt In Pakistan: A Time Series Analysis** submitted by me in partial fulfillment of my MPhil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in the future, be submitted by me for obtaining any other degree from this or any other university or institution.

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ABSTRACT

The development of monetary and debt management procedures that work in tandem with each other would be self-reinforcing, so the coordination of fiscal and monetary policies would give rise to a better result in any of the above scenarios. This would be the case because the development of such procedures would be mutually reinforcing. The objective of the study is to analyze the effects of monetary policy coordination on public debt and to analyze the effects of fiscal policy coordination on public debt. To examine the coordination of fiscal and monetary policy with public debt, we select the South Asian country Pakistan, this paper covers annual time series data from 1980 to 2020. Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) test were utilized in order to determine the order of integration and for the purpose of checking stationarity. Estimates of the Markov-switching model were derived for each of the policy reaction functions. We analyze each model's transition probability as well as the predicted duration of each regime, and we will use this information to determine the extent of the coordination that exists between monetary and fiscal policy. This study implies that Pakistan's monetary policy operates differently depending on the economic conditions that are currently in place and the policy aims that are being prioritized. The coefficients that were connected with these variables revealed their influence on the process of making fiscal decisions, and the coefficients' negative values suggested that these variables had a dampening effect on fiscal sustainability. The findings of the study on the dynamics and sustainability of fiscal policy in Pakistan give useful insights for policymakers. Policymakers can improve the coordination of fiscal policy, adopt proactive measures, prioritize economic growth and external management, perform regular assessments, stimulate additional research, and boost fiscal openness and accountability if they execute the recommended methods.

Keywords: fiscal balance, monetary policy, economics, Markov, public debt etc.

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Chapter 1

INTRODUCTION

1.1 Background

Monetary policy is the term used to describe the acts that the State Bank of Pakistan takes to regulate and control the amount of money in circulation, interest rates, and the economy. Adjusting interest rates conducting open market operations, and meeting reserve requirements were common components of this process. Inflation should be controlled; stable prices should be preserved and economic expansion should be fostered by sound monetary policy. However, government expenses and taxation are examples of fiscal policy, which are used to influence the economy. Decisions must be made about how much money the government should spend, how much money should be taxed, and how the money should be distributed. The goal of fiscal policy is to maintain economic stability while simultaneously fostering economic growth and addressing societal and economic concerns (Chowdhury et al., 2019).

Essential to coordinate monetary policy and fiscal policy to guarantee the efficiency of both policies and prevent any results that are incompatible with one another or that are counterproductive. When monetary policy and fiscal policy were coordinated, they were able to work together to attain macroeconomic objectives such as maintaining stability in prices, fostering growth in the economy, and reducing unemployment, it is imperative to implement coordinated policies. (World Bank, 2021).

Public Debt refers to the total sum of money that a nation owes to either its private creditors or to the people of that nation. The majority of the time, it is the result of borrowing money to finance budget deficits or to fund public investments. A nation's level of public debt can have a beneficial or harmful impact on the economy, depending on the circumstances. It enables governments to finance essential investments and serves as a growth stimulant also it impedes economic growth. According to K. Ali's Study (2019a) examines the impact of different sources of financing fiscal deficits, such as external sources, non-bank, and scheduled bank borrowings, on inflation in Pakistan. It provides a detailed analysis of how these financing sources contribute to inflationary trends within the economy. K. Ali (2019b) found that there is a long-term relationship between the sources of financing fiscal deficit and inflation. Specifically, the study suggests that inflation is positively affected by domestic borrowing, underscoring the inflationary nature of fiscal deficit financing methods.

For any nation to achieve both macroeconomic stability and sustainable economic growth, it is very necessary monetary policy, fiscal policy coordination, and public debt must be effectively managed. Monetary policy which is responsible for regulating the supply of money, interest rates, and inflationary pressures, is considered to be the most important factor in maintaining economic stability. Monetary policy in Pakistan is developed and carried out primarily by the State Bank of Pakistan, which plays an essential part in both of these processes. However, for monetary policy to be effective, it must be coordinated with fiscal policy. Effective monetary policy must be coordinated with fiscal policy, which involves government spending and taxation policies. Fiscal policy impacts resource allocation and can significantly influence economic conditions. Recent studies in Pakistan, such as those by Soharwardi (2022) and others, have explored the role of monetary and fiscal policy in the country's economic context.

Monetary policy and fiscal policy coordinate their efforts in order to avoid pursuing goals that were incompatible with one another and to guarantee that their combined efforts was effective in accomplishing macroeconomic objectives. In the case of Pakistan, it is necessary to have a solid understanding of the degree to which these policies were coordinated and the effect that they have on the public debt of the nation. They emphasize the importance of coordination between these policies for Pakistan's economic performance. This research shows that integrating fiscal and monetary policies in Pakistan has been challenging but is critical for addressing issues like budget deficits and inflationary pressures. Studies by Z. Andlib (2012) and M. Arby (2010) provide empirical analyses of this integration and its effect.

Heavy public debt in developing economies is one of the biggest concerns at the beginning of the 21st century. When government income is not adequate to pay its expenses, the government borrows from foreign countries. Public debt is a crucial tool for the government to finance its expenditures and support public spending, particularly when it is unable to increase taxes and reduce expenditures. With the passage of time, this practice has left most economies with enormous outstanding debts. Public debt is viewed as a double-edged sword. On the other side, excessive borrowing and mishandling of public debt may lead to large debt loads and interest payments that cause lower economic growth, a case extremely typical in developing countries.

For low-income countries with inadequate economic structure, large public debt is a serious concern since it can induce instability and low economic growth (Bohn,

2015). The reason for public debt has its base in the neoclassical growth models, which recommends that low-income countries borrow to increase their capital accumulation and economic growth Madow (2021). Developing countries like Pakistan that have limited financial resources need to borrow from foreign countries to facilitate the developmental process. The research by R. Ali in 2012 illustrates that external debt accumulation in Pakistan has had a negative impact on long-term labor efficiency, even with increased spending on education. This finding underscores the broader implications of external debt on a country's economic health. A study conducted in 2013 focused on the effects of both domestic and external debt on Pakistan's economic growth. The results suggested that external debt, more so than domestic debt, negatively influences economic growth, emphasizing the complex relationship between different types of debt and economic development (Malik & Rabia, 2013)

In the 1970s, Pakistan's external debt significantly increased, largely due to borrowing to deal with the high oil prices at the time. This period was critical in shaping Pakistan's future economic challenges, especially in terms of debt management. A. Malik's research highlights the impact of oil price fluctuations on Pakistan's inflation. It points out that in response to these economic pressures, the government resorted to deficit financing strategies, including bank borrowing and creating new currency, indicating a resource shortage for economic development (Afia Malik, 2016).

At this moment, the economy of Pakistan is overstretched, and it has not witnessed any significant growth for several years in a row. The economy is struggling and going through a tough time and the future is dismal and gloomy. The most important economic indicators were not producing adequate results. The severity of the precarious economic position is demonstrated by indicators such as a high inflation rate, poor investment, fiscal imbalance, and low capital inflows. Another significant problem is the persistent and ongoing deficit in the national budget which represents a dispute between the SBP and the fiscal authority (Aiyagari et al., 2014).

The objective of the government is to maintain sustainable levels of debt to GDP and debt service as a share of GDP. This will be achieved by a combination of strategies, including enhancing revenue production, reducing current expenses, and optimizing the efficient use of debt. According to the Fiscal Responsibility and Debt Limitation Act of 2011, the "Total Public Debt" is defined as the consolidated fund that is used to pay off debts owed to Federal Government, Provincial Governments, and the International Monetary Fund (Akram, 2011).

This study analyzes of major economic indicators in Pakistan, such as the country's inflation rates, interest rates, fiscal deficits, government spending patterns, tax policies, and public debt levels. This study provides an empirical assessment of Pakistan's monetary policy with cooperation of fiscal policy, and public debt.

1.1.1. Interaction between Monetary and Fiscal Policies

How monetary and fiscal policies influence one another is a topic that receives a great amount of attention in economics and policymaking. The coordination of their efforts is an essential factor in ensuring macroeconomic stability and fostering growth that is sustainable over the long term. The goals of monetary policy and fiscal policy frequently overlap, and some examples of these overlapped goals include price stability, full employment, and sustainable economic growth. Policymakers can enhance the efficiency of both programs in terms of accomplishing these goals if they coordinate their actions (Farooq and Hanif, 2007).

In order to control inflation and aggregate demand, monetary policy, which is managed by the state bank exerts an influence on interest rates and the amount of money in circulation. The government is responsible for determining fiscal policy, which involves making adjustments to the levels of taxation, government spending, and borrowing to influence aggregate demand and economic activity. In times of economic slowdown, monetary policy can provide a stimulus by lowering interest rates and expanding the money supply (Nasir et al., 2010). In contrast to this, fiscal policy can stimulate the economy by raising public spending or reducing taxes. When the economy is growing rapidly, authorities may choose to implement contractionary policies such as raising interest rates or cutting government spending, to keep the economy from overheating (Farooq and Hanif, 2010).

The relationship between fiscal and monetary policies primarily occurs in the domains of budgetary shortfalls financial management and monetary policy management. The particular position of monetary policy affects the capability of the state to finance the budget discrepancy, impacting the cost of servicing debt and reducing the number of financing sources that are accessible to the government. This has the effect of limiting the state's ability to finance the deficit (Mishkan, 2007). In the meanwhile, autonomy of the Federal Reserve in its day-to-day operations was constrained as a result of the government's funding plan and the financing demands of government. The impact of a specific deficit in the budget on inflationary

expansion of growth is based not only upon the magnitude of the deficit, but also on the approach adopted to finance it.

There were four different ways that the government deficit might be financed: financing government debt in the domestic market including voluntary purchases by the private sector, placement of government debt, borrowing from foreign sources, and the transfer of resources from the State Bank of Pakistan (SBP) through direct SBP credit, transfers of SBP revenues to the national treasury, and quasi-fiscal operations carried out on behalf of the government. The preferred method of financing, in order to mitigate the negative consequences associated with a significant fiscal deficit, such as increased inflationary pressures and a weakened external position of the economy, was typically through the voluntary purchases of government debt by both domestic and international investors.

The problems that were caused by a high fiscal deficit might be made significantly worse by the other sources of finance. The increased amount of credit provided by the State Bank of Pakistan (SBP) to the government has the potential to boost domestic credit growth while putting pressure on foreign reserves and reserve money. Consequently, this situation may lead to an increase in inflationary issues. According to study by R. Bouis (2019) examines the relationship between banks' holdings of government securities and credit growth to the private sector in emerging markets, including Pakistan. This study suggests that heavy reliance on public debt can lead to the crowding out of private sector loans, a phenomenon akin to financial repression.

Due to its dominating power, the Ministry of Finance has the ability to determine the size of the budget deficit without first seeking advice fromthe authority that is accountable for the management of the country's money. Given the liquidity of the bond market, the central bank would be bound to issue whatever amount of base money is necessary to cover the budget deficit. This would be the case regardless of the quantity of financing that was required (e.g., direct credit to the government).

If this boosted demand for real base money at the intended price level by a greater amount than the expansion of demand for real base money, it would lead to higher pressures on inflation and international reserves. In addition, the increased instability that leads to excessive inflation would impede the growth of the local

financial market. Because the SBP and the Ministry of Finance act as if they were independent institutions, it is possible for the monetary and fiscal authorities to make decisions that were incompatible with one another regarding the expansion of the monetary base and the magnitude of the budget deficit, respectively (Agha and Khan, 2006).

The portion of the budget deficit that could not be covered by resources derived from seigniorage in either the domestic or international bond markets would be funded by the fiscal authority. However, if the domestic financial markets were not well developed, they may not be in a position to provide the necessary financing. Once the limits on access to financing from foreign sources were reached, either fiscal policy or monetary policy would need to assume a subservient role, as was described in the two scenarios that came before this one (Aiyagari and Gertler, 1985). Furthermore, even in the context of strong domestic capital markets, the presence of fiscal policies that were inconsistent with the objectives of monetary policy may lead to a boom in interest rates within the domestic bond market, the potential for the local bond market to experience significant growth or the rise in government debts. This is because the main objectives of fiscal policy and the objectives of monetary policy were mutually exclusive (Adam, 2011).

Coordination of both monetary and fiscal policies would give a better outcome in all of the cases mentioned above since the formation of complementary monetary and debt management processes would have a positive feedback loop. This would be the case because the development of such procedures would be mutually reinforcing. When monetary and fiscal policy goals were coordinated, not only is it possible to achieve both simultaneously at a lower cost to the economy, but it also encourages the expansion of the domestic financial market. The growth of financial markets provides additional opportunities for improved implementation of monetary and public debt policy (Khan et al., 2017).

1.1.2. Coordination Process

The state bank which is responsible for monetary policy and the government or fiscal authorities which are responsible for fiscal policy are responsible for coordinating their respective aims communicating with one another and working together as part of the process of coordinating monetary and fiscal policies. The first thing to do in order to coordinate monetary and fiscal policy is to make sure their goals are in line with one another. It is necessary to make certain that both policies are aimed toward the

promotion of macroeconomic stability, sustained economic growth, and low inflation. It requires both parties to understand each other and come to an agreement on the objectives and goals they want to achieve (Cukierman, 1992).

The capability of the state bank and the fiscal authorities to maintain open lines of communication and freely exchange information is essential to efficient coordination. Policymakers can have a thorough awareness of the economic environment, policy actions, and the potential implications of those actions because they hold regular meetings, consult with experts, and exchange data and projections with one another. To minimize contradicting activities and to promote confidence, coordination entails maintaining policy consistency and maintaining transparency. To minimize policy shocks or inconsistent measures that could weaken market confidence, the state bank and fiscal authorities should have a clear knowledge of each other's anticipated policy actions and timing. This information should be shared between the two groups (Cuckierman et al., 1992). The State Bank of Pakistan (SBP) acknowledges the importance of transparency, credibility, and accountability in its communication processes. This approach contributes to achieving its overall objectives and ensures better coordination with fiscal authorities (Malcolm, 2008).

Coordination must involve collaborative evaluations of the economic environment and the efficacy of policies. It is possible for the state bank and the fiscal authorities to perform cooperative analyses, evaluations, and scenario assessments to have a better understanding of the potential influence that their policies could have on important macroeconomic indicators, such as the levels of public debt. When policies are coordinated, it may be necessary to change the timing and size of monetary and fiscal actions to obtain the best possible results. For instance, monetary policy activities such as changes in interest rates can be complemented or strengthened by fiscal policy measures such as changes in government spending or taxation. This is possible because fiscal policy and monetary policy are both considered types of economic policy.

Even more so than usual, coordination is of the utmost importance when times are difficult economically or when big disruptions occur. In circumstances like these, policymakers may require tight collaboration, the sharing of information in real time, and the undertaking of collaborative activities to solve the issues and stabilize the economy. Regardless of the level of development that an economy is now at, there was always a requirement for policy coordination in public debt. However, it was taking different forms depending on the specific circumstances of a country and the particular

characteristics of that country's economy. These particular characteristics include the depth of a country's financial markets, the regime governing exchange rates, and other institutional arrangements (Dar et al., 2014).

It is particularly helpful in the process of facilitating a balanced policy mix to have a framework that projects the demand for wide money and the sources of domestic credit. There is typically no secondary market for these securities as of yet, the interbank market is still in its different stages of development, the government may continue to exercise some level of control over interest rates, and indirect instruments of monetary policy were only recently being brought into play. However, the fiscal burden associated with the government's debt service has been influenced by the activities undertaken by the State Bank of Pakistan (SBP).

The SBP has begun taking proactive actions to regulate overall liquidity levels (despite sometimes remaining the major source of liquidity for public debt instruments). As the economy places a larger focus on the function that interest rates play in the economy as a signaling mechanism, the utility of employing broad moneyprogramming frameworks as a tool for successfully coordinating monetary and fiscal policy tends to decrease. They authored a paper exploring the coordination of monetary and fiscal policies in Pakistan. This study provides an in-depth analysis of how these two critical policy areas have interacted with each other within the Pakistani context (Arby and Hanif, 2010). It is nownecessary to keep a close eye on developments in the financial markets, particularly themoney market. Given these circumstances, the role that reserve money programming plays in directing actions by the SBP in the market takes on increased significance. Finally, when domestic financial markets reached their full potential of development, interest rates were entirely flexible, the market was ensuring the liquidity of public debtinstruments and the SBP was managing liquidity on its initiative using market-based instruments that were flexible.

In this kind of setting, the financial markets tend to respond quickly and forcefully to signals coming from the SBP. In particular, preserving the credibility of monetary policy is essential to doing so to keep market conditions orderly. In the normal course of events, the independence of the SBP had been established. On the other hand, this sort of "institutional credibility" needs to be backed up with "operational credibility." The effectiveness of monetary policy is dependent upon not only the presence of legal measures that protect the autonomy of the monetary authority but also on the presence of actual agreements between the policymakers responsible for

monetary and fiscal policy, as well as the degree of fiscal responsibility.Even though the law provides the SBP with a great deal of autonomy, in actuality, the SBP is only able to successfully pursue monetary policies that were easily comprehended and approved by both the government and the general public.

The financial management of Pakistan's governmental resources, including the formulation and implementation of fiscal policy, is primarily the responsibility of the Ministry of Finance. This ministry undertakes a multifaceted role that begins with the preparation and management of the annual budget, a critical document that delineates government revenues and expenditures across various sectors and is instrumental in managing fiscal deficits. A pivotal component of their mandate is the oversight of public debt management, entailing the formulation of strategies for sustainable borrowing both domestically and internationally, as articulated in the Medium-Term Debt Strategy (MTDS) documents which outline the debt management roadmap for specified periods.

Additionally, the Ministry is tasked with the development of taxation policies, which are essential for generating government revenue. This includes the determination of tax rates and the establishment of tax types, coupled with measures aimed at curbing tax evasion. The Ministry's responsibilities extend further to the development of economic policies that are aimed at bolstering financial stability and fostering economic growth.

Transparency and accountability are upheld through the Ministry's regular publication of financial reports, such as the Annual Debt Review and Public Debt Bulletin. These publications provide insights into the government's financial dealings and debt obligations. The Ministry also manages Pakistan's engagements with international financial institutions and oversees the handling of foreign aid and loans, thus maintaining the country's international financial relations. The Ministry of Finance of Pakistan (2023) is responsible for the financial management of the government's resources, including the formulation and implementation of fiscal policy. Their process involves several key functions:

- **Budget Preparation and Management:** The Ministry of Finance prepares the annual budget, outlining government revenues and expenditures. This includes allocations for various sectors and managing fiscal deficits.
- **Public Debt Management:** The Ministry oversees the management of public

debt. This includes strategies for borrowing, both domestically and internationally, and ensuring that the debt levels are sustainable. The Medium-Term Debt Strategy (MTDS) is a key document in this regard, providing a roadmap for debt management for a set period (e.g., MTDS 2019/20 - 2022/23).

- **Taxation Policies:** The Ministry formulates taxation policies to generate revenue for the government. This includes determining tax rates, types of taxes, and measures to prevent tax evasion.
- **Economic Policy Development:** The Ministry is involved in developing broader economic policies to promote financial stability and economic growth.
- **Financial Reporting and Transparency:** The Ministry publishes regular reports on financial matters, such as the Annual Debt Review and Public Debt Bulletin, to maintain transparency and accountability.
- **International Financial Relations:** The Ministry manages Pakistan's relationships with international financial institutions and handles foreign aid and loans.
- **Fiscal Monitoring and Compliance:** Monitoring fiscal performance and ensuring compliance with financial rules and regulations is a crucial aspect of their work.

Complementing these efforts, the State Bank of Pakistan (SBP) contributes significantly to the management of public debt through the conduct of auctions for marketable government securities, such as Medium-Term Bills (MTBs), Pakistan Investment Bonds (PIBs), and Government Ijara Sukuks (GIS). The SBP's process involves a series of methodical steps starting from the selection and announcement of the securities to be auctioned, to the intricate bidding process where financial institutions submit bids. The bids are then meticulously evaluated, and securities are allotted to the successful bidders, culminating in the issuance of securities which ultimately aid in raising funds for the government's financial needs.

The SBP's role extends to managing and regulating public debt data, ensuring the accuracy and reliability of the government's financial obligation records. The synergy between the Ministry of Finance and the SBP in these operations is paramount for the effective management of public debt, thereby ensuring the financial stability and economic prosperity of Pakistan. The State Bank of Pakistan (SBP, 2023) is involved

in conducting auctions for marketable government securities as part of its role in managing public debt. This process involves several key steps:

- **Selection of Securities:** The SBP selects the type of government securities to be auctioned. These include Medium Term Bills (MTBs), Pakistan Investment Bonds (PIBs), and Government Ijara Sukuks (GIS).
- **Announcement of Auction:** The SBP announces the details of the auction, including the date, the type of securities to be auctioned, and the amount.
- **Bidding Process:** Financial institutions, such as banks, participate in the auction by submitting bids. These bids specify the amount they are willing to buy and at what interest rate.
- **Evaluation of Bids:** The SBP evaluates the bids based on various criteria, including the interest rate and the amount of money offered by the bidders.
- **Allotment of Securities:** Based on the evaluation, the SBP allots securities to the successful bidders. This process determines how much each participant will receive and at what interest rate.
- **Issuance of Securities:** After the auction, the government securities are issued to the successful bidders, thereby raising funds for the government.
- **Management of Public Debt Data:** The SBP also manages and regulates certain public debt data, ensuring accurate recording and reporting of the government's financial obligations.

This auction process is critical for the effective management of public debt in Pakistan, allowing the government to finance its needs while maintaining financial stability. ADB (2022) assistance includes support for domestic resource mobilization, financial inclusion, and energy sector reforms, which are designed to aid the government in macroeconomic management. These initiatives are crucial for the effective coordination between fiscal policy, which deals with government spending and taxation, and monetary policy, which is concerned with the management of interest rates and total money supply.

Additionally, ADB's Technical Assistance (TA) supports the Government of Pakistan's public financial management reforms, including the formation of tax revenue policies. These reforms are important for fiscal consolidation and to ensure sustainable economic stabilization. Structural reforms, particularly in tax policy and administration,

are also highlighted as essential for boosting revenues and funding public services. Furthermore, ADB recognizes the challenges of policy coordination and implementation within Pakistan's financial sector and seeks to address these through its interventions. The Economic Stabilization Program, supported by the IMF and ADB, also emphasizes the introduction of fiscal consolidation measures and revenue mobilization to ensure sustainable growth. Through these efforts, ADB aims to strengthen policy coordination between the monetary and fiscal policies to promote a stable and growing economy in Pakistan

De facto coordination between monetary and fiscal policies in Pakistan involves the State Bank of Pakistan (SBP) and fiscal authorities adapting to economic realities, often diverging from formal policy frameworks. The SBP, responsible for monetary and credit policy, faces real-world challenges such as responding to government borrowing needs and managing fiscal deficits. These interactions are shaped by economic conditions, political pressures, and historical trends, where fiscal imperatives have sometimes heavily influenced monetary policy, particularly during financial crises or high public debt periods. This dynamic interplay showcases the nuanced nature of policy coordination in Pakistan's economic landscape beyond the formal mandate.

1.1.3. Theoretical Background

Debt is a financial term that refers to an obligation or liability to pay or return something, typically money, owed by one party (the debtor) to another (the creditor). Often, this involves a sum of money and may include interest. Debt can be understood from various perspectives, including financial, legal, and moral. Financially, debt is an amount of money borrowed by one party from another, with an agreement to repay, usually with added interest. This can encompass loans, bonds, mortgages, and other financial liabilities. Smith, J., & Doe, J. (2021) explore the significance of debt in modern economic systems, its effects on financial markets, and implications for economic policy.

Public debt, also known as government debt, refers to the money or credit owed by any level of government, from federal to state. It's the sum of all the government liabilities owed to creditors outside the government. This debt can arise from borrowing from foreign governments, international organizations, or issuing government bonds and securities. Public debt is often used to finance government operations when expenditures exceed revenues, invest in infrastructure projects, and provide economic stimulus Rosen, H. S., & Gayer, T. (2014).

The publication titled "Government Debt Management Practices and Coordination with Monetary Policy" is a handbook provided by the World Bank. This handbook is a comprehensive resource that offers detailed insights and guidance on various aspects of managing government debt effectively. Government Debt Management Practices and Coordination with Monetary Policy, this handbook serves as a valuable resource for policymakers, financial experts, and professionals involved in public debt management. It covers a wide range of topics related to government debt management practices and how they interact with monetary policy. Here are some key aspects of the handbook:

According to World bank (2004) handbook discusses various debt management strategies that governments can adopt to raise funds, manage debt levels, and minimize borrowing costs. It provides insights into the issuance of government securities, including bonds and bills.

- Effective coordination between debt management and monetary policy is crucial for maintaining financial stability and achieving economic objectives. The handbook explores how debt management decisions can impact monetary policy and vice versa.

- It offers guidance on conducting debt sustainability analyses, which are essential for assessing whether a government's debt levels are sustainable over the long term. This involves evaluating a country's capacity to service and repay its debt.

- The handbook delves into risk management strategies associated with public debt, such as interest rate risk and foreign exchange risk. It discusses tools and techniques to mitigate these risks effectively.

- The handbook may reference international standards and guidelines for debt management, ensuring that governments adhere to globally recognized best practices.

- It may provide information on data sources and reporting requirements related to government debt. Timely and accurate data are essential for transparent debt management.

According to IMF (2001) Government debt management through fiscal policy is a critical aspect of economic governance. Fiscal policy involves how the government uses taxation and government spending to influence the economy. It plays a vital role in managing government debt. Here are some key points:

- Governments aim to balance their budgets by matching government revenues with expenditures. When revenues exceed expenses, it can be used to pay down debt. When expenses surpass revenues, it can lead to increased borrowing.

- Governments issue debt securities like bonds and Treasury bills to raise funds. The level of debt issuance is influenced by fiscal policy decisions. Governments may issue more debt to finance deficits or reduce issuance when fiscal conditions improve.

- Fiscal policy impacts interest rates, which in turn affect government debt costs. Higher government spending can lead to increased demand for borrowing, potentially driving up interest rates.

- During economic downturns, governments may employ expansionary fiscal policies, such as increased government spending or tax cuts, to stimulate economic growth. However, this can also lead to higher deficits and debt.

- Fiscal policy can include strategies to reduce government debt. This may involve fiscal consolidation measures, reducing budget deficits, and allocating funds for debt repayment.

- Governments strive to ensure that the level of debt remains sustainable over the long term. Fiscal policies must consider the debt-to-GDP ratio to assess sustainability.

- Fiscal discipline and responsible policies help maintain investor confidence in government debt. A lack of confidence can lead to higher borrowing costs.

- Coordination between fiscal and monetary policies is essential. Central banks often adjust interest rates to align with fiscal goals and manage inflation.

- Fiscal policy also involves risk management related to debt, including refinancing risk, interest rate risk, and currency risk for foreign-denominated debt.

- Transparent fiscal policies and effective communication are essential for managing government debt and maintaining trust with citizens and financial markets.

IMF (2001) Government debt management through monetary policy plays a crucial role in a country's economic stability and fiscal health. Monetary policy, which is typically set by a country's central bank, involves controlling the money supply, interest rates, and credit conditions. Here's how it affects government debt management:

- Central banks can influence short-term interest rates through their monetary policy decisions. Lowering interest rates can make it cheaper for the government to borrow money by issuing bonds, which can be essential for refinancing existing debt or financing budget deficits.

- Central banks may engage in quantitative easing (QE) by purchasing government bonds in the open market. This action injects money into the economy and can indirectly help manage government debt by reducing yields on government bonds and, consequently, the cost of servicing debt.

- Monetary policy can affect a country's exchange rates, which, in turn, can impact the cost of servicing foreign-denominated government debt. A strong domestic currency can reduce the burden of foreign debt.

- Some central banks follow inflation targeting as part of their monetary policy. Keeping inflation within a target range helps maintain the real value of government debt, as excessive inflation erodes the purchasing power of the currency used to repay debt.

- Monetary policy can influence economic growth. Stronger economic growth can lead to increased government revenue, making it easier to manage debt. Conversely, a central bank may employ expansionary monetary policy to stimulate the economy during downturns, potentially leading to higher government deficits and debt.

- The central bank's commitment to stable monetary policy can enhance investor confidence in government debt. This confidence can lead to lower borrowing costs for the government.

According to Togo, E. (2012) and Ng'Ang'A, et. al, (2019) Fiscal and monetary policy coordination is crucial for effective public debt management for several reasons:

- Fiscal authorities (government) and monetary authorities (central bank) need to coordinate to manage interest rates effectively. High interest rates can increase the cost of servicing public debt, while low rates can reduce it. By working together, they can help ensure that interest rates remain stable and at a level that is sustainable for the government.

- Coordination is essential to control inflation. High inflation erodes the real value of government debt. The central bank's monetary policy can impact inflation, so aligning fiscal and monetary policies helps prevent excessive inflation that can lead to

higher debt servicing costs.

- Coordinated policies aim to maintain government debt at a sustainable level relative to GDP. Fiscal policy influences the level of government borrowing, while monetary policy affects the cost of borrowing. Effective coordination ensures that borrowing is aligned with the country's fiscal capacity.

- Consistency and coordination between fiscal and monetary policies enhance investor confidence in government bonds. This can result in lower borrowing costs for the government, reducing the burden of servicing debt.

- Coordinated policies contribute to overall economic stability. When fiscal and monetary policies work in tandem, they can help smooth economic cycles and prevent excessive borrowing during economic booms or excessive tightening during downturns, which can affect debt levels.

- Public debt management involves assessing various risks, such as interest rate risk, currency risk, and refinancing risk. Coordination allows for a more comprehensive approach to risk management, ensuring that these risks are effectively mitigated.

- Coordinated policies enable long-term planning for public debt management. Fiscal and monetary authorities can establish clear strategies for borrowing, debt issuance, and repayment that align with the country's economic goals.

1.2 Objectives of the Study

The objective of this study is:

- To investigate the impact of monetary policy on public debt in Pakistan
- To investigate the impact of fiscal policy on public debt in Pakistan
- To analyze monetary and fiscal policy coordination with public debt in Pakistan

1.3 Research Questions

After defining the purpose of the study, some research questions were generated based on the research conducted.

1. How does the coordination of monetary and fiscal policies affect public debt in Pakistan?
2. Is there any role of monetary and fiscal policy coordination with public debt in Pakistan (debt to GDP ratio)?

1.4 Significance of the study

This research is vital for Pakistan, a country grappling with the complexities of balancing national debt alongside striving for economic stability and growth. By investigating how these two key policy areas interact, the study sheds light on potential strategies for more effective debt management, a crucial aspect for Pakistan's economic health.

Moreover, the study's focus on how such policy coordination can influence broader economic objectives, such as sustainable growth, price stability, full employment, and controlling inflation, holds significant relevance. These factors are pivotal in shaping the economic landscape of Pakistan, where fiscal deficits and inflationary pressures are persistent challenges. Understanding the nuances of these interactions provides valuable insights for policymakers in crafting balanced and effective strategies.

Additionally, the research delves into the critical issue of budget deficit financing, a major concern in Pakistan’s fiscal management. By exploring the consequences of expansionary fiscal policies on aggregate demand and inflation, the study contributes to a nuanced understanding of the fiscal policy's implications in an economy like Pakistan’s.

1.5 Organization of the study

The organization of the study is methodically structured to provide a comprehensive analysis of the impact of monetary and fiscal policy coordination on public debt in Pakistan. It begins with an introduction that sets the stage for the research, outlining the background, problem statement, objectives of the study, and research Question. This is followed by a thorough literature review, where existing research and theories relevant to the topic are examined to identify knowledge gaps and build a foundation for the study. The methodology section details the research methods used, including data collection and analysis techniques, ensuring transparency and reproducibility of the research.

Subsequent chapters present the results, offering a detailed account of the findings with supporting data and visuals. These findings are then critically discussed in the next section, interpreting their significance in relation to existing literature and the broader context of Pakistan's economic policies. The study culminates with a conclusion and recommendations section, where the key insights are summarized, limitations acknowledged, and potential areas for future research suggested. This section also offers practical recommendations based on the study's findings. The thesis is rounded off with a comprehensive list of references, providing due credit to all sources used, and appendices that include supplementary material to support and enrich the main text. This structured approach ensures a logical flow of information, facilitating a clear understanding of how monetary and fiscal policy coordination impacts public debt in Pakistan.

CHAPTER 2

DEBT PROFILE OF PAKISTAN

Early years and borrowing from abroad the process of Pakistan amassing debt began not long after the country gained its independence in 1947. During its formative years, the nation relied heavily on financial assistance from other nations in order to meet its economic requirements and fund its various development programs. This includes financial assistance and loans from bilateral lenders, commercial sources as well as international financial institutions. Changes in Pakistan's debt profile due to an increase in domestic borrowing during the 1970s and 1980s, Pakistan's debt profile experienced major changes due to an increase in domestic borrowing. When it came time to finance its budget deficits and various development initiatives, the government began to rely more and more on resources within the country such as commercial banks and the state bank.

Programs of structural adjustment and an increase in external borrowing during the 1990s and the early 2000s, Pakistan collaborated with international financial institutions to conduct several structural adjustment programs. These programs increased the country's ability to borrow money from outside the country. These programs sought to correct macroeconomic imbalances and advance economic reforms as their primary goals. In the context of these programs, Pakistan was granted considerable financial assistance and loans from other countries in order to support its attempts to achieve stability.

Increase in Pakistan's external debt over the course of the past several years, Pakistan has experienced a considerable increase in its level of external debt. The nation has had difficulty maintaining its balance of payments, which has led to an increased reliance on borrowing money from other countries. The term "external debt" encompasses borrowings made from both multilateral and bilateral lending agencies as well as the issuing of international bonds.

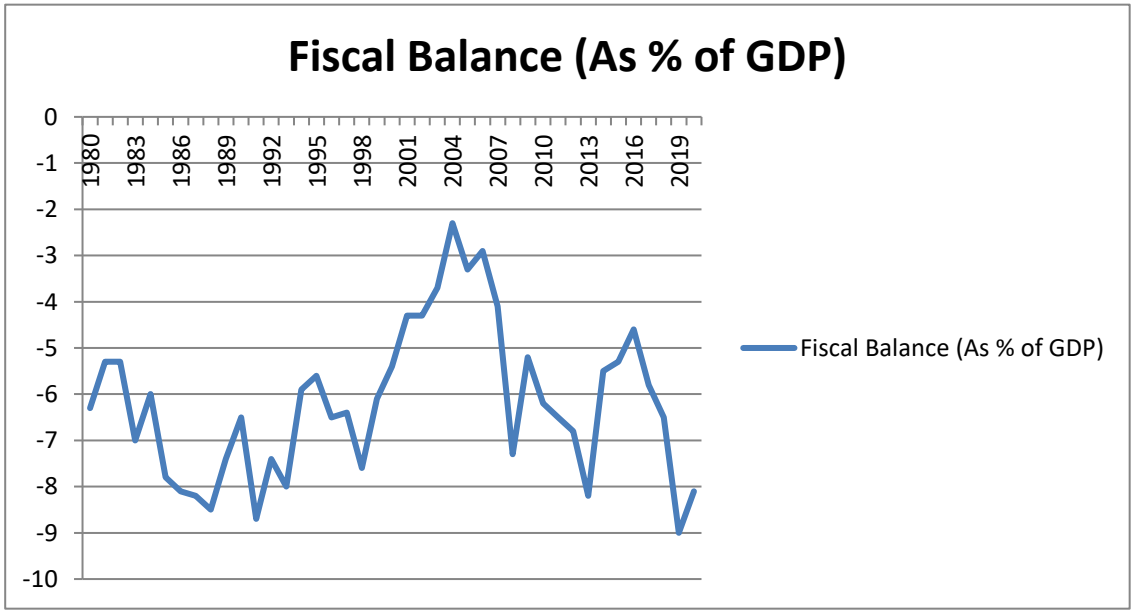
In order to lessen the weight of its debt, Pakistan has acquired debt relief programs and gone through the process of debt restructuring. These efforts have included renegotiating terms with creditors, rescheduling existing debt, and refinancing existing debt to decrease liabilities related to debt servicing and improve debt sustainability. Developing countries like Pakistan have limited financial resources, and

need to borrow from foreign countries in order to facilitate the developmental process. Pakistan experienced a significant increase in its debt burden during the 1970s as a result of the government's decision to borrow funds in order to reduce the adverse effects of increasing oil prices. Afterward, people experienced significantconsequences due to a huge external debt burden (Adam, 2011).

Between the years 1990 and 2016, the percentage of revenue from taxes allocated for foreign debt payments reached 16 percent, exceeding the amount allocated towards public expenditure on healthcare. Pakistan has received around $500[1] million in the form of loans between the years 2021 and 2011. In 2010, Pakistan was classified as a "middle-income" country due to its national per capita income of approximately $1389 (Nasir, 2010). Since 2014, the weight of Pakistan's debt has continued to grow; by 2016, the country's government had accumulated a foreign debt of $59 billion (Chowdhury et al., 2019).

During the course of 2017, Pakistan utilized up to 20 percent of its foreign assets with the goal of preserving the rupee's purchasing power. The total amount of Pakistan's public debt was 32,708 billion rupees in 2019, and it is projected to reach 36,399 billion rupees by the end of June 2020 (Chowdhury et al., 2019). The total amount of Rs 1,607 billion was recorded during the initial nine months of the ongoing fiscal year, which is a significant decrease when compared to the amount that was reregistered during the same period in the previous fiscal year (Rs 2,499 billion) (World Bank, 2021).

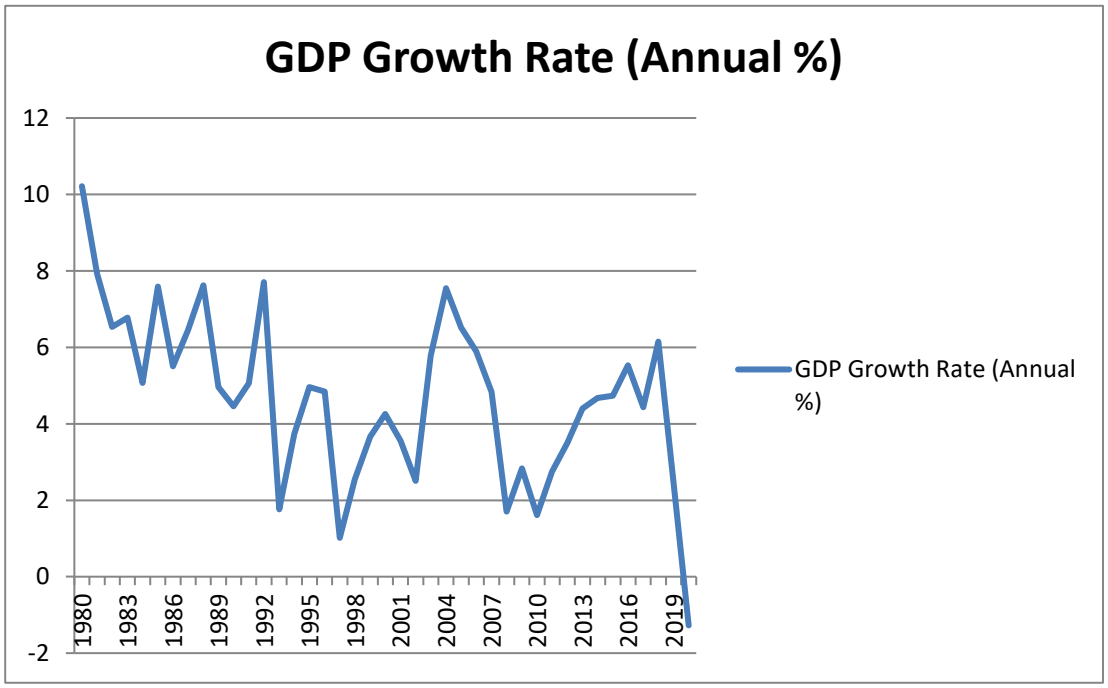
Figure 2.1: Fiscal Balance



Source: Economic Survey of Pakistan

The overall amount of governmental debt was estimated to be Rs. 38,006 billion[2] as of the end of March 2021. Figure 2.1 illustrates the fiscal balance of an economy as a percentage of its GDP from 1980 to approximately 2019. The fiscal balance is consistently negative, indicating that the government's expenditures have exceeded its revenues, resulting in budget deficits throughout the period. The most significant deficits appear to occur around 1990 and after 2015, where the balance dips below -8% of GDP.

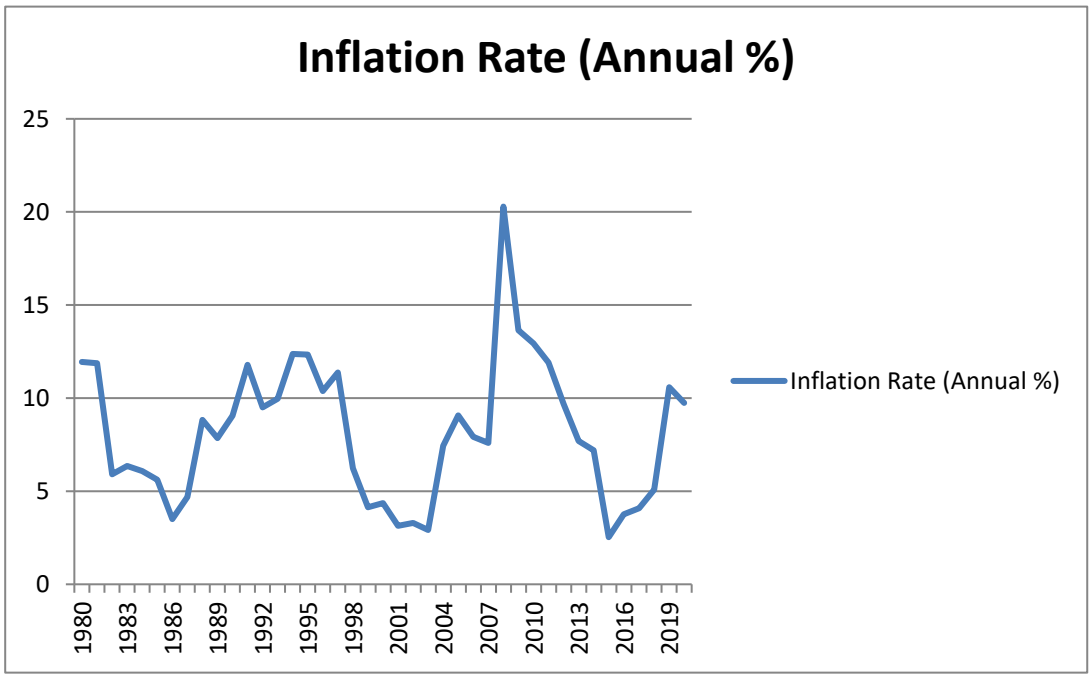
Figure 2.2: Growth Rate



Source: Economic Survey of Pakistan

Figure 2.2 displays the annual GDP growth rate percentage from 1980 to approximately 2019. It shows fluctuations in the growth rate with a general downward trend from high peaks in the 1980s. There are notable increases and declines throughout the period, with the growth rate varying between 2% and 10%. The chart suggests periods of economic expansion and contraction, but the specific reasons for these changes are not provided in the chart itself.

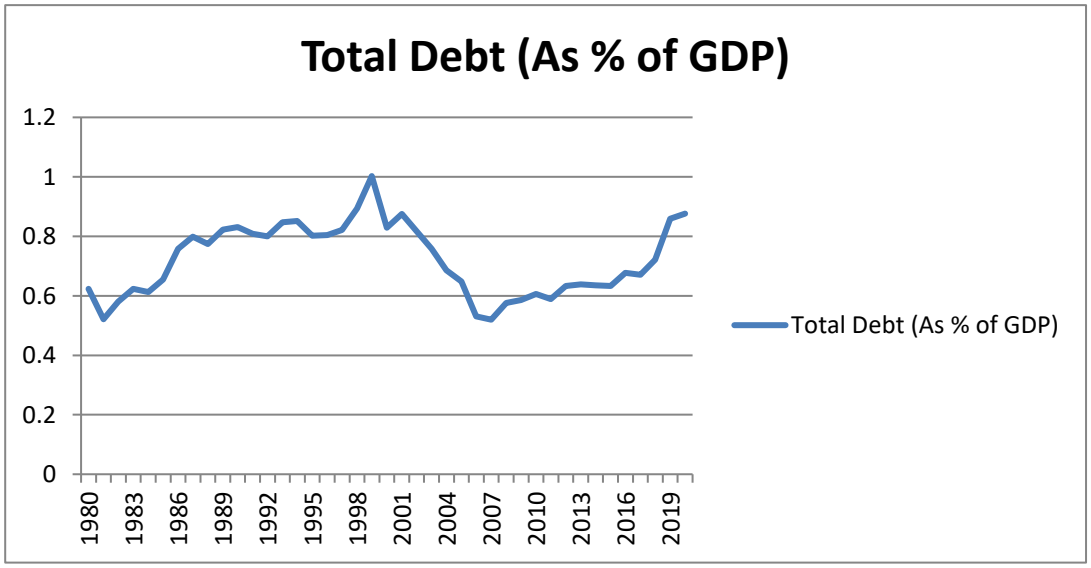
Figure 2.3: Inflation Rate



Source: Economic Survey of Pakistan

Figure 2.3 shows the annual inflation rate percentage from 1980 to around 2019. The rate fluctuates significantly over time, with peaks reaching above 20% at certain points, indicating periods of high inflation. Overall, the trend is variable with no clear long-term upward or downward direction, reflecting the changing economic conditions that affect inflation within this period.

Figure 2.4: Total Debt



Source: Economic Survey of Pakistan

Figure 2.4 displays the ratio of total debt to GDP from 1980 to approximately 2019. The ratio shows an overall increasing trend, with a few periods of decline. The ratio exceeds 1.0 at certain points, indicating that the total debt surpassed the annual GDP. This suggests a growing reliance on debt over the observed period, which could raise concerns about the sustainability of the debt levels relative to the size of the economy.

A significant improvement in the financial position was achieved in the first eight months of the 2019-2020 fiscal year as a result of careful control of expenses in conjunction with impressive revenue growth. Yet, these improvements were tested by Covid-19; however, the earlier gains had built sufficient budgetary flexibility to deal with the shock of Covid-19 and retain a lower budget deficit compared to the previous fiscal year (Agha & Khan 2012). At the moment, the economy of Pakistan is overstretched, and it has not witnessed any significant growth for several years in a row.

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[1] https://jubileedebt.org.uk/countries-in-crisis/debt-crisis-pakistan
[2] https://www.finance.gov.pk/survey/chapters_21/09-Public%20debt.pdf

The economy is struggling and going through a tough time, and the future is dismal and gloomy. The most important economic indicators are not producing adequate results. The severity of the precarious economic position is demonstrated by indicators such as a high inflation rate, poor investment, fiscal imbalance, and low capital inflows. Another significant problem is the persistent and ongoing deficit in the national budget which represents a dispute between the SBP and the fiscal authority (Aiyagari et al., 2014).

The government intends to maintain sustainable ratios of debt to GDP and debt service costs to revenues through a combination of policies, including enhancedrevenue mobilization, reduced current spending, and efficient usage of public debt. According to the Fiscal Responsibility and Debt Limitation Act of 2011, "Public Debt"is the debt that is owed by the government (which includes the Federal Government and Local Governments), which is connected out of the combined fund, as well as loansthat are owed to the International Monetary Fund (IMF) (Akram, 2011). While "Total Debt and Liabilities" of the nation embrace both "Total Public Debt" (also known as "Government Debt") and the debt of other sectors, as shown in the table below (Beetsma, 2017):

Table 2.1: Pakistan's Debt and Liabilities

(Rs in billion)	2015	2016	2017	2018	2019	Mar-20
I. Government Domestic Debt	12,192.5	13,625.9	14,849.2	16,416.3	20,731.8	22,477.7
II. Government External Debt	4,770.0	5,417.6	5,918.7	7,795.8	11,055.1	11,658.1
III. Debt from IMF	417.6	633.1	640.8	740.8	921.0	1,071.3
IV. External Liabilities[1]	377.6	377.1	373.8	622.3	1,710.1	1,642.5
V. Private Sector External Debt	539.2	709.1	1,183.2	1,654.5	2,481.3	2,634.4
VI. PSEs External Debt	252.7	294.0	285.2	324.6	630.6	582.0
VII. PSEs Domestic Debt	458.7	568.1	822.8	1,068.2	1,394.2	1,397.7
VIII. Commodity Operations[2]	564.5	636.6	686.5	819.7	756.4	649.3
IX. Intercompany External Debt from Direct Investor abroad	276.6	315.6	353.9	437.2	542.7	707.5
A. Total Debt and Liabilities (sum I to IX)	**19,849.4**	**22,577.1**	**25,114.2**	**29,879.4**	**40,223.1**	**42,820.3**
C. Total Public Debt (sum I to III)	**17,380.2**	**19,676.6**	**21,408.7**	**24,952.9**	**32,707.9**	**35,207.0**
D. Total Debt of the Government[3]	**15,986.0**	**17,823.2**	**19,635.4**	**23,024.0**	**29,520.7**	**31,452.4**
Memorandum Items						
GDP (current market price)	27,443.0	29,075.6	31,922.3	34,616.3	37,972.3	41,726.7
Government Deposits with the banking system[4]	1,394.1	1,853.5	1,773.3	1,928.9	3,187.2	3,754.6
US Dollar, last day average exchange rates	101.8	104.8	104.9	121.5	163.1	166.4

Source: Economic Survey of Pakistan(2019-2020)

External Liabilities consist of deposits held with the state bank, SWAPS, allocation of Special Drawing Rights (SDR), and deposits held with the state bank by

non-residents of the country. Includes money borrowed for commodity operations from banks by various provincial governments and public sector enterprises. The term "Total Debt of the Government" states to the government's loan (including both governments Federal and Provincial) that is serviced out of the combined fund, including debts owed to the International Monetary Fund (IMF), minus the accumulated deposits of the Federal Government and the Provincial Governments with the banking system, as defined by the Fiscal Responsibility and Debt Limitation Act 2011, as amended in June 2017. The total monetary deposits made by the federal and provincial governments into the banking system over a period of time. The total amount of public debt reached Rs 35,207 billion by the end of March 2020, indicating a rise from Rs 32,708 billion as of June 2019[3]. During the first nine-month span of the current fiscal year, there was a prominent rise of Rs 2,499 billion. Concurrently, the Federal Government has to borrow Rs 2,080 billion in order to address its deficit during that time period.

This difference is primarily attributable to the depreciation of the Pakistani Rupee in comparison to the United States Dollar (Alzyadat, 2020), there was a rise in the cash reserves of the Federal Government, as well as a discrepancy between the nominal value (used for debt recording purposes) and the actual value (recorded as a budgetary receipt) of PIBs issued during the indicated timeframe. The trend in total public borrowing since 1971 is depicted in table 2.2 and Figure 2.5.

[3] https://www.finance.gov.pk/survey/chapter_20/09_Public_Debt.pdf

Table 2.2: Year Wise Total Public Debt Position

Year	Domestic Debt	External Debt	Public Debt	Year	Domestic Debt	External Debt	Public Debt	Year	Domestic Debt	External Debt	Public Debt
					(Rs in billion)						
1971	14	16	30	**1988**	290	233	523	**2005**	2,178	2,034	4,211
1972	17	38	55	**1989**	333	300	634	**2006**	2,322	2,038	4,359
1973	20	40	60	**1990**	381	330	711	**2007**	2,601	2,201	4,802
1974	19	44	62	**1991**	448	377	825	**2008**	3,274	2,853	6,127
1975	23	48	70	**1992**	532	437	969	**2009**	3,860	3,871	7,731
1976	28	57	85	**1993**	617	519	1,135	**2010**	4,653	4,357	9,010
1977	34	63	97	**1994**	716	624	1,340	**2011**	6,014	4,756	10,771
1978	41	71	112	**1995**	809	688	1,497	**2012**	7,638	5,059	12,697
1979	52	77	130	**1996**	920	784	1,704	**2013**	9,520	4,771	14,292
1980	60	86	146	**1997**	1,056	939	1,995	**2014**	10,907	5,085	15,991
1981	58	87	145	**1998**	1,199	1,193	2,392	**2015**	12,193	5,188	17,380
1982	81	107	189	**1999**	1,389	1,557	2,946	**2016**	13,626	6,051	19,677
1983	104	123	227	**2000**	1,645	1,527	3,172	**2017**	14,849	6,559	21,409
1984	125	132	257	**2001**	1,799	1,885	3,684	**2018**	16,416	8,537	24,953
1985	153	156	309	**2002**	1,775	1,862	3,636	**2019**	20,732	11,976	32,708
1986	203	187	390	**2003**	1,895	1,800	3,694	**Mar-20**	22,478	12,729	35,207
1987	248	209	458	**2004**	2,028	1,839	3,866				

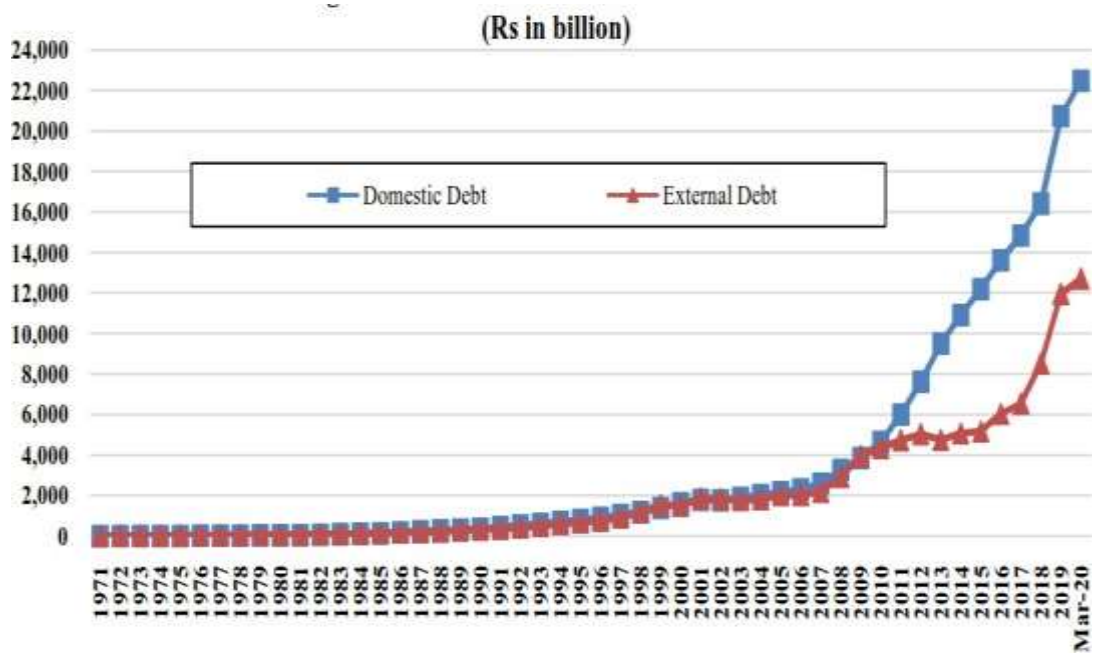


Figure 2.5: Year-Wise Total Public Debt Position

The continued existence of both a budget deficit and public debt acts as a deterrent to the formation and implementation of independent monetary policy. The SBP has selected to implement a stringent monetary policy to discourage the accumulation of domestic governmental debt as well as external debt. However, even the increased interest rate is not enough to stop the accumulation of debt by the federal government. The State Bank of Pakistan has never turned down a request for assistance from the federal government and has consistently closed the budget gap.

Politicians and those in charge of the economy have not been able to close the budget deficit and they are not serious about making necessary modifications. The politicians and policymakers in charge of SBP never give them permission to act and operate autonomously. Before the year 1990, the idea of coordinating Pakistan's monetary and fiscal policy was completely foreign to the country (Alesina et al., 2014).

In the 1990s, when monetary policy and public debt policy began to operate independently of one another, and when the SBP gained its independence, it was obvious that fiscal and monetary policy had to coordinate with one another. Numerous pieces of legislation and laws are created and institutional structures are made to provide the SBP its independence. The Fiscal and Monetary Policy Coordination Board was established in 1994 to achieve stronger levels of collaboration and coordination among both policies (Catenaro, 1994).

By the end of December 2022, Pakistan is expected to have accrued $126.3 billion in external public debt and obligations. The government of Pakistan owes several creditors nearly $77 billion (or $97.5 billion) in direct debt. Firms in the public sector that are managed by the government owe multilateral creditors an extra $7.9 billion. (Nordhaus, 1994)[4]. The international organizations to which Pakistan is indebted amount to approximately $45 billion, constituting the lion's share of Pakistan's total debt among the most significant international creditors for Islamabad are the World Bank ($18 billion), the Asian Development Bank ($15 billion), and the International Monetary Fund ($7.6 billion). Additionally, Pakistan is in debt to the Asian Infrastructure Investment Bank and the Islamic Development Bank but for significantly less money.

[4] https://www.cadtm.org/Pakistan-The-IMF-deal-and-its-critics

Even though it accounts for a sizeable portion of Pakistan's total debt, multilateral debt does not pose any substantial concerns to Pakistan in the short term. The majority of loans include somewhat lenient terms with repayment periods ranging anywhere from 18 to 30 years; the majority of installments are broken up into a huge number of smaller transactions. In the fiscal year 2022–2023, Pakistan made payments to multilateral creditors amounting to $4.5 billion which represented one-fifth of the country's total debt repayment for the year (Adam, 2011).

There is a significant amount of private debt held by Pakistan; the majority of this debt comes in the form of private bonds, the total value of which is 7.8 billion dollars and includes Eurobonds and worldwide Sukuk bonds. A portion of this debt is relatively recent during the most recent fiscal year, Pakistan was successful in raising $2 billion through the issuance of Eurobonds with maturities of 5, 10, and 30 years with interest rates ranging from 6% for the first five years to 8.87 % for the last 30 years (Semmler and Wenlang, 2003).

There are approximately $7 billion worth of foreign commercial loans held by Pakistan and it is very possible that this number will rise to about $9 billion by the time the current fiscal year comes to a close. Since Pakistan has already serviced most of its major Chinese commercial loans to institutions, a significant portion of Pakistan's commercial credit portfolio is held by financial institutions based in China. (Akram, 2011).

The majority of commercial loans come with stringent repayment requirements which can range anywhere from one to three years to complete. The interest rates attached to the loans are also quite hefty. Some of them are measured against the London Interbank Offered Rate, which is more commonly referred to as LIBOR. Others such as Chinese commercial loans are tied to the Shanghai Interbank Offered Rate which is abbreviated as SHIBOR. For instance, Pakistan just recently received a commercial loan from the China Development Bank in the amount of $2.2 billion at a rate that was 1.5 percent higher than the six-month SHIBOR rate; this loan is to be repaid over the course of three years (Alzyadat, 2020).

Approximately 27 billion dollars' worth of debt is owed to China by Pakistan. This figure takes into account about $7 billion worth of Chinese commercial loans in addition to debt between the two countries totaling approximately $10 billion, with a

further $6.2 billion in debt that was issued by the Chinese government to government-owned firms in Pakistan. In addition to this, the State Administration of Foreign Exchange (SAFE) of China has deposited foreign currency totaling four billion dollars with the State Bank of Pakistan. The bilateral loan has a maturity duration of twenty years and is characterized by concessional terms. Pakistan owes the Chinese a total of 27 billion dollars and the two countries also has a facility for exchanging currencies[5].

The high amount of external debt that Pakistan owes comes with a significant amount of repayment pressure. Pakistan is required to make repayments on its external debt beginning in April 2023 and continuing until June 2026. This is a major issue for a country with a $350 billion economy. The largest repayments that were made over the course of the subsequent three years witnessed significant involvement of commercial banks in China, creditors from the private sector, and Saudi Arabia. (Bohn, 2015).

The pressure for Pakistan to make its debt payments is coming up soon. The cost of servicing the external debt is estimated to be $4.5 billion[6] from April to June of 2023. The largest repayments are due in June, which is also the month that a Chinese SAFE deposit for $1 billion and a Chinese commercial loan worth around $1.4 billion would mature. The Pakistani authorities have high hopes that they were able to persuade the Chinese to restructure and roll over both of their debts as this is something that actions were taken previously by both the government of China and commercial banks.

Even if Pakistan is successful in meeting these obligations, the upcoming fiscal year would be more difficult because the amount of money required to service the country's debt has increased to about $25 billion. This consists of $15 billion in short-term loans and $7 billion in long-term debt, the latter of which includes an essential repayment of $1 billion on a Eurobond during the fourth quarter. The Pakistani government presumes that the creditors roll over the short-term loan repayments every year; the short-term debt obligations comprise deposits totaling $4 billion from Chinese SAFE, $3 billion from Saudi Arabia, and $2 billion from the United Arab Emirates. In a separate matter, Pakistan was required to reimburse Chinese banks for additional long-term commercial loans totaling $1.1 billion (Chowdhury et al., 2013).

[5] https://www.usip.org/publications/2023/04/pakistans-existential-economic-crisis

[6] https://tribune.com.pk/story/2410740/rda-inflows-surpass-6b-in-april

In the fiscal years 2024–2025, the cost of Pakistan's debt servicing is projected to be close to $24.6 billion. This figure takes into account the country's $8.2 billion in long-term loan responsibilities as well as its $14.5 billion in short-term loan repayments. Additionally, this figure takes into account substantial repayments to Chinese lenders totaling $3.8 billion. In 2025–2026, the burden of debt service is projected to be at least $23 billion; in that year, there is a total of $8 billion in long-term debt that Pakistan must repay.

This includes $1.9 billion owed to a Chinese commercial borrower and $1.8 billion for a Eurobond. The burden of debt service is likely to be at least $23 billion in 2025–2026 (Dahan, 2021). The revenue generated through the export of goods and services, foreign direct investment, and the inflow of remittances from those working abroad are essential for Pakistan so that debts are paid and a sovereign default is prevented.

On the other hand, it is anticipated that none of the three inflows was sufficient to keep up with the rising strain associated with the obligation to repay debt. For instance, Pakistan's overall earnings from exports and remittances over the course of the past three years amounted to $164 billion, which is significantly higher than the $170 billion worth of products that Pakistan imported during the same time period[7]. It is very possible that throughout the subsequent three years, the total dollar amount of imports was exceeding the entire dollar amount of exports and remittances. This has resulted in a current account deficit that was require financing from outside sources (Hanif & Arby, 2016).

In terms of exports, the IMF's projections for 2022-23 anticipated almost $36 billion in total exports. That has since been amended with a new estimate ranging from $28 billion to $29 billion, business disruption and rising expenses of running a business that has resulted from the unpredictability in the country. It is anticipated that the level of direct investment from overseas was remain relatively low. In recent years, annual investment has been averaging a pitiful $2 billion due to the hard economic environment and frequent legislative changes; it is the best-case scenario that comparable levels of investment continue for the next few years. The recent restrictions that the government has placed on the free movement of capital within and beyond the country have also affected investor mood (Leeper, 1991).

[7] https://www.usip.org/publications/2023/04/pakistans-existential-economic-crisis

The administrators of Pakistan's economy have just two choices available to them for dealing with the country's mountain of external debt. The first option is to obtain new loans and look for ways to roll over existing debt. The ability of Pakistan to enter the market for sovereign finance is however constrained as a result of downgrades imposed by international credit rating agencies. If the leadership of Pakistan wishes to avoid a default, they needed to rely on partners in the Middle East and China, not only for the rollover of existing loans but also for new loans (Iyoboyi, 2017).

The exact sum that Pakistan may want was determined by the negotiations that take place with the IMF. If the IMF is successful in getting its program back on track, the amount it requests was less than what it would be if the program were to fail entirely. Due to the weight of its mounting external debt over the next three years, Pakistan was requiring not only a new IMF program but also additional loans and rollovers from its allies in the Middle East and China. This is the case even if the currently derailed IMF program is resurrected and finished over the course of the summer (Missale, 2011).

There is also the potential that Pakistan was trying to negotiate an anticipatory debt restructuring. By doing so, the pressure of repayment was reduced and the economy was spared some of the rare dollars which are required to cover the gap in the current accounts of the country. The government of Pakistan has held meetings with investment banks and experts to discuss potential reorganization strategies. Nevertheless, for the time being, officials are hesitant because a reorganization process was both painful and lengthy and also because of the political backlash that was connected with concomitant austerity measures (Ayyoub, 2012).

Budgetary funding deficits and the administration of monetary policy are the primary aims of the interplay between fiscal and monetary policies. The measures taken by monetary authorities can have a variety of distinct effects on public debt. On the other hand, the approach that the government uses to finance its operations has an effect on how monetary policy is conducted and can limit the independence of the state bank. The suitable operational procedures are necessary for effective policy coordination between the fiscal and monetary sectors. To enhance the efficiency of the country's fiscal and monetary policies, there is a need for a better degree of coordination between the various policies and the public debt (Beetsma et al., 2017).

In the absence of effective policy coordination, there is a risk of financial instability which may be followed by rising rates of interest, currency market pressures,

accelerated inflation, and dampened economic growth (Sargent et al., 2019). At the same time, monetary and fiscal policies are created and put into effect by separate official bodies, each of which has its own goals, resources, limits, and motivations. Because of this, there must be a significant amount of integration between the various agencies for monetary and fiscal policies to be effectively implemented.

When there is effective coordination, it is much simpler for policymakers to accomplish the efficiency with which they have articulated their desired policy outcomes. Furthermore, it ensures the dedication of decision-makers accountable for these two policies to collectively established goals, thereby reducing the issue of time inconsistency in the formulation of monetary policy. (Alzyadat, 2020).

Within the confines of this overarching structure, the most efficient method of coordination between a country's fiscal and monetary authorities depends on thespecific traits of the country as well as the level of institutional development in that country. Coordination can take the form of regular meetings between the authorities tomake decisions collectively on policy design and implementation, or it can be determined by a set of rules and procedures that reduces the need for such meetings. (Orphanides, 2017).

If monetary and fiscal authorities do not work together to coordinate their policies the overall performance of the economy would suffer as a result. A policy attitude that is weak in one area places a strain on another area of policy and cannot be maintained over the long term. For instance, if fiscal policy is too loose, this was put pressure on monetary policy to become more restrictive even though monetary policy cannot completely offset financial inequalities. Additionally, monetary policy was weakened because of the loss of credibility of the whole policy framework, which is caused by the long-term instability of such a policy combination. (Bohn, 2015).

This has occurred because such a policy mix is inconsistent (Aiyagari et al., 2014) To effectively coordinate monetary and fiscal policies, it is necessary to take into consideration, right from the start, the requirement for policy sustainability. One of the basic conditions for effectively coordinate monetary and fiscal policies, it is necessary for both policies to be moving in the same direction. that can be maintained in the long term. Even if the people in charge of making decisions carefully coordinate their policies, the coordination was not successful if the intended medium-term trajectory of either or both of the policies cannot be sustained.

Acquiring credibility for both of the policies is vital to the overall policy framework band it is of equal importance to do so for both of the policies. The achievement of price stability may result in extremely high-interest rates or a significant reduction in international reserves if the markets cast doubt on the credibility of policy as a result of an unfavorable perception of the government's fiscal stance. The only way for the monetary policy to achieve its goal of stabilizing expectations is if the public finances do not give rise to expectations that are likely to make the situation worse (Pesce, 2012).

In the same context, the less credible monetary policy is the greater in weight that is placed on fiscal policy, as a result of the fact that interest rates are likely to be higher than they would be otherwise. Additionally, the process of coordination needs to take into consideration the fact that the modifications to monetary policy and fiscal policy occur on separate time scales. Changing the fiscal attitude through policy action typically takes a significant amount of time and effort (Catenaro, 2017).

On the other hand, monetary policy can be changed daily which can affect changes in monetary conditions. Due to this, it is unavoidable that monetary policy has to shoulder the majority of the responsibility for any "fine-tuning" of stabilization policies (Bohn, 2015). It is necessary to coordinate policies on not just one but two different levels. To begin, there is an urgent requirement to deal with the short-term challenges that arise in the implementation of monetary and fiscal policy. Coordination of public policies needs to take into account the long-term macroeconomic effects that could be the result of an imbalanced policy mix. These consequences have the potential to have a negative effect on the economy. In the short term, the purpose of policy coordination is to make certain that orderly financial conditions, including price stability, are achieved. Priority should be given to the nation's monetary policy and the management of its public debt. (Presbitero, 2012).

Long-term, the key to solving the policy coordination problem lies in figuring out how to create a mix of monetary and fiscal policy that is both well-balanced and encouraging to keeping the economy on its equilibrium development path. This involves both containing inflation and fostering financial conditions that are conducive to long-term growth. This requires keeping the budget deficit at a manageable level so that it can be financed through the normal functioning of the capital markets. This should be done without resorting to direct monetary financing from the state bank and it should also be done without relying on an excessive amount of borrowing from other

countries (Chowdhury et al., 2019).

A crucial condition for effective policy coordination is the combined formulation of objectives and policies by the authorities in charge of the economy's monetary and fiscal policies and operations. The goal of maximizing the impacts of policies would not be achieved in a scenario in which the many policies responding passively in one policy area to the dominant stance taken in another, policies are brought into alignment with one another. For instance, if a government adopts a fiscal policy that is too permissive, which requires an extremely tight monetary policy as a kind of compensation, this may discourage private investment and dramatically drive up the cost of borrowing for the government (Missale, 2011).

For fear of losing money, investors would ask for greater rates of interest, debt service costs would rise, and the government would have to cut the primary deficit in order to match the level of funding at its service. In contrast, the implementation of a restrictive monetary policy may initially result in a rise in the government's debt servicing expenses. However, if implemented in an integrated way with a responsible fiscal policy, this approach would contribute to the establishment of confidence, ultimately leading to the absence of expected capital loss. Consequently, this would yield reduced interest rates and foster a more enduring growth of the domestic financial markets. (Alesina, 2014). The results may be counterproductive if the monetary authority pursues policies of restraint without an essential level of interaction with the budgetary authority. This is primarily because as was stated earlier, establishing credibility in monetary policy becomes challenging when fiscal policy lacks credibility. If the monetary authority does not coordinate the outcomes may out to be counterproductive with the implementation of fiscal authority.

The proper amount of monetary restraint could further worsen the budgetary cost of debt service which could threaten the fiscal position's ability to remain sustainable (the so-called snowball effect). In the worst-case scenario, a contractionary monetary policy could end up leading to an effect that is paradoxically expansionary on aggregate demand as a result of the increased interest payments made by the public sector. If the monetary authority is unwaning to back down from its steadfast policy stance because this would put the major goal is to keep prices stable at risk then the fiscal authority is obligated to work toward increasing the size of the primary fiscal surplus. In addition, a tightening of monetary policy could make the fiscal situation worse because the higher interest rates because of this would likely reduce economic

activity and as a result, decrease tax revenues (Schclarek, 2018).

At the same time, the slower rate of growth could increase the ratio of debt to GDP. In conclusion, because of the slower rate of economic expansion, there was a slowdown in the expansion of reserve money and the seigniorage was decreased (Akram, 2012). The government's ability to issue credit in the stock market in the amount required and at prices that are feasible given the circumstances is directly impacted by the monetary policy instruments used and the design of those tools.

In particular, the monetary authority can contribute to a reduction in the cost of servicing public debt by increasing the liquidity of government securities. They can do this by conducting open market operations, as well as regulating the modalities of rediscount and reserve requirement regulations. When conducting operations on open markets, the state bank is required to make the difficult choice of whether to interfere by engaging in transactions involving its paper or deposits or those involving government securities (Singh, 2018).

The characteristics of the stock market and the ability of the monetary and fiscal authorities to align policy objectives and implementation abilities processes are two important considerations that should guide your decision regarding which of these two instruments to use. The most efficient way for the financial market to function would be for the state bank to carry out the government's engagement in open market activities by trading bonds issued by the government on the secondary market, while the Treasury issues loans on the main market. From the perspective of market efficiency, this option would be considered the most optimal (Aiyagari et al., 2014). As of this, the authorities in charge of the economy and the money supply can pursue their respective goals at the same time while the liquidity of government assets is likely to improve. Without a secondary market, however, it would be necessary for both the government and the central bank to deal only with the main market. In this scenario, the significance of policy coordination cannot be focused if the objectives of both monetary policy and fiscal policy are to be accomplished.

In the same way, the manner in which monetary policy is carried out has an impact on the capability of the finance ministry to sell debt on the open market, the government's finance strategy has influence over the implementation of monetary policy and imposes limitations on the operational integrity of the state bank. In other words, the implementation of monetary policy directly influences the fiscal authority's

capability to issue debt in the financial market. How the public debt is managed and influence government spending and interest rates in general making it more difficult for the state bank to accomplish its goal of preserving the ordered behavior of the monetary aggregates. In addition to this, the management of public debt has the potential to affect the demand for money and the growth of the regional financial markets (Aiyagari et al., 2006). Interest rates were impacted by the degree to which the public debt is seen as being sustainable.

In particular, if players in the market believe that continued growth in debt is not possible to manage, the credibility of the overall policy mix was suffered which would increase interest rates. High rates of interest are a major factor in countries that have liberalized their capital account due to this capital was drawn from abroad which necessitated the state bank engages in monetary sterilizing procedures. This further complicates the process of monetary management (Thao, 2018).

The amount of the public debt stock and the correlation between the rates of interest and the GNP growth rate all play a role in determining whether or not the public debt was able to be serviced in the future. Market participants view a challengeto the reliability and credibility of monetary policy caused by large levels of public sector debt as a percentage of GDP. The presence of a significant amount of public sector debt may give rise to the potential risk of its future monetization or serve as an indicator of an underlying fiscal policy stance that is characterized by weakness.(Tabellini, 2019).

These problems are greatly compounded as the average length of maturity of the public debt decreases and as the ratio of financing needs of the government to the monetary base increases, thereby reducing the room for flexibility available to the fiscal authority. The shorter the average length of maturity of the public debt, the higher the ratio of the financing needs of the government to the monetary base (Adam et al., 2011). Finally, if the real interest rate is higher than the growth rate of real GNP, the stock of debt was expanded as a ratio to GNP even though the primary balance of the government is in the black. This occurs only if the real interest rate is higher. If there is a problem with the sustainability of the debt, the only practical solution is to implement a program of fiscal adjustment. This would reduce the government's requirements for financing and, eventually, produce a budget surplus (Togo, 2012).

This surplus would produce the resources necessary to reduce the stock of debt to levels that are sustainable. Avoiding a solution to the problem of a rising level of

public debt that involves replacing market-based financing with credit from the state bank, which would cause inflation, or using forced debt placements, which would result in financial repression is the best course of action for the fiscal authority to take. The job of the monetary authority would end up being made more difficult, rather than simpler, regardless of whether the option was chosen (Beetsma et al., 2017).

Summary

Pakistan's journey of accumulating debt, which began shortly after its independence in 1947, reveals a complex interplay of domestic and external borrowing, influenced by various economic and political shifts. The initial reliance on foreign aid and loans set a precedent for the country's borrowing practices, leading to significant changes in its debt profile over the decades. The 1970s and 1980s marked a shift towards domestic borrowing, with the government increasingly tapping into local sources to finance its budget deficits and development projects. This period laid the foundation for the country's current debt structure.

Entering the 1990s and early 2000s, Pakistan engaged in structural adjustment programs with international financial institutions, which expanded its access to external borrowing. These programs aimed at macroeconomic stabilization and economic reforms but also increased Pakistan's reliance on foreign loans. Recent years have witnessed a substantial rise in Pakistan's external debt, driven by challenges in balancing its payments and a growing dependence on international borrowing. This debt includes obligations to multilateral and bilateral lenders and the issuance of international bonds.

Efforts to manage this burgeoning debt include debt relief programs, debt restructuring, and refinancing to enhance debt sustainability. Despite these measures, Pakistan's economic landscape has been marred by high inflation, fiscal imbalances, and low capital inflows, further exacerbating the debt situation. The government's strategy to handle this predicament involves maintaining sustainable debt-to-GDP ratios and optimizing debt service costs through improved revenue collection, expenditure control, and prudent debt usage. However, the effectiveness of these strategies is continually tested by economic shocks like the Covid-19 pandemic and the global financial climate.

The State Bank of Pakistan (SBP) plays a crucial role in this scenario, where its monetary policies significantly impact the management of public debt. The independence and operational efficiency of the SBP are vital for effective debt

management and economic stability.

Solo policy, meaning the use of only one policy approach for public debt management, may not be as effective as a coordinated approach. Public debt management is a complex task that requires a comprehensive strategy. Relying solely on fiscal or monetary policy may limit the effectiveness of managing public debt. It is often more beneficial to have a combination of both policies working in tandem to address different aspects of debt management. Both fiscal and monetary policies play important roles in public debt management. Fiscal policy refers to government actions related to taxation and spending, while monetary policy involves the control of money supply and interest rates by the central bank. In the case of public debt management, fiscal policy can be effective in controlling government spending and ensuring that revenue is sufficient to meet debt obligations. On the other hand, monetary policy can influence interest rates, which can impact borrowing costs and the ability to service debt. So, it's a combination of both policies that can help manage public debt effectively. The coordination of monetary and fiscal policy can be highly effective in managing public debt. When monetary and fiscal policies work together, they can create a more balanced and coordinated approach to debt management. One example of coordinated monetary and fiscal policies is when the government implements expansionary fiscal measures, such as increasing government spending or cutting taxes, to stimulate economic growth. At the same time, the central bank can support these efforts by implementing an accommodative monetary policy, such as lowering interest rates or implementing quantitative easing, to provide liquidity and encourage borrowing and investment. This coordinated approach helps boost economic activity while managing public debt effectively.

CHAPTER 3

REVIEW OF LITERATURE

In the context of research investigations, the chapter known as the "review of the literature" is an essential component since it offers a full overview of the preexisting body of knowledge and empirical studies that are connected to the research issue. Pakistan's monetary and fiscal policies, along with the country's increasing public debt, needs to be coordinated, the purpose of the review of literature is to analyze and summarize the pertinent academic papers, research articles, and reports that have been published on the issue. These can be found in a variety of formats such as books, journals, and reports.

Researchers can detect gaps in the present understanding of the subject by analyzing the existing body of literature on the subject. This gives them the ability to highlight places that have not been investigated to a significant extent, as well as areas that call for greater investigation. The review of previous research is beneficial to the process of building the study's theoretical framework. It lays the groundwork for the formulation of hypotheses and research questions based on the findings and theories proposed by earlier researchers and gives a framework for doing so.

3.1 Theoretical Review

Keynesian Theory:

The Keynesian hypothesis is an economic framework that places significant emphasis on the importance of government intervention in managing economic fluctuations and ensuring economic stability. An honored economist John Maynard Keynes is credited with developing this hypothesis. It came into being throughout the 20th century, primarily as a reaction to the Great Depression that occurred in the 1930s, which made the shortfalls of classical economic theories more apparent as discussed in Keynes (1971).

Keynesianism, an economic theory, focuses significant emphasis on the influence of aggregate demand in determining the level of economic activity and employment within a certain economy. The theory implies that fluctuations in total demand, which leads to the comprehensive desire for products and services within an economy, can contribute to periods of recession or economic downturns. In economics,

the term "aggregate demand" describes the total demand for all products and services (Colander, 1995).

Keynes theorized that when the economy is experiencing a downturn of some kind, such as a recession or a depression, the spending and investment of the private sector tend to diminish. That leads to decreased aggregate demand and greater unemployment. In these kinds of predicaments, he pushed for the intervention of the government as a means to increase aggregate demand and drive economic growth.

The Keynesian economic school of thought maintains that the government ought to take an active position in the management of the economy at all times, especially when the economy is in a state of decline. This goal is attainable through the use of various fiscal and monetary policy tools (Coddington, 1976).

Keynesians believe that when the economy is in a downturn, the government should raise its spending on public projects and infrastructure (such as the construction of roads, schools, and hospitals) to stimulate demand and generate employment opportunities. To stimulate the economy in the near term, it is okay for the government to borrow money in order to finance its increased expenditure, which is also appropriate. A flexible monetary policy, which includes decreasing interest rates to encourage borrowing and spending, is another policy that Keynesians support and push for. When interest rates are reduced, it becomes less expensive for companies and individuals to borrow money for financial investments and consumer expenditures (Coddington, 1976).

Keynesian economics theory focuses considerable focus on the importance of managing aggregate demand as a means to achieve full employment and prevent extended periods of economic stagnation. According to the Keynesian perspective, the economy is capable of self-correcting over time. and returning to full employment without the intervention of the government. On the other hand, they contend that in the short run, action from the government is required in order to forestall extended recessions and reduce the severity of economic suffering.

Keynesian economics has had a significant impact on many facets of contemporary economic policy and has served as a foundation for the execution of a wide range of government policies, particularly during times of economic crisis. However, it is important to keep in mind that there are a variety of alternative economic

theories and schools of thought, each of which has a unique point of view on the proper administration of economic systems. The formulation and implementation of economic policies generate a great deal of discussion and can look very different depending on the nation, economy, and other factors.

Keynes (1936), is considered to be the work in the field of Keynesian economics because it lays out the core ideas behind the theory. Keynes outlines the reasons why he believes the government must step in and stabilize the economy and work towards achieving full employment. Cate & Harcourt (2012), is a collection of essays that investigate and assess the long-term effects that Keynes' General Theory has had. It investigates how the theory has changed throughout the years as well as how it has been understood by various people.

Keynes's (1971) significant publications span multiple volumes and cover, among other things, his essays and letters on various economic topics. It gives an in-depth analysis of his economic concepts as well as his proposals for public policy. Coddington (1976) provides a thorough and methodical investigation of Keynesian economics. It investigates both the theoretical basis of this school of thought and its practical consequences.

Colander (1995) offers a summary of Keynes's General Theory, discussing its significance in modern economics as well as its historical background and context. Taylor (2008), which can be found on the website of the Library of Economics and Liberty, offers a condensed summary of Keynesian economics, including its principles and the policy implications that stem from them.

Ricardian Theory:

The Ricardian theory is a school of economic thought that was pioneered in the early 19th century by David Ricardo, a British economist. This theory is sometimes referred to as the Ricardian model of international trade. One of the most well-known and influential ideas in the field of international trade, the comparative advantage theory seeks to explain disparities in the levels of relative labor productivity and opportunity costs among different nations' trading patterns.

The notion of comparative advantage is the overarching idea that underpins Ricardian economic theory. In other words, it indicates that a country can benefit from producing and exporting items in conditions where there is a comparatively reduced

opportunity cost, even if it is less efficient at producing all goods than another country. The concept of opportunity cost refers to the expense incurred in the production of a single unit of a particular good, measured in relation to the alternative goods that could have been produced instead of that unit.

The labor theory of value, which stated that a product's worth was established by the time and effort required to produce it, was an important theoretical influence on David Ricardo. According to Ricardo, the worth of an item is established by the time and effort put into its production. The Ricardian theory is favorable to the concept of open markets and free commerce between nations. It posits that when countries specialize in the manufacture of commodities that they can produce more efficiently, and then engage in trade with each other, they can jointly raise their total welfare as well as their economic well-being.

Even if one nation is more productive than another in terms of the production of all goods, the idea states that both trading partners can benefit from engaging in trade. Both countries can consume a combination of products that they would not be able to obtain without trade because they have specialized in the manufacture of goods that have reduced opportunity costs and trade with one another (Togo, 2012).

The Ricardian model simplifies things by making a number of assumptions, such as the assumption of perfect competition, ideal returns to scale, and the lack of transportation costs and trade obstacles. The Ricardian theory has made a substantial contribution to the field of international trade research and continues to be an important fundamental notion in economics. However, it is essential to keep in mind that since Ricardo's time, new theories and models of international commerce have been created, and the dynamics of international trade can be impacted by a broad variety of factors in addition to just relative labor productivity. The understanding of international trade patterns has been built upon and increased thanks to the development of modern trade theories such as the Heckscher-Ohlin model and the New Trade Theory (Wibowo, 2017).

The effect of indirect taxation on the inflation is an additional and more direct tool of fiscal authorities. Furthermore, the perceptions and anticipations of the broader public views and expectations regarding the significant and persistent budget shortfalls and the resulting, subsequent need for borrowing may lead to a decrease in confidence

on the economic prospects. This lack of confidence may be caused by the fact that the deficits are expected to continue. Similarly, when people learn that their government is borrowing money to spend, they may conclude that doing so will increase future tax rates and hence reduce their spending while increasing their savings. The term "Ricardian equivalence" is used to describe this phenomenon.

Despite the central bank's independence and freedom from the government's fiscal requirements, there is a risk that the central bank may implement a morerestrictive monetary policy in order to reduce the effects of expansionary fiscal policy on aggregate demand and hyperinflation within the economy. This objective can be achieved by the implementation of monetary policy tools such as raising interest rates or implementing measures to restrict credit availability within the financial sector. The potential rise in interest rates could potentially impede economic growth by attracting short-term and easily reversible capital inflows. This, in turn, may contribute to inflationary pressures and currency appreciation, ultimately posing risks to the macroeconomic and financial stability of the nation. (Tabellini, 2019).

Extremely difficult budgeting issues can occasionally even bring about a crisis in the economy. The coordination and application of monetary and fiscal policy determine how far the central bank will go in reducing inflation. As a result, the concepts of fiscal supremacy and monetary domination have assumed a greater level of significance in this context. When the fiscal authority autonomously defines the present and future budgets of the economy, as well as the proportion of revenues that come from bonds and seigniorage, the economy is said to be under fiscal domination. Whereas under monetary domination, the primary deficit is adjusted by the government with the goal of limiting public debt, while the central bank avoids engaging in debt monetization. (Sargent & Wallace 1981).

Inflation is caused by fiscal deficits because governments that have prolonged fiscal deficits resort to increasing the money supply as a method for financing the deficits, which ultimately results in inflation is a phenomenon in the money supply (Mishkin 2007). Because of this, it's possible to draw the conclusion that, to maximize the amount of welfare, fiscal and monetary policy must be integrated and coordinated, despite the fact that they are both complex policy tools with opposing goals.

Before the reforms of the financial sector were implemented in 1989–1990, there was a lack of coordination observed between these two essential policies in Pakistan. The reforms of the financial sector were implemented. Before that, the SBP did not have its independent authority, and monetary policy was effectively subservient to fiscal policy. Due to the need of coordinating both fiscal and monetary policies, which was necessitated by the process of financial reform and restructuring, a board for monetary and fiscal coordination was established in the year 1994.

Hanif and Arby (2007) for further information; its primary goals include the coordination across important policies, such as fiscal policy, monetary policy, and exchange rate policy, in addition, it is imperative to provide optimal coordination among macroeconomic objectives including inflation, rate of growth and financial indicators. There have only been a handful of studies conducted in Pakistan that have brought attention to the problem of the integration of fiscal and monetary strategies. Some of these studies include Agha and Khan (2006), Arby and Hanif (2007), Arby and Hanif (2010), and Nasir et al (2010).

To satisfy the government's consolidated intertemporal budget constraint, the concept of the "first mover" the central bank needs to exercise regulatory control over the fiscal authority, requiring that it adopt a series of primary surpluses (and loans) that correspond to the series of money issued by the monetary authority. In other words, the government should be required to choose a primary surplus (and loan) schedule that is consistent with the schedule of new currency issued by the central bank (Camous, A., & Matveev, D. (2023).

According to Sargent and Wallace, (1987) study, fiscal factors do not play a significant in the process of price determination. As a result, central banks that are devoted to price stability can undoubtedly achieve price stability regardless of the policies pursuedby the government. In similar way, in a system characterized by fiscal dominance, the major responsibility for selecting the course of action regarding the primary surplus is with the fiscal authorities. Any changes that need to be made by the authority to steer clear of dangerously high levels of debt must be funded through seigniorage income (Sargent, T., & Wallace, N. (1987).

In light of the course that has been charted out for the primary surplus, a restrictive monetary policy could end up leading to a rise in prices rather than a decrease. The response to inflationary shocks resulting from monetary policy is likely

to yield unexpected consequences: higher rates of interest are likely to result from today's contractionary monetary policy, will result in higher debt service costs incurred by the government, and will necessitate expansionary monetary policy in the future to generate greater seigniorage revenue. Therefore, what is going to take place is that rational actors will predict an increase in the generation of money in the future and bid the price level up now.

Uncomfortable monetarist arithmetic like this was developed by Sargent and Wallace. Aiyagari and Gertler (1985) and Leeper (1991) present the concept that the utilization of various combinations of potentially dependent policy rules, imposed by fiscal and monetary authorities, can result in unique equilibrium trends for nominal variables and impact the efficacy of monetary policy in managing inflation. This idea was presented by the authors. Both types of research pointed to the fact that a passive central bank that follows monetary policies that are submissive to the behavior of the fiscal authorities will result in greater average inflation. This was demonstrated in both studies. Institutional structures may be the source of how dependent monetary policy is on government spending.

The correlation between the independence of central bank guides (Alesina and Summers 1993; Cuckierman 1992; Cuckierman, et al., 1992) and the level of fiscal dominance suggests that these indices offer valuable insights into inflation outcomes. This phenomenon arises due to the tendency of highly autonomous central banks to show reduced concern for the fiscal requirements of the government when formulating their policies.

3.2 Empirical Review

Several studies have been written that investigate the empirical importance of the question of how two policies should be coordinated with one another. For instance, in the case of the countries that make up the G-7, the nature of the interdependence between fiscal and monetary policy was unequal between countries. In the United States and the United Kingdom, it was discovered that monetary policy acted in reaction to fiscal expansion; however, in France, Italy, and Germany, no evidence of the same kind was discovered (Muscatelli et al., 2002). Rather, monetary policy serves as the impetus for fiscal policy, and we have seen some regime shifts in the way these two policies interact with one another in France and Germany.

Semmler and Zhang (2003). Zoli (2005) discovered evidence of fiscal

dominance in the cases of Brazil and Argentina, both of which are developing economies. On the other hand, the position of fiscal policy would weaken, and the positionof monetary policy would strengthen, the number of nontraded goods in an economy ispositively correlated with the degree of optimal movement of capital, so a lower degree of optimal capital mobility is associated with a bigger presence of nontraded goods. Additionally, a larger country relative to other countries' markets is also associated witha lower degree of perfect capital mobility. In this scenario, the structural elements of the economy would be the ones to decide what the best combination of policies shouldbe.

Because if there is a spike in domestic credit, there will be a corresponding decrease in net foreign reserves, there will be no effect on the monetary aggregates under a regime with a fixed exchange rate. This is the reason why monetary policy under such a regime is ineffective (Cukierman, 2012). The initial rise in the money supply that follows an increase in domestic credit will cause a decline in the local interest rate; as a consequence, there will be capital outflows, which will then be reflected in a loss of foreign reserves and a decline in the money supply.

The flow of cash will continue even after the local interest rate has returned to its starting point. In the end, the only effect that the expansionary monetary policy will have had was a change in the composition of the sources of the money supply. There will be no change in the overall level of the monetary aggregates or the interest rate as aresult of the expansionary monetary policy. The results drawn above would require some qualification in the event that capital mobility is less than ideal or if there are items that are not exchanged (Dar, 2014).

Because changes in the stance of fiscal policy will now cause movements in domestic interest rates, if capital mobility is less than ideal, fiscal policy will lose some of its effectiveness. This is because domestic interest rates now fluctuate in reaction to changes in the stance of fiscal policy. This, in turn, would lead to portions of the privatesector being forced out of the market. In the same vein, the efficacy of monetary policywill increase because interest rates are subject to change in response to measures taken by the authorities in charge of monetary policy, which in turn will have an impact on the overall level of aggregate demand.

In an environment where nontraded items are present, the effectiveness of fiscal policy would be reduced to some degree, while the monetary policy may still have some

bearing on the level of aggregate demand. For instance, an increase in the money supply would not only affect the balance of payments but also the output levels of nontraded goods; the greater the proportion of nontraded goods to total output in the economy, the more effective monetary policy will be even in the context of a regime with a fixed exchange rate (Dahan, 2021).

Even while the economy is protected against nominal shocks from other countries when the exchange rate is fixed, it is more vulnerable to real shocks when the exchange rate is fixed. In light of what has been said about the relative efficacy of monetary and fiscal policies, the function of shock absorber in the event of external shocks would mostly (or fully, in the case of a small country with perfect capital mobility and no nontraded goods) rest on fiscal policy.

In spite of this, there are bounds to the effectiveness of fiscal policy when operating within a system with a fixed exchange rate (other than those arising from relaxing the assumptions of perfect capital mobility and the absence of nontraded goods). These constraints, which get more severe the longer the period that is taken into consideration, are the result of a possible erosion of trust in the exchange rate peg that could be the result of an expansionary fiscal policy. They become more severe as the time period is increased.

A policy like this would result in a shortfall in the current account portion of the balance of payments. Over time, a shortfall in the current account portion of the balance of payments becomes unsustainable, and market participants would anticipate a devaluation, which would result in an immediate increase in interest rates. Furthermore, an expansionary fiscal policy would result in inflation, which would reduce competitiveness in the market (Dooley, 2000).

In an environment with a flexible exchange rate system, the level of domestic output can be increased through the employment of monetary policy, however, the effectiveness of fiscal policy is eliminated. There is little doubt that in the theoretical setting of a flexible exchange rate, the optimal policy mix in the case of monetary policy alone consists of only monetary policy. This is the case since perfect capital mobility exists alongside the absence of nontraded products.

Even in a system with a flexible exchange rate, however, there is still a place for fiscal policy to affect the economy if the structural components of the economy are significantly different. In addition, on a more pragmatic level, cautious fiscal policy

will always be important to establish overall policy credibility and to prevent overburdening monetary policy. This is because fiscal policy is the primary driver of overall policy.

In a system with a flexible exchange rate, the authorities have complete control over the monetary stock. An example of this would be how a monetary expansion would initially result in a lower domestic interest rate, which would then stimulate an increase in output. However, because the domestic interest rate is currently lower than the international interest rate, capital outflows would be the inevitable result of this situation. The outflow of capital will result in a depreciation of the currency's exchange rate, which will boost the country's competitiveness and lead to an even higher level of output.

The fact that the market is prepared to lend to the government funding government operations for lengthy tenures at interest rates that are lower than the policy rate demonstrates the broad confidence that the market has in the government's macroeconomic policies. Following the commitment made by the government, there have been no fresh borrowings made from the SBP during the current fiscal year. The outstanding debt collected from SBP in prior years was reduced by a net amount of Rs 286 billion during the course of those years.

All of the new net foreigndebt that was accumulated during the first nine months of the current fiscal year came from multilateral and bilateral sources on concessionary conditions. It is anticipated that the trends described above will continue, and it is anticipated that the national debtprofile will recover significantly in the current fiscal year as compared to the previousfiscal year's end. It is anticipated that the proportion of debt that is raised through long-term instruments will continue to improve, while the proportion of debt that is held bythe SBP will decrease. Due to the re-profiling of short-term debt into long-term debt aswell as the dramatic drop in the cost of borrowing over longer tenors, it is anticipated that the interest expenditure will continue to be significantly lower than the amount thatwas projected for 2019-20.

The goal of the state is to decrease its "Gross Financing Needs (GFN)" over the course of the medium term by taking several different measures, the most important of which are as follows: (i) Enhanced liquidity management through the implementation of a unified treasury account; (ii) maturities are being extended in the local market in light of a cost-benefit analysis; (iii) Establishing a regular finance program based on Islamic principles; and (iv) to take full advantage of a discount currently offered (Von

et al., 2021).

In contrast to the previous year, a significant portion of the gross national loan accumulated in the initial nine months of the present financial year was mostly derived from the issuance of medium-to-long-term securities issued by the government,namely Pakistan Investment Bonds (PIBs), and National Savings Schemes (NSS). EvenThe government mostly used 12-month Treasury Bills (T-bills) to finance its fluctuating short-term debt.

The management of public debt has the potential to influence the desire for money can be analyzed using many approaches. First, rise in the holdings of government securities, in the absence of Ricardian equivalence, the presence of a positive income effect and this phenomenon has the potential to result in a rise in the demand for tangible assets. This would be the case even though Ricardian equivalence would not be present. Second, there is the possibility that money balances could be replaced with liquid government securities. This phenomenon would lead to a decline in the demand for monetary assets. As a last point of discussion, a level of public debt that is deemed unsustainable would, similar to what was stated earlier, generate predictions of future inflation, consequently, this would lead to a reduction in the demand for money. (Catenaro et al., 2017).

An increase in the domestic public debt that is required to finance a higher level of fiscal expenditure would give rise to an initial increase in interest rates. This would be the case because of the multiplicative effect of the two factors. As a direct consequence of this, capital would flow into the country until interest rates reached levels comparable to those found internationally, at which point the currency exchange rate would rise.

Under a system with a flexible exchange rate, the economy is more susceptible to nominal shocks from other countries. This loss of competitiveness would result in a reduction in the profitability of the private sector, which would then have effectively been crowded out by the expansion of the government's spending. When this occurs, monetary policy takes on the primary responsibility of acting as a shock absorber. This is the case even more so when the level of capital mobility is high and the quantity of nontraded items is low.

On the other hand, in the same way, that monetary policy was not entirely autonomous in the scenario where there was a fixed exchange rate regime in the longer

run, there are also restrictions on monetary policy in the scenario where there is a flexible exchange rate regime (Laurens et al., 2021). The sustained implementation of monetary expansion may lead to a phenomenon of exchange rate devaluation and inflation in the country that is not sustainable in the long term.

It is necessary to have proper supporting institutional and operational mechanisms to successfully coordinate monetary and fiscal policies. In this section, we will examine the various ways in which monetary and fiscal policies might be coordinated with one another, with a particular focus on the experiences of actual nations. It is important to point out right off the bat that the implementation of market-based policies has led to the current trends in this sector, that indicate the roles of monetary policymakers and fiscal policymakers are becoming more separate within their respective institutions.

This is something that should be mentioned. It is common practice to support making central banks independent from political control in order to mitigate the inflationary bias that is allegedly associated with governments. The assignment of monetary policy responsibilities to an independent central bank, which operates independently from political influences and possesses a significant level of operational freedom, is widely regarded as an appropriate approach for securing a monetary policy to long-term objectives and mitigating the desire to give up price stability in favor of short-term output benefits.

This is because an independent central bank can maintain its operational autonomy while remaining insulated from political pressures. However, as was mentioned earlier, even if a central bank has some sort of independence, which does not imply it is not responsible for coordinating its actions with the government's budget. The establishment of efficient mechanisms for coordinating policies between thecentral bank and the fiscal authority will play an essential part in the implementation of a sustainable monetary policy framework that maintains the freedom of the central bank.

In addition, to ensure the efficiency of central bank independence and to make it possible for the central bank to be held accountable, the central bank needs to be tasked with a single primary aim. Accountability does not require the pursuit of a single goal, but it is most effective when there is a single major goal against which performance can be evaluated. This is because there is a clearer picture of what success looks like. In this regard, the most recent trend has been to give primary responsibility

central banks play a crucial role in fostering and maintenance of price stability. (Muscatelli et al., 2002).

The statute that established the European System of Central Banks and the European Central Bank is a clear example of establishing price stability as the primary purpose of a central bank. This statute is one of the more recent pieces of legislation about central banks. Countries that have a history of government meddling in the functions of their central banks are also headed in this way. For example, Japan is preparing to implement a new statute for the Bank of Japan, which will improve the Bank of Japan's independence and identify price stability as the primary purpose of the institution.

Countries that are undergoing a period of transition are also moving in this direction, as can be shown by the shifts that took place in China in 2015 after a new statute governing the central bank was established. In a system that does not have an independent central bank with a defined goal of maintaining prices stable, there is the potential for the central bank to be subject to political pressures if there is a conflict between monetary policy and fiscal policy, and there is also the possibility that considerations of the short term could be prioritized over considerations of the long run.

In the context of such a structure, there should be provisions in place to forestall the accumulation of contradictions between monetary policy and fiscal policy. These include stipulations for a balanced budget or deficit limitation clauses, theestablishment of coordination committees, and restrictions on the amount of direct central bank credit that can be given to the government. The next sections contain a discussion of these various layouts.

The accumulation of inconsistencies can be avoided by the use of provisions provided by a framework that includes an independent central bank to maintain price stability (Orphanides, 2017). In addition, the procedure to follow to resolve disagreements if fiscal policy and monetary policy become discordant is rather straightforward. For instance, if the government adopts an expansionary fiscal policy, the central bank would likely adopt a more restrictive monetary policy, which will likely result in an increase in interest rates as well as the exchange rate.

To resolve the policy dispute, the government has two alternatives available to it: either it can amend the fiscal policy, or it can revise the price stability objective that has been allocated to the central bank. Either alternative is preferable to a compromise

by the "independent" central bank, which might damage the latter's reputation and, by extension, the credibility of any future efforts to bring down inflation.

What percentage of the budget the government can borrow directly from the bank is an issue that is strongly tied to the question of whether or not the central bank should be independent. When domestic securities markets are not well developed, direct credit from the central bank is the primary source of funding for the domestic government. As was noted before in this article, an excessive amount of central bank credit is likely to pose a threat to the stability of the macroeconomy.

Therefore, institutional arrangements that limit direct central bank credit to the government are essential to both improve the autonomy of the central bank and bring the danger of inflation under control (Pesce, 2012). Advances or overdrafts from the central bank to the government have often been subject to statutorily mandated limits on the amount that can be accrued in public debt. It is necessary to point out that the efficiency of such statutory ceilings is not ideal because there are ways to get around them, but this fact should not be overlooked.

As a result, the authorities have a responsibility to guarantee that their stated policy objectives are not undermined by indirect lending practices. Countries that have progressed to a more developed level in the coordination process are more likely to implement arrangements in which it is forbidden for the central bank to lend direct credit to the government. These arrangements are more likely to be the norm in developed countries.

Nevertheless, indirect central bank credit, which refers to the secondary market purchases of government bonds are made voluntarily (through outright open market operations, repurchase agreements, and the acquisition of government paper as collateral for the refinancing of the banking system), is typically allowed. This is done so that the central bank can manage overall liquidity in the system through the government's securities market.

This portion of the money market is considered to be the most liquid in the majority of countries. An institutional framework that was constructed along these lines is demonstrated by the Treaty of Maastricht, for instance. It makes it illegal for European governments to receive overdraft facilities or any other kind of credit facility, whether they come from the future European Central Bank or from central banks that are already operating within the European Union.

In addition, it restricts the European Central Bank and the other central banks of the European Union from making direct purchases of government securities on the primary market. Finally, purchases made on secondary markets are subject to surveillance to prevent anyone from getting over the ban on direct lending to the government (Presbitero, 2012). The Treasury or the Ministry of Finance (MOF) is usually permitted to borrow money on behalf of the government under the legal framework that governs public debt management.

On the other hand, the role of fiscal agent for the government is typically played by the central bank. An organization of this kind is, to a certain degree, a relic of the past, when central banks were initially established as multi-purpose institutions to ensure that their respective governments had sufficient funds at all times. These institutional arrangements make policy coordination easier, but they can occasionally result in a conflict of interest between the tasks of the central bank as a monetary authority and as a fiscal agent.

In the event of a conflict, the central bank is most likely going to prioritize the responsibilities associated with its role as the monetary authority. The arrangements that are suitable for a particular nation may shift over time, particularly regarding the liberalization and reform of the financial sector, as the economy of that nation advances and develops. There is currently a movement toward a "divorce" between monetary policy and debt management, which in some instances involves a reduction in the central bank assumes the role of a fiscal agent while simultaneously expanding the responsibilities of the debt management agency in relation to policy determinations within the framework of government finance. This trend toward a "divorce" between debt management and monetary policy comes as a result of a trend toward a "divorce" between debt management and monetary policy (Schclarek, 2018).

However, to accomplish the overarching goals of economic policy, certain prerequisites must be met before such a "divorce" can take place. These prerequisites include the existence of a stable economic framework, the development of markets, and the adoption of indirect instruments of monetary control. The "split" that has occurred between the management of debt and monetary policy is the setting in which the coordination of monetary and fiscal policy has emerged as such a significant topic in recent times.

The Central Bank and the Ministry of Finance will each be responsible for some

aspects of debt management. The following section will explore recent developments in this area from the perspective of how these responsibilities have been divided up. In addition to being an essential component, the coordination of policy at the operational level is an important monetary and fiscal policy's coordination.

The utilization of direct monetary management merely necessitates the utilization of a broad money program; however, the utilization of indirect instruments necessitates the utilization of a reserve money program. The development of a framework to manage the supply and demand of broad money (i.e., at the level of the banks' balance sheets), also referred to as broad money programming, is required for the implementation of direct, quantitatively-based instruments of monetary control, such as bank-by-bank credit ceilings (Singh, 2018).

This analytical approach gives decision-makers the ability to project the level of monetary aggregates that is compatible with the projection for nominal GDP when there is a stable demand for real money balances. To put it another way, to make it easier to achieve the ultimate policy aim, it is possible to develop intermediate targets for monetary policy. These targets should move about the ultimate policy objective and should be compatible with it.

At the micro level of policy implementation, also known as the day-to-day level, there are several issues that should be given attention. These include the management of the government's cash balances, the level of central bank credit to the government, and the formulation of liquidity forecasts (Alzyadat, 2020). Special arrangements can be negotiated with the government and commercial banks to address the monetary and public debt management issues that arise from the management of cash balances.

While in principle other monetary operations can offset the effect that changes in government deposits with the central bank have on the level of bank reserves, this is not always the case. To address these issues, special arrangements can be negotiated. In this regard, the government can take either of two different approaches, even though it is customary for the government to have the primary account of government receipts and expenditures kept at the central bank.

In the first strategy, the activities of a Treasury Single Account are used to bring together all of the balances held by the government into a single location at the central bank. This is done for reasons related to efficiency, in particular, to make it easier to exercise efficient control over the management of funds and expenditures made by the

government. In the second strategy, the government is given the authority to deposit monies with private financial institutions (Beetsma, 2017).

Countries such as the United Kingdom, the United States of America, Malaysia, Canada, France, and Germany are examples of countries that have developed such a strategy as a means to minimize costs, which has become an important, if not the primary, objective of debt management. In any event, information regarding projections of future cash flows will need to be shared: the central bank will be primarily concerned with the consequences on the liquidity of changes in government cash balances, while the treasury will be responsible for managing cash balances to minimize the cost of debt service.

The projection of the government's cash flow is vital for both the management of the debt and the management of the money supply. When planning the issuance of public debt, it is essential to have a projection of the government's cash flow that is based on the execution and control of the budget as well as the accounting for government operations. This projection must consider debt management.

This is essential in terms of both the timing and the amount, as it allows one to monitor and regulate the expansion of central bank credit while also managing the balances in the treasury account that is held with the central bank. From the point of view of monetary policy, cash flow predictions are extremely important in determining the timing and magnitude of monetary operations (Catenaro, 2017). In some nations, such as Canada's, the nation's central bank and the country's Ministry of Finance make separate projections about the government's net expenditures.

In some nations, such as France and the United Kingdom, the central bank relies on the predictions of government net disbursements from the Treasury. This is also the case in the United States. It is essential to underline that, regardless of the arrangements that are made, estimates of the government's short-term cash flow must be made public. This point cannot be overstated. The primary concern of the central bank concerning the management of liquidity will be the repercussions of changes in the cash balances held by the government; however, it is the responsibility of the Treasury to strategically manage financial reserves to minimize the expenses associated with debt repayment.

The fundamental goal of central banks using the first group is to maintain price stability, hence they are associated with monetary conditions. The second group is fiscal in nature and is used by the Ministry of Finance to boost economic growth as a whole.

In contrast, the goals of fiscal policies typically lean toward high rates of economic growth and employment, even if doing so comes at the cost of increased inflationary pressures. Since monetary and fiscal authorities have such different policy aims, there is a possibility that their activities will cancel one other out (Dixit and Lambertini, 2017).

Tabellini (2019) believes that the implementation of coordinated policy responses to financial crises has the effect of increasing the process of convergence towards the steady state, bringing the economy into closer to the planned target. After doing research into the budgetary repercussions of acts taken by the central bank and the monetary repercussions of actions taken by the government, Dahan (2021) emphasizes the importance of coordinating monetary and fiscal policies.

Coordinated policymaking is especially important in light of the deregulation and other structural changes in the financial sector. The success of such reforms is dependent upon the implementation of a fiscal policy that encourages macroeconomic stability, budgetary discipline, and the elimination of levies that discriminate contrary to financial industry. In order for the successful liberalization of the financial system to occur, it is essential to consider these issues together with enhancements to the legal, fiscal, laws and regulations within the sector (World Bank, 2016). The issue of coordinating monetary and fiscal policies has been the subject of investigation in several studies, each of which makes an explicit reference to the European Monetary Union (EMU). The establishment of the EMU has sparked a discussion on the right relationship that should exist between, on the one hand, centralized monetary policy and, in contrast, the implementation of decentralized financial and structural strategies is being considered.

Catenaro (2017) makes an argument in support of cooperating fiscal policy with the monetary policy position of the Union. Catenaro (2017) thinks that this would be beneficial for the Union. He demonstrates that the structural inefficiencies, inflation, and spending biases may be reduced when the fiscal authorities internalize the major spillover effects that originate from the excessively expansionary fiscal policies that they have implemented. Beetsma and Bovenberg (2017) discuss the topic of whether or not the EMU requires coordination of fiscal policies and, if it does, what form such coordination ought to take if it is to be effective.

They examine the dynamics between a decentralized fiscal policy and a

centralized monetary policy, specifically focusing on scenarios where the fiscal and monetary officials within the Economic and Monetary Union (EMU) lack the ability to fully commit to their respective policy goals. In addition, they look at cases in which there is a disconnect between monetary policy and fiscal policy. They emphasize the need for an authoritative pledge from the government to decrease debt to a sustainable level and keep it there, as well as an explicit inflation objective for the central bank.

This not only demonstrates why the central bank needs an established inflation target, but it also has important implications for monetary policy. Sargent and Wallace (2019) were among the early scholars to draw attention to the potential challenges associated with implementing monetary policy in a context where fiscal policy assumes a dominant role in the coordination game between two policies, namely the monetary and fiscal authorities. When discussing the challenges of monetary policymaking in a context where fiscal policy predominates in the coordination game, Sargent andWallace (2019) were among the first to bring up the issue.

When the central bank operates independently from the fiscal authority, it assumes the responsibility of determining the upper limit of seigniorage revenue that can be generated by setting its policies prior to the implementation of fiscal policies. If the government is subject to a consolidated intertemporal budget constraint, the fiscal authority should be disciplined by the first mover central bank, which should insist that it choose primary surpluses (and debt) that are consistent with the outflow of money from the central bank.

In other words, the monetary authority should issue money in a sequence that is consistent with the order of primary surpluses (and debt) chosen by the fiscal authority. According to Wallace and Sargent's analysis, fiscal factors do not play a significant role in the process of price determination. Central banks that prioritize stability in prices can really attain this objective, irrespective of the measures implemented by the government.

On the other hand, in a system characterized by fiscal dominance, the fiscal authority takes the lead role in determining the course of action for the primary surplus. Any changes that need to be made by the authority in order to steer clear of dangerously high levels of debt must be funded through seigniorage income. In light of the course that has been charted out for the primary surplus, a restrictive monetary policy could end up leading to higher inflation rather than lower inflation.

The outcomes of standard reactions to inflationary shocks resulting from monetary policy are often characterized by unexpected outcomes: higher rates of interest would be caused by today's tightening monetary policy, will result increased in interest payments on the government's debt will result in the need for expansionary monetary policy in the future in order to produce greater seigniorage earnings. Therefore, what is going to take place is that rational actors will predict an increase in the generation of money in the future and bid the price level up now. Uncomfortable monetarist arithmetic like this was developed by Sargent and Wallace.

Aiyagari and Gertler (2014) propose that the implementation of a variety of possibly interconnected policy rules by fiscal and monetary authorities can lead to different equilibrium paths for nominal variables and influence the efficacy of monetary policy in managing inflation. Both researchers found that higher average inflation results from a central bank that is too passive in its monetary policymaking and too dependent on the actions of the fiscal authorities. Both researches showed thatthe degree of dependence shared by monetary policy and fiscal policy may initiate from the underlying institutional structures.

The correlation between central bank independence metrics (Sturn & Haan, 2017) and the level of fiscal dominance may yield valuable insights into inflation outcomes. This phenomenon can be explained by the fact that central banks with a high degree of independence might show a reduced tendency to prioritize the fiscal requirements of the government when formulating their policy decisions. How two policies should be coordinated is an important question that has been the subject of numerous empirical investigations. In the case of the G-7 nations, for instance, there was asymmetrical dependence between fiscal and monetary policy. (Muscatelli et al., 2002).

There is widespread agreement that a wider macroeconomic framework ought to incorporate public debt management considerations. There is already established literature on fiscal policy and monetary policy; however, this literature has been developed in isolation, for example by Chari and Kehoe (2017). The majority of the current body of research on debt management was produced in support of either monetary or fiscal policies. However, the primary purpose of this research is to close a gap in the existing literature and establish public debt management as a distinct policy that is distinct from both fiscal and monetary policies in terms of its goals.

Coordination of policies can prevent one authority from dominating another authority, which could result in an inconsistent policy mix. There is widespread consensus that increased resource flows among nations lead to greater economic efficiency in both wealthy and developing nations. Some studies have argued that external debt and aid from other countries are beneficial for the health of the economy.

On the other hand, other studies have shown that in order for poor countries to fill the gaps that already exist in their economies, they are forced to take on external debt with stringent terms and conditions as well as high-interest rates. Chenery and Strout (2013) noted that before 2013, the majority of nations had accomplished economic transformation without the assistance of any external aid or debt to any external sources.

Cunningham (2014) performed an analysis of the relationship between economic growth and the level of total debt for sixteen economies that were heavily indebted. This analysis was part of a cross-country comparison. According to the findings of the study that there is a negative relationship between total debt and the growth of the economy. This is due to a significant decrease in the productivity of both labor and capital when total debt levels are high.

In addition, Afxentiou (2014) conducted research on twenty other developing countries and came to the same conclusions. According to the data, seven out of twenty countries have slower economic growth because of their high levels of public debt. Henning Bohn has done a significant amount of work and published a significant number of articles regarding monetary policy, fiscal policy, and public debt. Bohn (2015) studied the viability of the United States government's debt policy over the long run and obtained mixed results.

The findings of this empirical investigation indicate that existing models of sustainability are founded (explicitly or implicitly) on transversality conditions, even though such conditions cannot hold in a stochastic setting. The results of Bohn's research motivate and facilitate the development of a fresh test for sustainability that applies to any uncertainty.

The research on how to manage public debt is analyzed by Missale (2011). The author focuses on indexation, maturity, and the structure of debt based on denomination. According to the findings of the study, the ideal method of taxation is connected to a tradeoff involving the reduction of budgetary risk and the decrease of

predicted costs associated with debt payment. It was suggested in this study that economic growth and the accumulation of debt have not a relationship, debt has a positive impact up to a specific point, but after that particular level debt has inverse relationship.

According to this study, long-term nominal debt is a significant barrier against supply shocks, which affect revenues and inflation. This renders the government budget insensitive to supply shocks, which in turn renders the government budget insensitive to the impact of debt on the GDP growth rate. However, in Pakistan's scenario, the building of debt led to low growth, although in other South Asian countries, the buildup of debt did not have a detrimental impact on the growth rate.

Schclarek (2018) evaluated the relationship between gross government debt and per capita GDP growth by using data from 24 industrial countries ranging from 1970 to 2002. The data was collected over the course of the study. As per results of the research conducted, there is not a statistically significant connection between the rise of gross government debt and the development of GDP per capita in industrialized nations.

An analytical study was undertaken to examine the integration of the management of public debt with monetary and fiscal policy, as well as the consequences of the absence of such coordination. It's possible that an inconsistent policy mix could result from having a poor debt manager who isn't working toward a separate policy aim. The repercussions of having a policy mix or having policies that aren't aligned with debt management. The findings of this research indicated that debt management should not be utilized to prop up either monetary or fiscal policies, which highlights the significance of policy coordination in light of these findings.

The management of public debt is viewed as a two-stage game by Di & Di (2014), who conducted research on the interplay between fiscal and monetary policy in this context. The game is played by the government and the central bank. Tabellini (2019) was the one who first introduced this differential game. It is divided into two stages: in the first stage, the rules of the game and the institutional regime are defined. In the second stage, the game is played.

The second stage consists of applying equilibrium solutions and having policymakers minimize their respective loss functions. According to the findings of this research, an institutional environment in which either fiscal leadership or monetary leadership emerges simultaneously is contingent upon the ability of the central bank to

withstand pressure from the government. Adam's (2011) research examines how the level of government debt changes in response to different monetary and fiscal policies.

This analysis demonstrates how the most effective fiscal and monetary policies might be implemented in response to the recent rise in terms of the national debt. An increase in the national debt necessitates a reduction in the typical level of public spending, and fluctuations in the risk posed to the budget give a quantitatively important reason to bring down the level of debt owed by the government over time.

The findings of this study indicate that, over time, the public debt could eventually converge on the value of zero, and that the speed of lowering debt tends to rise if the government does not modify its level of public spending. Presbitero (2012) investigated the connection between the national debt and growth in the economy in LDCs using generalized method of moments (GMM) approaches. This research shows that higher levels of public debt are related and have inverse correlation with lower levels of economic growth and productivity.

Eusepi's (2011) research investigates the effects that the quantity and composition of public debt have on the economies that have put into place the combination of active fiscal policy and passive monetary policy. The findings of this study indicate that greater average and intermediate average maturities of public debt can contribute to macroeconomic instability. In contrast, shorter and longer average maturities of public debt frequently contribute to macroeconomic stability. When there is a constraint on policy design that involves a zero lower bond with a nominal interest rate, a fiscal regime is desirable.

Using the statistical method of Vector Auto Regression VAR, Wibowo (2017) investigated the correlation between debt and growth in eight ASEAN nations. The study examined the connection between total debt and economic development using data collected over a 10-year period, from 2006 to 2015. This study's findings lend credence to the theory of "finance-led growth," which states that the financial sector serves as an intermediary institution between two parties—one of which has surplus capital and the other of which has deficit capital—to ensure the correct distribution of resources among the various economic sectors during the process of economic growth.

Using data ranging from 2000 to 2014, Petrevski et al. (2019) investigate the effects of fiscal and monetary policies and estimate the number of fiscal multipliers for public expenses and revenues. They estimated by making use of a recursive variational

analysis approach. According to the conclusions of this empirical study, the primary concern of the central bank is to ensure that prices remain stable, whereas the primary interest of the fiscal authorities is to ensure that output remains stable.

The level of public debt is explicitly taken into consideration by fiscal authorities in the response function. This is because the quantity of public debt imposes restrictions on the behavior of fiscal policy. The findings also indicate that a policy mix consisting of moderately expansionary monetary policy and restrictive fiscal policy has a direct and beneficial effect on the level of economic activity.

3.3 Monetary Policy and Public Debt Dynamics in Pakistan

Monetary policy is influenced by a variety of different aspects of the government's financial activities, including the management of public debt. Specifically, shifts in the amount of money that the government deposits with the central bank have an immediate impact on the total monetary base in circulation, which the central bank may need to counteract through open market operations.

According to Agha and Khan (2006), inflation is a fiscal phenomenon, and they highlighted the fact that the conduct of monetary policy is significantly influenced by the fiscal policy of the government. Both Arby and Hanif (2010) and Nasir et al. (2010) concluded, based on their research, that the integration between the two policies is minimal and that they have been carried out independently.However, these two studies came to opposite conclusions.

In addition, how the fiscal authority chooses to divide its financing between domestic and foreign borrowing impacts monetary growth and is, as a result, of importance to the monetary authority when it comes to selecting how to conduct its monetary operations. Last but not least, much like with monetary policy, the implementation of public debt policy might be able to contribute to the growth of the domestic financial market. The expansion of the stock of public debt at a moderate rate could be beneficial to the development of the financial market, but an expansion of the debt at an extremely quick rate could impede such development (Chowdhury et al., 2019).

A small nation with optimal mobility of capital and no nontraded goods will discover that fiscal policy is extremely effective in controlling general demand in a system with an exchange rate that is fixed, whereas monetary policy will stay absolutely useless in the system. This is because the exchange rate will remain fixed. This is

because the small nation will not have any nontraded goods. The interest rate and exchange rate remain unaffected by variations in the fiscal stance, as they are always equal to the international rate of interest, fiscal policy is particularly effective in influencing aggregate demand.

This is because the international interest rate will always remain the same (which is fixed by a policy decision). Under these conditions, any crowding out of private sector activities would be resulted by the implementation of an expansionary fiscal policy because there would already be too much of it. In this scenario, there would be no room for debate over the appropriate ratio of monetary to fiscal policy that should be implemented.

Because of these significantly increased levels of output, there will now be a greater need for money. The value of the currency exchange rate will continue to fall until the income conditions have improved to the point where monetary equilibrium can once again be achieved at the current interest rate on the international market as well as the new, higher level of the money supply. However, because it would stifle activity in the private sector, an expansionary fiscal policy would be completely ineffectual in influencing aggregate demand (Hanif et al., 2016).

The goal is to provide investors with more flexibility by increasing the average length of time until domestic debt matures, the government of Pakistan has begun the process of re-issuing Pakistan Investment Bonds (PIBs) with a fixed rate that is 15 years in the future. To attract more investors in securities issued by the government and take advantage of the liquidity provided by Islamic banking systems, the government has started releasing 5-Year Floating Rate Sukuk (Shahid, 2017).

As a direct consequence of this, the proportion of three-month Treasury bills included in the total Treasury bill portfolio dropped to approximately 28 percent at the end of March 2020 from approximately 100 percent by the end of June 2019. (Chowdhury, 2019). All of the new net foreign debt that was accrued during the first nine months of the current fiscal year came from multilateral and bilateral sources.

This was the case on the front of the economy. In light of this, the proportion of the external public debt portfolio1 that is comprised of multilateral and bilateral obligations has gradually increased, in contrast to the previous financial year, the share of debt in portfolio1 sourced from commercial entities, such as foreign commercial banks and Eurobonds, has experienced a relative decline when compared to the same

time during the previous financial year.

This will depend on the fact that a central bank enjoys some form of independence (Khan et al., 2019). The independence of the central bank does not mean ingful independence, which, in any case, probably does not even exist. In this situation, the question that has to be answered is how much authority should be given to the central bank so that it is shielded from the influence of political forces. As soon as the desired level of autonomy for the central bank has been established, it will be essential to decide what the most effective arrangements are for establishing that autonomy, as well as what the most suitable mechanisms are for holding the central bank accountable for the policy actions it takes.

This approach not only acknowledges that the ultimate responsibility lies with the political leadership of the country, but it also acknowledges that the degree and nature of policy independence for the central bank are based on the political structure of the country. This is because the political leadership of the country determines the nature and degree of policy independence for the central bank.

The coordination of operations is of crucial importance for monetary and fiscal policy's daily operations from the micro perspective, while monetary programming frameworks can help minimize discrepancies in the policy mix at the macro level (Shahid et al., 2017). The interactions between monetary policy and fiscal policy, which were mentioned earlier in the paper, are captured by the monetary program, which is a framework for designing a coherent monetary policy intended to achieve certain monetary targets within a specific time horizon.

The goal of the program is to achieve certain monetary targets. Typically, it includes a framework for monthly and quarterly projections of key monetary aggregates, which is also sometimes referred to as a broad money program. Additionally, it typically includes an operational framework for weekly and daily forecasts of the primary items that make up the central bank's balance sheet or reserve money program.

It is anticipated that the wide money program will provide an evaluation of the monetary posture concerning the fiscal accounts and the balance of payments. This evaluation will be based on the monetary targets that have been established by the authorities. To assist in directing day-to-day monetary management, the reserve money program provides the central bank with an operational framework, often known as a

cash flow.

In addition, the Treasury Department and the Central Bank need to have a conversation about whether the errors in the forecast are due to fluctuating demand and supply that will balance out in the long run, or whether they are the result of more basic and long-lasting occurrences that have the potential to cause a shift in the orientation of macroeconomic policies. The creation of such estimates also makes it easier for the government to provide frequent public disclosure of the magnitude of its financial needs and the strategies it intends to implement to fulfill those needs (Chowdhury et al., 2019).

Although distinct macroeconomic policies are developed and put into action through a variety of institutional frameworks, the overarching goal of these policies is typically the same: to improve the material well-being of the nation's population. Achieving a high employment rate while maintaining a low inflation rate is the primary focus of the program. There are mainly two types of policy tools that might be applied to achieve such goals.

Help from other countries can come in the form of external debt, foreign direct investment (FDI), aid, the provision of qualified human resources, and the transfer of technological expertise. The question of whether or not this type of foreign assistance has a positive impact on the welfare of Least Developed Countries (LDCs) or whether or not it has adverse effects on the living standard of the common man in underdeveloped countries is one that is hotly contested. Utilization of public debt in an efficient manner can contribute to increased economic growth as well as the building of the productive capacity of the economy.

Chaudhry et al. (2019)’s study looked at Pakistan's policies on its external debt from the 1990s to the 2000s and observed its effects on the country's expanding economy. They use the OLS technique on secondary data to investigate the impact that Pakistan's external debt and liabilities have had on the country's development over the span of time from 2016-1990 to 2009-2010. Unemployment (UN), Gross Domestic Product (GDP), and Manufacturing Growth Rate are the variables used. (MNFG).

According to the findings of the study, the real expenditures that were spent on debt servicing are the primary cause of the worsening scenario, which is characterized by decreasing production and an increase in unemployment. The ARDL co-integration approach and the ECM speed of adjustment have been used to carry out this analysis, and the results have been captured by employing the ECM. The empirical findings

indicate that the influence of public debt on economic growth is positive but statistically insignificant. This indicates that debt plays no part in the development and growth of economy over the long term.

As a direct consequence of this, the proportion of three-month Treasury bills included in the total Treasury bill portfolio dropped to approximately 28 percent at the end of March 2020 from approximately 100 percent by the end of June 2019 (Chowdhury, 2019). All of the new net foreign debt that was accrued during the first nine months of the current fiscal year came from multilateral and bilateral sources.

This was the case on the front of the economy. In light of this, the proportion of the external public debt portfolio1 that is comprised of multilateral and bilateral obligations has gradually increased, in contrast to the previous financial year, the share of debt in portfolio1 sourced from commercial entities, such as foreign commercial banks and Eurobonds, has experienced a relative decline when compared to the same time during the previous financial year.

There will be several ways in which the activities of the monetary authority affect the administration of public debt. The attitude of monetary policy, the selection and design of central bank instruments, and efforts to foster growth in domestic financial markets are all examples of such approaches. The posture that monetary policy takes has an important part in determining whether or not the federal government can finance its debt at reasonable rates of interest.

3.4 Research Gap

Fiscal and monetary policy coordination is crucial for effective public debt management. However, it is important to note that there appears to be a research gap in Pakistan regarding the effective coordination between monetary and fiscal policies and its impact on public debt management. Previous studies have examined the behavior of fiscal and monetary policies in Pakistan, but there might be limited research specifically addressing their combined effectiveness in managing public debt. Therefore, there is a dire need for further research and empirical analysis in Pakistan to better understand the coordination between these policies and its implications for public debt management. This research gap presents an opportunity to contribute valuable insights to the field of economics and public finance in the context of Pakistan.

3.5 Summary of Literature Review

The review begins with a detailed analysis of Keynesian and Ricardian theories. Keynesian economics, rooted in the works of John Maynard Keynes, emphasizes the role of government intervention in stabilizing economic fluctuations. It advocates for active fiscal policies, especially government spending, to manage aggregate demand. In contrast, Ricardian economics, based on David Ricardo's principles, focuses on comparative advantage in international trade and the long-term implications of government borrowing.

A significant portion of the review is dedicated to exploring fiscal and monetary policies. It examines how these policies influence economic factors like inflation, growth, and employment. Fiscal policy, involving government spending and taxation, is analyzed in the context of its impact on economic activity and public debt. Monetary policy, primarily concerned with controlling the money supply and interest rates, is discussed in relation to its effects on inflation and economic stability.

The literature reviews delve into the intricacies of public debt management, particularly in Pakistan. It discusses the challenges faced by developing countries in managing their debts, including the trade-offs between short-term economic relief and long-term fiscal sustainability. The review also explores strategies for effective debt management, emphasizing the importance of balancing economic growth and fiscal responsibility.

The coordination between fiscal and monetary policies is a central theme of the review. It highlights the importance of harmonizing these policies to achieve economic objectives like stable growth and low inflation. The lack of coordination can lead to policy conflicts, undermining economic stability. The review analyzes various models and empirical studies to underscore the significance of synchronized policy actions.

The document discusses the role of central bank independence in policy formulation and execution. It contrasts this with scenarios of fiscal dominance, where fiscal authorities significantly influence monetary policy decisions. The review evaluates the implications of these dynamics on economic stability and policy effectiveness.

The review includes international perspectives, particularly focusing on the European Monetary Union. It examines how different countries within the union coordinate their fiscal and monetary policies and the challenges they face in policy

synchronization. The document also discusses the broader implications of such coordination for global economic stability.

Throughout the review, various empirical studies and economic models are analyzed to provide evidence-based insights into the effectiveness of fiscal and monetary policies and their coordination. These studies help in understanding the real-world implications of theoretical economic principles.

In conclusion, the review emphasizes the complexity of economic policy-making. It highlights the importance of effective coordination between fiscal and monetary authorities to achieve desired economic outcomes like stability, growth, and sustainable debt management. The document advocates for a balanced approach, combining theoretical insights with empirical evidence, to inform policy decisions.

CHAPTER 4
DATA AND METHODOLOGY

As we embark on the detailed analysis in Chapter 4, our focus shifts to a critical examination of Pakistan's monetary and fiscal policies, pivotal elements in shaping the nation's economic landscape from 1980 to 2020. This chapter aims to dissect the intricate mechanisms of these policies, exploring their impact, effectiveness, and evolution over four decades.

In our exploration, we employ two essential analytical tools that serve as the backbone of our analysis: the Taylor Rule and the concept of fiscal constraints. The Taylor Rule, a principle central to monetary policy analysis, offers a structured approach to understand how central banks should ideally adjust interest rates in response to deviations in inflation and economic output from their target levels. This rule provides formulaic guidance, suggesting policy interest rates adjustments based on the gap between actual and targeted inflation rates and the deviation of actual economic output from its potential. Applying the Taylor Rule to Pakistan’s context, we aim to critically assess how the State Bank of Pakistan's interest rate decisions aligned with the macroeconomic conditions over the years. This analysis will enable us to gauge the responsiveness and appropriateness of monetary policy actions in the backdrop of fluctuating economic indicators.

On the other side, fiscal constraints are crucial in examining the government's budgetary policies. These constraints represent the limitations and guidelines set around government spending and budgeting practices, focusing on maintaining sustainable debt levels and ensuring fiscal responsibility. Analyzing Pakistan’s fiscal policies through the lens of fiscal constraints will allow us to evaluate the sustainability of government spending and borrowing, and how these practices have influenced the overall fiscal health of the nation. This aspect of our analysis seeks to uncover the dynamics between government budgetary practices and broader economic stability, particularly in periods marked by high budget deficits or rising public debt levels.

As we delve into this chapter, our objective is to weave together the narratives of monetary and fiscal policies, using the Taylor Rule and fiscal constraints as guiding frameworks. This approach not only enables a comprehensive understanding of each policy area but also highlights their interplay and collective impact on Pakistan’s economic journey.

This chapter is focused on the model and methods that the study has employed to investigate the relationship between the public debt and the coordination of fiscal and monetary policy. In order to estimate the link, we used Markov switching models as well as the most prevalent auto-regressive (AR) technique. The auto-regressive model makes predictions about future behavior based on the behavior of the system in the past. AR models have a smaller estimation error, which can lead to accurate forecasts on a variety of time series problems. This accuracy can be achieved through the use of AR models.

Markov-switching models, which are a family of statistical models used to analyze time series data, are also known as regime-switching models. These models are characterized by an underlying data-generating process that transitions between distinct states or regimes over the course of the study. These models are very helpful for capturing non-linear and time-varying behavior in economic and financial time series. They may be found in a lot of different places online.

The fundamental concept underlying Markov switching models is that the observed data at each time point is subject to the impact of an unobservable state variable and that an unobservable state variable behaves following a Markov process. Stochastic processes can be of the sort known as Markov processes in which the future state only depends on the current state and does not depend on the order in which the events that led up to it occurred. In most cases, the probabilities of transitioning between the various stages are estimated by using the data that has been collected (Guidolin, 2011).

The models known as Markov switching models were those that may characterize the features of time series in a variety of regimes. we used models of regime change rather than structural break models since structural break models are typically used to simulate the consequences of permanent changes in economic structure. Regime change models, on the other hand, model the effects of temporary shifts in economic structure (Guidolin, 2011).

This section is structured as follows: policy coordination in Pakistan was evaluated by first developing a theoretical framework to explain fiscal and monetary policy coordination, then developing an empirical model to reflect the fiscal and monetary policy regimes, and finally drawing findings. The various forms of data, measurements, and variables were laid down in the conclusion.

4.1 Theoretical framework

The theoretical framework that was utilized in the process of analyzing the effects of coordinated fiscal & monetary policy coordination on functions of both policy's primary goal was to bring unemployment down and keep inflation under control. These were the three things that need to be accomplished. It has been suggested that fiscal policy places a greater emphasis on unemployment than inflation, but monetary policy places a greater emphasis on inflation as compared to unemployment. Taking this into consideration, the utility tasks that fiscal and monetary actors do were as given:

$$F = f(\mu^{\wedge}, \pi, \theta) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$M = f(\pi^{\wedge}, \mu, \theta) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Equations 1 and 2 represent the functions of fiscal and monetary policy agents, respectively. The function for the fiscal agent (U^F) is expressed as $F = f(\mu^{\wedge}\ \pi\ \theta)$, and for the monetary agent (M), it is $M = f(\pi^{\wedge}\ \mu\ \theta)$. Here, μ represents the unemployment rate, π represents price inflation, and θ represents economic growth potential. The functions are designed to reflect the priorities of these agents: the fiscal agent places more emphasis on unemployment ($\mu^{\wedge}$), while the monetary agent gives more priority to inflation ($\pi^{\wedge}$).

Monetary policy reaction function also known as Taylor Rule and Taylor Rule suggests that how central banks should change interest rates to account for inflation and other economic conditions. According to Taylor the Government should adjust the interest rate in response to any deviation of output from equilibrium rate and of inflation from its target.

These functions are crucial for several reasons: monetary policy reaction function manage economic fluctuations and achieve price stability, which means that inflation is low and stable while fiscal reaction function (FRF) determines the way government reacts to increase in debt. These functions help model the behavior of fiscal and monetary agents in a way that aligns with real-world policy priorities. By using these functions, the thesis can analyze how fiscal and monetary policies can be coordinated. Coordination here isn't just about setting reactions but understanding how different policy measures (like interest rates or government spending) impact key economic variables (unemployment, inflation, growth) and how these impacts can be harmonized for overall economic stability and growth. This model is

particularly relevant for developing countries, where government actions significantly influence economic capacity. Understanding the functions of fiscal and monetary policies in these contexts is vital for effective economic management.

Both fiscal and monetary policies have the potential to influence the unemployment rate. Unemployment is included in the fiscal balance (FB) section of the monetary policy instrument section, whereas interest rate (r) is found in the fiscal policy section.

This model is particularly useful for developing countries because, in emerging countries, the actions of the government have a significant influence on the amount of productive capacity that the economy possesses Tarawalie (2013). As we know the phenomenon of unemployment is influenced by two key factors, interest rate and the fiscal balance., $\mu = f(r, fb)$. So, the equation (1) and (2) can be rewritten as;

$U^F = f(r, fb, \pi, \theta\hat{})$ .....(3)

$U^M = f(r, fb, \pi\hat{}, \theta)$ .....(4)

Equation 3 demonstrates that when policy instruments were added to the model, the focus moves to potential output growth, which carries a bigger amount of weight. This occurs in the function of the fiscal agent. To facilitate interaction and coordination between the two agents, the fiscal balance and interest rate of both instruments were incorporated into the functions of both agents. It has been determined that the limitation on the fiscal side is indicated as:

$fb = f(r, \theta, Ge, d)$ .....(5)

In the above equation r represent interest rate, Ge means government expenditure and d represents debt. So, the interest rate was;

$r = f(\theta, \pi, fb, Exc)$..... (6)

The acronym Exc stands for the exchange rate. The primary reason for fluctuations in exchange rates is the actions of monetary authorities, particularly in a small open economy. The involvement of monetary base in the fiscal policy reaction function and the involvement of fiscal balance in the monetary policy reaction function demonstrates the interactive influence that seigniorage has on the fiscal and monetary policy functions.

Both the interest rate r and the fiscal balance fb were used to count the policy feedback rule existing between fiscal and monetary players. This means that improving the restricted functions associated with policy rules hasthe following effects: The reaction function of fiscal policy is as follows:

$fb = f(r, \theta, Ge, d)$ .....(7)

Interest rate, potential GDP growth, government spending, and public debt all influence the fiscal policy response. Monetary policy reaction function:

$r = f(\pi, fb, \theta, Exc)$..... (8)

The response of monetary policy is determined by various factors, including inflation, fiscal balance, output growth, and exchange rate.

4.2 Empirical Model

In this part, the Markov switching model is presented as a means of representing the regimes that policy agents choose to implement. According to Hamilton (2011), the Markov switching approach offers the idea that the transition between regimes is caused endogenously. This suggests that other policy regimes can be chosen within the framework of the model itself. There is an infinite numberof regimes that can be classified as either sustainable or not sustainable. Bohn's intertemporal government budget restriction is the foundation upon which the reaction function of fiscal authority, as stated by Bohn (2015), is constructed. If the current value of the primary balance is equal to the entire amount of public debt, this indicates that the government's fiscal policy is sustainable. This strategy takes into account how the primary balance reacted to the prior amount of debt.

The work of Bohn (1995). Bohn's study examines the relationship between fiscal policy and the level of previous debt. In the context of the thesis, fiscal sustainability is understood as the capability of a government to maintain stable fiscal policies over time without leading to unsustainable debt levels. This concept is explored through a regime-switching model that identifies shifts between periods of fiscal sustainability and unsustainability. The study highlights the prevalence of unsustainable fiscal regimes in Pakistan and suggests that these periods were more dominant compared to sustainable ones. This implies that instances of fiscally unsustainable policies, which could potentially lead to macroeconomic instability, were more common in the data analyzed.

Let, S represents the number of regimes so that:

$$\mathbf{S_t} = \begin{cases} 1, Sustainable\ regime\ is\ observed\ at\ period\ t \\ 0, unsustainable\ regime\ is\ observed\ at\ period\ t \end{cases}$$

The Markov switching model is capable of estimating both the transition probabilities and the time-varying transition probabilities. The transition probability measures the likelihood of policy regime changes from state i to j ∀), 2 = 0,1, where i and j are integers ranging from 0 to 1. It is assumed that this probability remains constant. The concept of transition probability can be formally described using a matrix, where the time-varying probabilities indicate the occurrence of state i at period

t. Both equations 7 and 8 provide the basis for estimates of fiscal and monetary reaction functions. So, the Markov switching model for fiscal policy reaction function is represented as:

$$Fb_t = \alpha_o (S_t) + \alpha_1 (S_t)\, Debt_{t-1} + \alpha_2 (S_t)\theta_t^* + \alpha_3 (S_t) RINT_t + (S_t)\, \mu_t \quad (9)$$

Where;

Fb_t = fiscal balance as a ratio of GDP
RINT = real interest rate

Debt = total debt as a ratio of GDP

θ^* = control variables

μ_t = error term for the fiscal policy reaction function where $\mu_t \sim I.I.D\ (0, \sigma_{fd}^2)$

θ^* states to control variables that include factors such as the production gap and government spending.

It takes the traditional indicators of GDP and government spending and measures them against the long-run trend. The response of fiscal and monetary policy, which in turn causes cyclical shifts in the economy, is determined by the output gap.

According to equation 9, the fiscal balance of the present period (Fbt) is reliant on the level of debt from the period before this one (Debt -1), and the fiscal policy regime is considered "passive" when the coefficient of debt is both negative and of a small magnitude. This indicates that an increase in the prior debt level causes a decrease in the level of fiscal balance and ultimately leads to an increase in the level of fiscal deficit. It suggests that there were no limits placed on the national debt, which means that this posture cannot be maintained for long.

When the coefficient of debt is found to be positive and significant, fiscal policy is said to be "active," as this indicates that the policy is having an effect. If the current debt level increases, it indicates that the government was responding responsibly by cutting back on the amount of money it spends.

In order to attain the best monetary response, it is imperative that the real interest rate determines a positive reaction in response to an increase in inflation. The Taylor rule is a fundamental framework for determining the monetary policy response function. In addition, the monetary reaction function based on the Markov switching model can be expressed in the following manner.

$$\gamma_t = \beta_o (S_t) + \beta_1 (S_t)\, \pi_t + \beta_2 (S_t)\theta_t^{*} + \beta_3 (S_t)\, fb_t + \beta_4 (S_t)\, Exc_t + (S_t)\, \varepsilon_t \quad \text{.....(10)}$$

where;

Exc = exchange rate

Π = inflation rate

ε_t = error term for the monetary reaction function which is expected to be $\varepsilon_t \sim$ I.I.D $(0, \sigma_{r})$

Inflation rate regimes were classified as "active" if their coefficient was larger than zero, and if the coefficient falls below zero, the regime is classified as "passive." David (2018) Doi et al., (2011) Khalid & Marwan (2012).

4.3 Estimation Procedure

Augmented Dickey-Fuller (ADF) and the KPSS test applied to determine the order of integration and to check stationarity. Estimates of the Markov-switching model was derived for each of the policy reaction functions by using equations (9) and (10). We analyzed each model's transition probability as well as the predicted duration of each regime, and we were using this information to find out how well both financial and monetary policies interact with one another.

4.4 Data Description

In order to analyze the relationship between public debt, fiscal and monetary policy, we select the South Asian country Pakistan, annual time series data from 1980 to 2020 are included in this research. The variables and their descriptions and measurements utilized in the study are summarized in the table below.

Table 4.0: Description of Variables

Variable	Description	Unit	Source
GDP growth	GDP growth rate changes year over year and measures how fast an economy is growing.	Ratio	Economic Survey of Pakistan
Fiscal balance	Fiscal balance, in this context, refers to the equilibrium state of a government's fiscal policy, characterized by the relationship between government revenues and expenditures. It's a measure of the government's budgetary position in a given period, indicating whether the government is spending more than it earns (deficit) or earning more than it spends (surplus).	Ratio	Author Calculation
Inflation	It is the general increase in the prices of goods and services in an economy. Using data on the rate of inflation in consumer prices.	Ratio	Economic Survey of Pakistan
Total Debt/GDP	Both internal and external debt factored into the overall debt-to-GDP ratio.	Ratio	Economic Survey of Pakistan

Exchange Rate	The exchange rate states to the valuation of a country's currency relative to the currency of another country or economic region.	Ratio	Economic Survey of Pakistan
Real Interest Rate	Calculated as the nominal debt rate adjusted for inflation.	Ratio	Author Calculation
Government expenditure gap / GDP gap	The estimation is based on the discrepancy between the actual gross domestic product (GDP) and the actual government spending in the long-term.	Ratio	Author Calculation

Government expenditure refers to the amount of money that the government spends on various programs, services, infrastructure, and other expenses. It includes spending on areas such as healthcare, education, defense, social welfare, transportation, and public infrastructure. Government expenditure plays a crucial role in shaping the economy and society by providing essential services and stimulating economic growth. It is an important aspect of fiscal policy and is typically funded through government revenue sources such as taxes, borrowing, or other sources of income. The allocation and management of government expenditure are key considerations in ensuring effective governance and meeting the needs of the population while the fiscal balance refers to the state of a government's finances, specifically the relationship between its revenue and expenditure. When a government's revenue exceeds its expenditure, it results in a fiscal surplus, which is a positive balance. This surplus can be used to pay off debt or invest in various programs. On the other hand, when a government's expenditure exceeds its revenue, it leads to a fiscal deficit, which is a negative balance. This deficit often requires borrowing or

other measures to cover the shortfall. Maintaining a sustainable fiscal balance is important for the long-term financial health of a government**.**

CHAPTER 5

RESULTS AND DISCUSSION

The findings that were produced from the data analysis and the empirical investigation are provided and analyzed in greater depth within the chapter of a research study titled "Results and Discussion." The purpose of this chapter is to offer an interpretation that is both clear and all-encompassing of the findings that were acquired using the research technique described in prior chapters. In most cases, this will require the utilization of tables, charts, graphs, and descriptive statistics to illustrate the most important scientific results.

Figure 5.1 provides an overview of the trends in two key economic indicators, fiscal balance and real interest rates, spanning the years from 1980 to 2020. These indicators shed light on the financial and economic dynamics during this time period.

The graph in Figure 5.1 reveals significant upward shifts in interest rates during specific intervals: 1980 to 1988, 1998 to 2004, and 2015 to 2020. These periods coincide with notable rises in interest rates. These fluctuations can be attributed to various economic factors, including the enduring impact of the global crises of 1971. These crises created macroeconomic uncertainty that persisted over time, prompting policymakers to react by adjusting interest rates. Such adjustments are often made to manage inflation, stabilize financial markets, or control economic growth. The highlighted years correspond to instances when the legacy of the 1971 global crises continued to influence interest rate decisions, reflecting ongoing efforts to navigate economic challenges.

Notably, the era between 1980 and 1990 stands out due to significant growth in export profits within the country. This export-led growth is connected to a substantial increase in the fiscal surplus relative to GDP. The fiscal surplus, which represents the excess of government revenue over expenditures, expressed as a percentage of the Gross Domestic Product, experienced notable expansion during this period. The robust performance of the export sector likely contributed to increased government revenues. This growth could be attributed to higher export profits and enhanced trade activity, which in turn positively affected the fiscal balance.

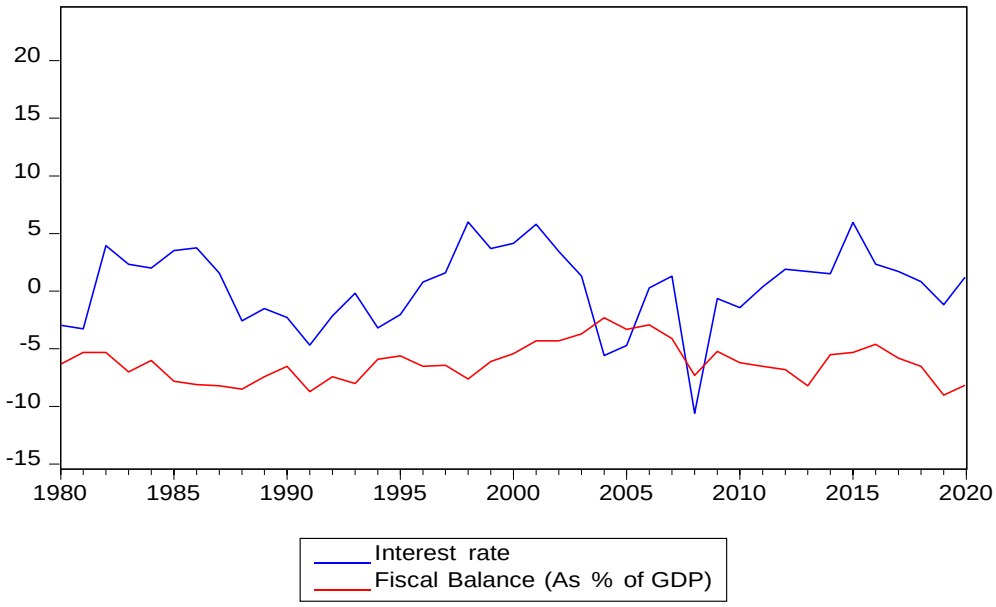


Figure 5.1: Changes in the Interest Rate and Fiscal Balance as a Percent of GDP from 1980-2020

Figure 5.2 displays the trends in total debt as a percentage of Gross Domestic Product (GDP) across the years 1980 through 2020. This graph provides insights into the changes in the ratio of total debt to the overall economic output of a country over the specified period. The graph shows that the total debt-to-GDP ratio remained below 40 percent for the entire duration covered in Figure 5.2, which spans from 1980 to 2020. The level of a country's debt can be described by this ratio relative to the size of its economy. A ratio below 40 percent suggests that the country's debt level, in terms of its economic output, has generally been manageable during this period.

Notably, there is a visible increase in the total debt-to-GDP ratio from 1995 to 2002. The peak of this increase occurred around 2000 when the ratio reached somewhere between 50 and 60 percent of GDP. According to Maana et al. (2008), this rapid rise in overall debt during this period was attributed to the country making net repayments over the specified time frame. As a result of these net repayments, to cover its financial obligations, the country had to turn to borrowing from inside related to foreign debt.

The implementation of structural reforms in 1990 played a pivotal role in enhancing debt management practices. These reforms contributed to a gradual reduction in total debt. Consequently, it seems that the implementation of these

reforms had a positive impact on debt management, leading to a decrease in the total debt-to-GDP ratio.

The trends observed in the graph suggest that there might not be a straightforward link between the variables of interest rates, budget deficits, and total debt. Despite the complexities, the patterns indicate an improvement in Pakistan's macroeconomic policy environment, particularly towards the latter part of the examined decade. Economic reforms, encompassing measures to control government spending, borrowing, and interest rates, seem to have positively influenced the country's overall macroeconomic landscape.

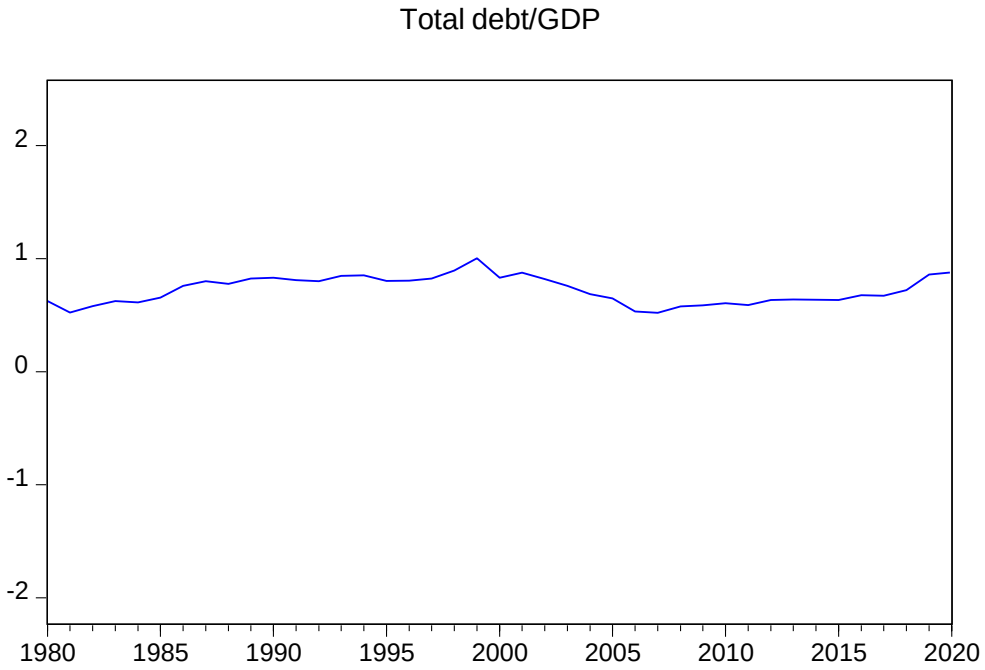


Figure 5.2: Total Debt as a Percent of GDP from 1980-2020

Table 5.1 displays descriptive statistics for several variables. These statistics include mean, median, minimum, maximum, standard deviation, skewness, kurtosis, Jarque-Bera test statistic with associated probability, sum, sum of squared deviations, and count of observations for each variable. Using these statistics, one may efficiently summarize and comprehend the characteristics and distribution of data for each variable.

The mean value in Table 5.1 represents the arithmetic average of all variables in the dataset. Using the average statistics of numerous economic indicators provides insight into the region's usual economic performance. For example, the average GDP is around 4.70, indicating the average economic output. An average score of

-6.19 in the case of fiscal balance indicates a usual decrease in fiscal balance. The average inflation rate is 8.16 percent, which is the average price increase. The average total debt as a percentage of GDP is 0.72, showing a relatively low deficit. The average exchange rate is 48.38, which reflects the standard value of the native currency in comparison to international currencies. The average real interest rate is 0.35 percent, which is the typical return on investment after adjusting for inflation. The average value of government expenditure on goods and services is -354.48, showing significant negative average expenditures.

For most variables, median values approximately approach means, suggesting reasonably balanced distributions for these indicators. Exchange rates (152.10) and government expenditure (-224.33) have particularly high maximum values. Foreign investment, exchange rate, real interest rate, and government expenditure with negative minimum values indicate a spectrum that includes losses or declines.

GDP, fiscal balance, inflation, and real interest rates all have moderate standard deviations, indicating moderate variability. The standard deviations for the exchange rate and government expenditure are bigger, indicating that these indicators are more volatile. The total debt as a percentage of GDP has a low standard deviation, indicating that this statistic is less volatile. Positive skewness is visible in most variables, with the exception of the exchange rate and government expenditure, indicating probable positive outliers. Kurtosis values around 3 indicate distributions with heavier tails than a normal distribution. Low Jarque-Bera probability, on the other hand, suggest a departure from normality in the data for the exchange rate, real interest rate, and government expenditure.

Table 5.1

Descriptive Statistics of Data

	GDP	FB	IN	TD/GDP	ER	RIR	GEG
Mean	4.70325	-6.1927	8.16316	0.72183	48.3803	0.34928	-354.48
Median	4.83282	-6.3	7.84427	0.72085	49.2815	1.30132	314.286
Maximum	10.2157	-2.3	20.2861	1.00259	152.099	6.002	-224.33
Minimum	-1.2741	-9	2.52933	0.51971	-2.0382	-10.586	-871.3
Std. Dev.	2.22839	1.64338	3.76308	0.12082	39.8816	3.41917	132.349
Skewness	0.14459	0.37961	0.67549	0.10072	0.77828	0.75434	2.05297
Kurtosis	3.31484	2.55502	3.77003	2.02118	2.82247	3.99504	7.69283
Jarque- Bera	0.31219	1.32298	4.13095	1.70605	4.19291	5.57973	66.4223
Probability	0.85548	0.51608	0.12676	0.42612	0.12289	0.06143	0.0000
Sum	192.833	-253.9	334.69	29.5949	1983.59	14.3205	-14534
Sum Sq. Dev.	198.629	108.028	566.43	0.5839	63621.5	467.63	700647

Note: GDP= Gross domestic product; FB= Fiscal balance; IN= Inflation; TD/GDP= Total debt/GDP; ER= Exchange rate; RIR= Real interest rate; GEG= Government expenditure gap"

Source: Author calculations

Table 5.2, the Correlation Matrix, provides invaluable insights into the relationships between pairs of variables, detailing the strength and direction of their linear associations. This matrix serves as a vital analytical tool to unravel the intricate connections within the dataset. Every correlation value quantifies the extent to which changes in one variable correspond with changes in another variable. Beginning with the self-correlation of GDP, which naturally stands at 1, we establish a pivotal reference point. This value essentially measures the degree to which a variable is linearly linked to itself. Transitioning to the correlation coefficient between GDP and FB, approximately 0.69 emerges, indicating a moderately positive relationship. This suggests that as GDP grows, there's a tendency for the fiscal balance (FB) to improve. This could be seen as a favorable development, where economic expansion coincides with enhanced fiscal stability.

Nevertheless, it's crucial to emphasize that correlation does not imply causation. Although a positive correlation between GDP and FB is evident, it's imperative to consider the presence of other influential factors that could underlie this relationship. In contrast, the intriguing correlation coefficient of around -0.90 between GDP and IN introduces a counterintuitive dynamic. As GDP rises, inflation (IN) tends to decrease. This phenomenon, though contrary to expectations, is a prime example of the intricate nuances inherent in economic interactions. Further research is imperative to untangle the complexities of this association and understand the underlying mechanisms.

Advancing through the matrix, the weak negative correlation of about -0.08 between GDP and TD/GDP suggests a subtle inclination: with increasing GDP, there's a minor tendency for total debt to decrease. This insight bears implications for gauging economic stability and managing debt ratios.

Notably, the robust negative correlation coefficient of approximately -0.8 between GDP and ER unveils a significant inverse linear connection. This indicates that as GDP rises, there's a propensity for the exchange rate (ER) to decrease. This intricate relationship could be influenced by a multitude of economic factors and policies that impact both GDP growth and currency valuation. The correlation coefficient of roughly -0.99 between GDP and RIR underscores apronounced linkage: heightened GDP correlates with lower real interest rates (RIR). This signifies a distinct interplay between economic expansion and borrowing costs.

The substantial negative correlation of around -0.9 between GDP and GEG accentuates a substantial linear relationship. In essence, as GDP increases, government expenditure (GEG) experiences a notable reduction. This has implications for fiscal policy and governance.

Crucially, it's paramount to recognize that while correlation provides insights into statistical relationships, it does not establish causation. The correlation coefficients quantify the degree and direction of associations between variables, which can be influenced by a multitude of factors. Therefore, a comprehensive understanding of the underlying mechanisms is imperative.

As described by Doi et al. (2011), the correlation coefficients for various pairs of variables are meticulously detailed in Table 5.2. Each of these coefficients serves as a statistical measure, shedding light on the strength and nature of the linear

relationship between two variables. For instance, the correlation coefficient between GDP and FB is 0.690229, and its positive value indicates a positive link between the two variables. This implies that as GDP grows, there's a propensity for FB to grow as well a positive economic trend.

Conversely, the correlation coefficient between GDP and IN is -0.9048, aligning with the findings of Doi et al. (2011). This coefficient signifies amoderately negative relationship between the variables. Essentially, as GDPincreases, there's a tendency for inflation (IN) to decrease and vice versa. Nevertheless, it's crucial to recognize the influence of other factors that might impact this connection.

The correlation coefficients for other pairs of variables are also outlined in the table. For instance, the coefficient between TD/GDP and ER is 0.014241, indicating a very weak positive relationship. This suggests that the variables are positively correlated, implying that as one increases, the other tends to increase as well – although the association is minor. Similarly, the correlation coefficient of 0.93111 between ER and RIR points to a moderate positive correlation between these variables. Moreover, a moderate positive correlation is observed between GEG and TD/GDP, with a coefficient of 0.53910.

Table 5.2 Correlation Analysis

	GDP	FB	IN	TD/GDP	ER	RIR	GEG
GDP	1						
FB	0.69023	1					
IN	-0.9048	-0.4166	1				
TD/GDP	-0.0854	-0.0664	-0.0921	1			
ER	-0.8342	0.1710	-0.5405	-0.096	1		
RIR	-0.9916	0.13788	-0.7062	0.07624	0.9311	1	
GEG	-0.9453	-0.1756	0.7492	0.5391	-0.4564	0.6356	1

"**Note**: GDP= Gross domestic product; FB= Fiscal balance; IN= Inflation; TD/GDP= Total debt/GDP; ER= Exchange rate; RIR= Real interest rate; GEG= Government expenditure gap"
Source: Author's calculation

The investigation's focus was on assessing stationarity conditions for various variables using the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test. The outcomes of the Unit Root Test are presented in Table 5.3. These tests were conducted on several variables, including GDP, FB, IN, TD / GDP, ER,

RIR, and GEG. The purpose of these tests is to determine the integration order of a time series variable, which indicates whether the variable is stationary or exhibits a trend or non-stationarity.

Each variable underwent the ADF and PP tests, yielding a t-statistic and a corresponding probability (p-value). The t-statistic measures the deviation of the estimated coefficient from the expected value under the assumption of no unit root (non-stationarity). The significance of the test is evaluated through the associated p-value, denoted as "Prob.*." The "Order of Integration" column in the table classifies each variable based on the test results, indicating whether it has an integration order of 0 (stationary) or 1 (first-order non-stationary).

The ADF test outcomes revealed that GDP's test statistic is -3.36828 with a p-value of 0.0182. The null hypothesis was rejected because the p-value was less than the typical significance level of 0.05. As a result, the GDP time series is identified as stationary (I (0)), suggesting no need for differencing. Similarly, the Exchange Rate series is likely already stationary (I (0)), indicated by an ADF test statistic of -4.17249 and a p-value of 0.0022.

Conversely, Fiscal Balance displays clear evidence of non-stationarity. Its ADF test statistic is -8.09004, accompanied by an almost negligible p-value, mandating differencing (I (1)) for achieving stationarity. The Total Debt to GDP Ratio also demands differencing (I (1)), given its ADF test statistic of -6.21789 and remarkably low p-value.

In the cases of Inflation, Real Interest Rate, and Government Expenditure Gap, the results are mixed. While Inflation's ADF test statistic is -3.02548 and its p-value is 0.0410 (slightly above 0.05), implying potential stationarity, further investigation is advisable. Real Interest Rate (ADF statistic: -3.93195, p-value: 0.0042) and Government Expenditure Gap (ADF statistic: -2.43664, p-value: 0.0385) might also be considered stationary (I (0)) based on their p-values and test statistics.

The Phillips-Perron test provides consistent conclusions. GDP's p-value of 0.0226 supports its likely stationarity (I (0)), while Fiscal Balance's very low p-value substantiates the need for differencing (I (1)). Inflation's p-value of 0.0300 reinforces its probable stationarity (I (0)), and ER's p-value of 0.0023 aligns with its likely stationarity (I (0)). Real Interest Rate (p-value: 0.0038) and Government

Expenditure Gap (p-value: 0.0101) also seem to be stationary as they are (I (0)). To sum up, the combined outcomes of the ADF and PP tests offer valuable insights into each variable's stationarity and integration order. These results guide the decision to apply differencing for achieving stationary time series data.

Table 5.3: Unit Root Test

	ADF		**PP**		**Order of Integration**
	t-Stat	Prob.*	t-Stat	Prob.*	
GDP	-3.3683	0.0182	-3.2789	0.0226	I (0)
FB	-8.09	0	-8.0347	0	I (1)
IN	-3.0255	0.041	-3.1611	0.03	I (0)
TD/GDP	-6.2179	0	-6.2228	0	I (1)
ER	-4.1725	0.0022	-4.1547	0.0023	I (0)
RIR	-3.932	0.0042	-3.9719	0.0038	I (0)
GEG	-2.4366	0.0385	-2.5577	0.0101	I (0)

"**Note**: GDP= Gross domestic product; FB= Fiscal balance; IN= Inflation; TD/GDP= Total debt/GDP; ER= Exchange rate; RIR= Real interest rate; GEG= Government expenditure gap"

Source: Author calculation.

The outcomes presented in Table 5.4 provide insights from a detailed threshold regression analysis, aiming to understand the complex interactions among various economic variables. This methodological approach is valuable for deciphering the relationships between dependent and independent variables across different threshold levels of a crucial control variable.

The investigation primarily focuses on examining the connection between the dependent variable, referred to as "FB," and the threshold variable denoted as "TD / GDP." The table is divided into two distinct sections. When "TD / GDP" is less than 0.8518228, an increase in "TD / GDP" leads to a decrease in Fiscal Balance ("FB"). This is supported by the negative coefficient of -21.21348, which has a highly significant t-statistic of -5.917358 ($p < 0.001$), indicating that this relationship is not likely due to chance. Similarly, when "TD / GDP" is equal to or greater than 0.8518228, the relationship remains significant, with a coefficientof -18.88585 and a t-statistic of -5.824721 ($p < 0.001$). These findings align with the proposition by David (2004), reaffirming the significance of the established relationship.

Consistent with David's (2004) proposition, the coefficient for "TD / GDP"

remains statistically significant at -18.88585 for observations where "TD / GDP" equals or exceeds 0.8518228. This indicates a robust influence of "TD / GDP" on the variable of interest. The statistical significance of this relationship is further emphasized by the t-statistic of -5.824721 ($p < 0.001$). The threshold regression analysis in Table 4.4 sheds light on the complex interactions between economic variables and their impact on Fiscal Balance. The findings underscore the importance of threshold-driven relationships, particularly concerning the Total Debt to GDP Ratio and its effect on Fiscal Balance.

The coefficient represents the estimated effect of the "OG" (output gap) variable on the dependent variable "FB" (fiscal balance). In this case, a one-unit increase in the Output Gap (OG) is associated with a decrease of approximately -0.00176 units in the Fiscal balance (FB), assuming all other variables are held constant. The t-statistic measures how many standard errors the coefficient is away from zero. A t-statistic of -3.68793 suggests that the coefficient is significantly different from zero, indicating that the Output Gap (OG) is statistically significant in explaining the variation in the Fiscal balance (FB). The p-value (0.0008) is below the conventional significance level of 0.05, indicating that the relationship between the Output Gap (OG) and Fiscal balance (FB) is statistically significant.

Additionally, the threshold variables table encompasses both threshold-related factors and non-threshold variables such as "OG," "GEG," "IN," "TD / GDP1," and "C." Notably, the coefficient for "IN" is -0.144829, with a t-statistic of -3.056155 and a probability of 0.0044. This indicates a statistically significant inverse relationship between "IN" and "FB," suggesting that higher "IN" is associated with lower "FB." These numerical representations reveal the nature of the links between each non-threshold variable and the dependent variable "FB," providing insight into the direction of these relationships. Moreover, several non-threshold variables, including Government Expenditure Gap, Interest Rate, and Total Debt to GDP Ratio, exert influence over Fiscal Balance. The comprehensive representation of the model highlights the variability in Fiscal Balance, reinforcing its relevance in deciphering economic complexities, consistent with insights from the cited authors.

The R-squared value of 0.640142 means that around 64.01% of the changes in "Fiscal Balance" ("FB") can be attributed to the independent variables like "Total Debt to GDP Ratio," "Government Expenditure Gap," and "Interest Rate." These

factors collectively influence a significant portion of the observed variations in "Fiscal Balance." The adjusted R-squared value of 0.574714 considers both the explanatory strength of the chosen independent variables and the model's complexity due to predictors. Roughly 57.47% of the "Fiscal Balance" variability is accounted for by these meaningful independent variables after considering the model's intricacies.

The F-statistic (9.783817) and its exceptionally low probability (0.000003) confirm that the connections between specific independent variables, like "Total Debt to GDP Ratio," "Government Expenditure Gap," "Interest Rate," and "Fiscal Balance" ("FB"), are highly significant. These relationships are unlikely to be mere chance occurrences, supporting the economic interpretation that these independent variables significantly impact "Fiscal Balance." In essence, this analysis suggests that the chosen independent variables collectively wield substantial influence over the fluctuations in "Fiscal Balance." The low probability associated with the F-statistic reinforces the notion that these relationships are statistically meaningful and not random. The R-squared and adjusted R-squared values underscore the significance of these independent variables in explaining changes in "Fiscal Balance," while accounting for model complexity.

Table 5.4: Threshold Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob
TD / GDP < 0.8518228				.
TD / GDP	-21.2135	3.584958	-5.91736	0.0000
0.8518228 <= TD / GDP				
TD / GDP	-18.8859	3.242361	-5.82472	0.0000
Non-Threshold Variables				
OG	-0.00176	0.000478	-3.68793	0.0008
GEG	-6.79E-06	7.49E-05	-0.09062	0.9283
IN	-0.14483	0.047389	-3.05616	0.0044
TD / GDP	16.7874	3.258165	5.15241	0.0000
C	-2.00993	1.603154	-1.25373	0.2187
R-squared	0.640142	Mean dependent var		-6.19
Adjusted R-squared	0.574714	S.D. dependent var		1.66422
S.E. of regression	1.085307	Akaike info criterion		3.15923
Sum squared resid	38.8704	Schwarz criterion		3.45478
Log-likelihood	-56.1846	Hannan-Quinn criteria.		3.26609
F-statistic	9.783817	Durbin-Watson stat		1.93625
Prob(F-statistic)	0.000003			
Dependent Variable: FB				
Threshold variable: TD / GDP				

"**Note**: OG= Output Gap; GDP= Gross domestic product; FB= Fiscal balance; IN= Inflation; TD/GDP= Total debt/GDP; GEG= Government expenditure gap"

Source: Author's calculation.

Table 5.5 presents findings derived from a multiple threshold test; a statistical technique aimed at evaluating the significance of threshold effects within a model. Threshold effects, which indicate points where variables exhibit distinct behaviors due to changes in underlying conditions, hold economic importance.

When comparing the first and second thresholds, the calculated F-statistic registers at 9.641777. This value assesses the significance of differences between these thresholds. The normalized F-statistic mirrors this outcome, providing a standardized reference. The critical value of 8.58 serves as a threshold itself; exceeding it signifies rejecting the null hypothesis and indicating a presence of a threshold effect. In this instance, the F-statistic surpasses the critical value, pointing to a substantial disparity between the thresholds. From an economic

standpoint, the multiple threshold test in Table 5.5 aims to pinpoint pivotal junctures where relationships among variables undergo significant shifts. The first comparison (0 vs. 1) suggests a noteworthy distinction between the initial thresholds, implying discernible alterations in behavior or effects. This divergence might correspond to shifts in economic conditions or dynamic forces driving changes in variables.

Regarding the comparison between the second and third thresholds, the computed F-statistic stands at 2.944089. This measure is also scaled for normalization. However, the F-statistic falls below the critical value of 10.13, suggesting a potential lack of statistical significance between the second and third thresholds. Despite not meeting the critical value, the second comparison (1 vs. 2) still implies potential threshold effects, albeit with lower statistical confidence.

In essence, this statistical technique aids in identifying crucial turning points within an economic context, denoting alterations in variable interactions. These turning points could signify shifts in economic trends, implications of policies, or transformations within markets.

Table 5.5: Multiple Threshold Test

Threshold Test	F-statistic	Scaled F-statistic	Critical Value**
0 vs. 1 *	9.641777	9.641777	8.58
1 vs. 2	2.944089	2.944089	10.13

Source: Author's calculation.

Table 5.6 presents the outcomes of the Breusch-Godfrey Serial Correlation LM Test, a statistical technique employed to detect serial correlation, also termed autocorrelation, within a given model. Serial correlation pertains to patternsamong successive observations in time series data and holds notable implications for economic analysis.

The computed F-statistic registers at 0.575, offering an assessment of the significance of serial correlation within the model. Accompanying this, the associated probability (Prob. F) stands at 0.569, indicating the likelihood of encountering this specific F-statistic assuming the absence of serial correlation. A relatively elevated probability indicates limited support against the null hypothesis of no serial correlation. The corresponding value, 1.431, gauges the goodness of fit of the regression model to the data. The linked probability (Prob. Chi-Square) of 0.489 quantifies the chance of observing this value while assuming no autocorrelation. Similar to the F-statistic's case, the probability here provides modest backing against the absence of autocorrelation in the null hypothesis.

The Breusch-Godfrey Serial Correlation LM Test evaluates potential serial correlation within the residuals of a model, carrying potential economic implications. Its presence suggests that the current economic variable's behavior is influenced not solely by its historical values, but also by unaccounted factors or dynamic processes. This can potentially undermine the precision of the model.

In this instance, the relatively high probabilities associated with both the F-statistic and Prob. Chi-Square point to limited evidence for serial correlation. This implies that the model's residuals probably lack notable autocorrelation patterns. Hence, the economic interpretation is that the existing model specification effectively captures temporal dynamics, thereby minimizing the impact of omitted factors or dynamics. These findings are in line with Vieira's work in 2016, which suggests

that the current form of the model effectively addresses concerns linked to serial correlation.

Table 5.6: Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.57495	Prob. F (2,31)	0.5686
Obs*R-squared	1.430673	Prob. Chi-Square (2)	0.489

Source: Author's calculation.

In the context of Table 5.7, a comprehensive analysis of outcomes derived from a least square's regression model provides valuable insights into the intricate economic relationships among various variables and their impact on the dependent variable. The interpretations can be elucidated as follows: Each coefficient associated with a variable indicates the change in the dependent variable resulting from a change of one unit in the independent variable, with all other factors held constant.

For example, the variable associated with the expression (TD / GDP < 0.8518228) * TD / GDP carries a coefficient of 1.537711. However, the relatively high p-value (0.7069) indicates that this particular relationship lacks statistical significance, adhering to common thresholds like 0.05. From an economic perspective, this suggests that the identified variable may not exert a substantial impact on the dependent variable.

A similar pattern emerges with a different TD/GDP threshold. A coefficient of 1.200866 suggests that when TD/GDP >= 0.8518228, an increase in the ratio contributes to a roughly 1.20 unit rise in the dependent variable. Nonetheless, the p-value (0.7425) indicates insignificance.

The coefficient for "OG" is 0.000159, which is a very small positive value. However, the p-value associated with this coefficient is 0.7606, which is greater than the conventional significance level of 0.05. This high p-value indicates that the coefficient for "OG" is not statistically significant.

Similarly, "GEG" lacks significance, as its negative coefficient and p-value of 0.9272 point to a negligible impact. The variable "IN" bears a coefficient of 0.006126, denoting a 0.006-unit effect on the dependent variable, but its high p-value (0.9000) negates statistical significance.

The "TD / GDP1" variable involving the TD/GDP ratio exhibits non-significance

with a negative coefficient and p-value of 0.7878. "C" demonstrates a negative relationship, entailing an associated decrease of approximately 0.403 in the dependent variable. However, its high p-value (0.8107) suggests a lack of statistical relevance.

Turning to Residual Analysis: Residuals capture unexplained fluctuations in the dependent variable, evading the model's grasp. The Durbin-Watson statistic of 1.956813 indicates no significant serial correlation in residuals, signifying independence of observations over time. Coefficients of lagged residuals (RESID (-1) and RESID (-2)) suggest persistent unexplained variability between periods, potentially challenging model assumptions.

The R-squared value, at 0.035767, signifies that roughly 3.58% of the variance in the specified set of independent variables is included in a mode account for the variation in the dependent variable. This underscores the limited collective explanatory power of the chosen variables in elucidating changes in the dependent variable. Notably, the negative adjusted R-squared of -0.213068 raises concern, suggesting potential model complexity or inclusion of extraneous variables.

The F-statistic holistically assesses the model's significance. The p-value (Prob(F-statistic)) of approximately 0.996280, nearly equal to 1, indicates a lack of substantial overall explanatory ability within the model. Economically, this suggests that the combined effect of the chosen variables may inadequately explain the observed fluctuations in the dependent variable.

Additional Metrics: Mean, standard deviation of the dependent variable, and regression's standard error reveal prediction variability and precision. The sum of squared residuals (37.48012) gauges model accuracy. Akaike and Schwarz criteria assist in evaluating fit and complexity. Numerous variables lack statistical significance, implying unreliable impact on the outcome. Variable interpretation is context-dependent. R-squared, adjusted R-squared, F-statistic, and other metrics provide holistic model insights.

Table 5.7: Least Square (RESID)

Variable	Coefficient	Std. Error	t- Statistic	Prob.
(TD / GDP<0.8518228) * TD / GDP				
	1.537711	4.051619	0.37953	0.7069
(TD / GDP>=0.8518228) * TD / GDP				
	1.200866	3.623139	0.331444	0.7425
OG	0.000159	0.000516	0.307408	0.7606
GEG	-7.09E- 06	7.70E-05	-0.09215	0.9272
IN	0.006126	0.048351	0.126697	0.9
TD / GDP1	-0.98097	3.613045	-0.27151	0.7878
C	-0.40307	1.668576	-0.24157	0.8107
RESID (-1)	0.048848	0.19512	0.250349	0.804
RESID (-2)	0.211527	0.198638	1.064888	0.2952
R-squared	0.035767	**Mean dependent var**	-4.88E-16	
Adjusted R-squared	-0.21307	**S.D. dependent var**	0.998337	
S.E. of regression	1.099562	**Akaike info criterion**	3.22288	
Sum squared resid	37.48012	**Schwarz criterion**	3.60286	
Log-likelihood	-55.4562	**Hannan-Quinn criteria.**	3.36024	
F-statistic	0.143737	**Durbin-Watson stat**	1.956813	
Prob(F-statistic)	0.99628			

"**Note**: OG= Output Gap; GDP= Gross domestic product; FB= Fiscal balance; IN= Inflation; TD/GDP= Total debt/GDP; GEG= Government expenditure gap"

Source: Author's calculation.

In table 5.8 Markov Switching Model (MSM) has been employed to analyze the fiscal policy reaction function in Pakistan, a model that identifies two distinct economic regimes: Active and Passive. Our fiscal policy has become more sensitive in the Active regime. In particular, the negative statistical significance (coefficient = -0.36228O) of a change in real interest means that during active phases fiscal policy decisions are clearly influenced by changes in real interest rates. In addition, the constant term (C) has a negative significance involving an elasticity of -3.916012, which indicates that when these two periods are active fiscal policy is determined by exogenous economic factors. Other variables, like the adjustment of fiscal policy during these periods) are more or less important.

Table 5.8 Markov Switching Model: Fiscal Policy Reaction Function

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Regime 1 (Active)				
REALINT	-0.36228	0.084431	-4.290861	0.0000
C	-3.916012	1.216884	-3.218065	0.0013
Debt Lag	-1.70519	2.47884	-0.689910	0.4903
OUTPUTGAP	-0.000128	4.69E-05	-2.729004	0.0064
EXPGAP	0.041069	0.017344	2.367943	0.0179
Regime 2 (Passive)				
REALINT	0.257615	0.18376	1.40191	0.1609
C	-10.7021	1.099101	-9.737144	0.0000
Debt Lag	-0.990759	5.370657	-0.184476	0.8536
OUTPUTGAP	-0.000325	0.00015	-2.169135	0.0301
EXPGAP	0.083019	0.046084	1.801457	0.0716
Common				
LOG(SIGMA)	-0.294504	0.147413	-1.997809	0.0457
Diagnostics				
Probability (Active)	0.55			
Probability (Passive)	0.44			
Log likelihood			-59.40942	
Mean dependent var	-6.192683	**S.D. dependent var**		1.6434
S.E. of regression	1.396278	**Sum squared resid**		58.488
Durbin-Watson stat	1.655563	**Schwarz criterion**		4.0755
Hannan-Quinn criter.	3.730017	**Akaike info criterion**		3.5322

With the passive regime, these variables mean something else and point in another direction. Interestingly, however important it may once have been, REALINT now has a mere 0.257615 as its coefficient but is not statistically significant (non-NG). But note that the constant term (C), which shows how fiscal policy during passive periods is driven by exogenous economic factors, stays very worryingly high at -10.70210. But variables such as OUTPUTGAP still show significance to some extent, which seems to indicate that no matter how passive fiscal policy is in fact all times at least somewhat responsive.

The other characteristic of both regimes is the LOG(SIGMA) score, which measures error variation. But the variable is significant coefficient = -0.294504 underscoring how economic uncertainty and volatility influence fiscal policy decisions. As for prognostics, the model's estimates of a 0.55 and 0.44 likelihood

respectively that these two states (Active or Passive) will transition into indicate how economic conditions are likely to develop in the future. The negative log likelihood of -59.40942 indicates that the model fits well with data. Also, diagnostic tests such as the Durbin-Watson statistic, Akaike information criterion, Schwarz criteria and Hannan - Quinn criteria can all be used to assess model quality. The Durbin-Watson statistic (1.6553) does not suggest any serial correlation in the model residuals. The Markov switching model reflects quite well on fiscal policy in Pakistan, and shows different patterns under active or passive regimes. However, these results also provide useful reference for policymakers and economists trying to understand how best to adjust fiscal policy in the face of changing trends.

In table 5.9 has used Switching Model (MSM) to study the ways in which monetary policy responses have changed over time, identifying two economic regimes dubbed Active and Passive. Monetary policy during the Active regime is also sensitive to these indicators, but in different ways. The only statistical constant (C) is - 4.526154, higher and thus less significant than the others due to its high standard error of measurement at Similarly, inflation (INFLATION) is a major variable affecting fiscal policies. It has a negative impact of -0.967039 on policy decisions that is highly significant (Prob.).

Table 5.9 Markov Switching Model: Monetary Policy Reaction Function

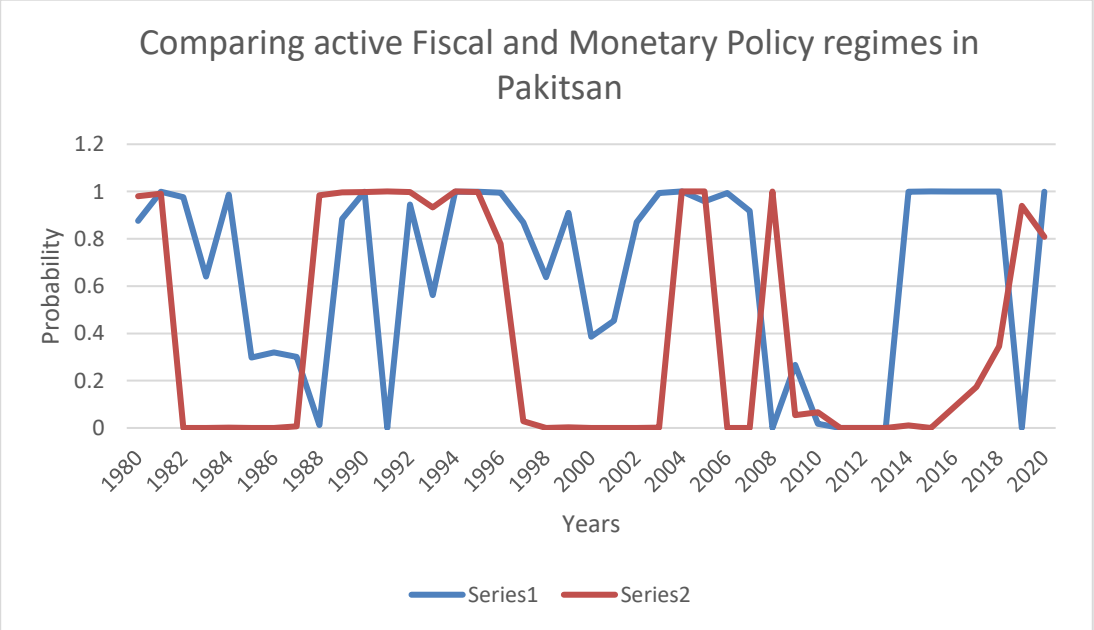
Variable	Coefficient	Std. Error	z-Statistic	Prob.
Regime 1 (Active)				
C	-4.526154	5.487671	-0.824786	0.4095
INFLATION	-0.967039	0.173869	-5.561899	0.0000
OUTPUTGAP	-0.001543	0.000869	-1.775789	0.0758
FPGDP	-0.929436	0.605663	-1.534576	0.1249
EXR	0.237489	0.079971	2.969673	0.003
Regime 2 (Passive)				
C	4.912617	1.31088	3.747573	0.0002
INFLATION	-0.972743	0.08948	-10.87107	0.0000
OUTPUTGAP	-0.000437	0.0001	-4.358173	0.0000
FPGDP	-0.325285	0.209919	-1.549576	0.1212
EXR	0.123909	0.029618	4.183559	0.0000
Common				
LOG(SIGMA)	0.070892	0.14087	0.503242	0.6148
Diagnostics				
Probability (Active)	0.67			
Probability (Passive)	0.32			
Log likelihood			-72.91446	
Mean dependent var	0.349281	**S.D. dependent var**		3.419173
S.E. of regression	2.247206	**Sum squared resid**		151.498
Durbin-Watson stat	1.332833	**Schwarz criterion**		4.734277
Akaike info criterion	4.190949	**Hannan-Quinn criter.**		4.388799

While not very striking, the output gap itself (OUTPUTGAP) shows a negative coefficient of -0.001543, indicating that to some extent monetary policy responds flexibility to changes in production volume. Yet the monetary policy as a percentage of GDP (FPGDP) and exchange rate (EXR), variables do not seem to have much relation-ship with active phase fiscals' decisions. Under the Passive regime, monetary policy is also different. With a respective coefficient of 4.912617, the constant term (C) is extremely important and indicates who directs fiscal policy during idle periods, the sender or the recipient? INFLATION is another important variable, with a negative weight (- 0.972743), which turns out to be very significant (Prob.). This was equivalent to zero, highlighting the

significance of inflation when economic conditions become passive. Also, since the index of output gap (OUTPUTGAP) has such a high degree try and negative influence on fiscal policies. Just as with the Active regime, for passive stages FPGDP and EXR variables do not heavily influence fiscal decisions.

Both regimes contain the logarithm of residual volatility (LOG(SIGMA), but this does not have statistical significance with a coefficient of 0.70892 (Prob observed = ×1). Model diagnostics indicate probabilities of the Active regime and Passive regime at 0.615, providing a quantitative idea about economic conditions cycling between these two separate states. A negative log likelihood of -72.914 indicates that the model fits in nicely with observed data.

What's more, diagnostic statistics like the Durbin-Watson statistic, Akaike information criterion and Schwarz as well as Hannan-Quinn criteria are also used to assess model quality. This is very similar to the response of fiscal policy in Kenya, which can be well modeled by Markov Switching Model. It is divided into Active and Passive regimes depending on the value of economic indicators, including inflation and the constant term. The diagnostic results shed further light on the quality of fit and possible directions for future inquiry.



This probably refers to the probability or likelihood of active fiscal policy actions over time. Fiscal Policy and the Economy involves government spending, or taxation. A proactive fiscal policy would be tantamount to activating a government

stimulus, or alternatively struggling with the task of reining in an economy. Monetary (Active) This is perhaps the probability or likelihood of an active monetary policy. Another type of monetary policy is the central bank's management of interest rates and money supply aimed at macroeconomic goals such as inflation control, employment level adjustments or currency stabilization. An active monetary policy would mean changes in interest rates or other instruments to generate conditions.

This chart develops an economic policy map that contextualizes actions taken from 1980 to 2020. What fluctuations are reflected in the lines may reflect changes in economic conditions and adjustments to fiscal and monetary policies. For instance, the highs and lows in the probability lines can tell us more about when active economic policy is needed or whether we need to wait for a while before taking action. How fiscal and monetary authorities handled these situations became part of the story behind many key economic changes. For clarification of the precise meaning, one still needs to see the relevant data as well as how these probabilities were derived.

CHAPTER 6
CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion:

The journey of Pakistan's economy from 1980 to 2020 is a tale of resilience and adaptation. Navigating through global economic upheavals, Pakistan experienced an intensification in its debt profile, but strategic macroeconomic adjustments, especially in the 1990s, were key to its stabilization. This period witnessed significant shifts in interest rates, fiscal balance, and the total debt-to-GDP ratio, highlighting the interplay between global and local economic forces.

The study delves deep into Pakistan's economic data, revealing the intricate relationships among various economic indicators through comprehensive statistical analysis. Descriptive analytics provide insights into the changing economic scenarios, while correlation analyses between GDP, fiscal balance, and inflation uncover the complex interrelations and drive a deeper exploration into the causal factors.

A critical aspect of this research is the emphasis on evaluating the stationarity of economic variables and their interdependencies. Utilizing tools like the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests, and threshold regression, the study underscores the importance of metrics like the Total Debt to GDP Ratio. These findings highlight the need for prudent fiscal strategies, taking into account the broader economic context in a fluctuating global landscape.

The research also sheds light on the intricacies of economic modeling. The use of multiple threshold tests helps identify key transition points in variable relationships, while tests like the Breusch-Godfrey highlight serial correlations, underlining the complexity in economic data interpretation. These rigorous statistical analyses lay the groundwork for sound economic projections, integrating various elements that shape national fiscal trajectories.

Central to this study is an in-depth examination of fiscal policy dynamics in Pakistan. Drawing on Bohn's work, the regime-switching model offers a modern lens to observe the fluctuations between fiscal sustainability and instability. Although the diagnostics affirm the model's robustness, the dominance of the unsustainable regime points to a need for policy recalibration. The research underscores the importance of balancing monetary and fiscal policies, two crucial aspects of macroeconomic management.

Looking ahead, this research paves the way for further exploration. Future studies could expand the range of economic determinants examined or apply these methodologies in different economic contexts, contributing to the global conversation on fiscal policy dynamics.

6.2 Recommendation

Based on the conclusions drawn from the study on the dynamics and sustainability of Pakistan's fiscal policy, several tailored recommendations for policymakers emerge. Firstly, considering the unsustainability of the fiscal system, it is imperative for officials to implement proactive measures to address budgetary imbalances. This involves responsible spending, diversification of revenue sources, and improved tax administration to enhance the government's financial sustainability and mitigate fiscal imbalance risks.

Furthermore, the study highlights the negative impact of GDP fluctuations and external factors on fiscal sustainability, underscoring the need for economic growth promotion and efficient external affairs management. Policymakers should prioritize strategies that boost investment, enhance commercial competitiveness, attract foreign direct investment, and improve external debt management. A robust economy, combined with adept handling of foreign affairs, is key to fostering a more sustainable fiscal policy.

Regular monitoring of fiscal policy effectiveness is also crucial. Policymakers should establish systems for continuous assessment of fiscal sustainability, including fiscal stress tests, debt sustainability analyses, and evaluation of fiscal policy's impact on macroeconomic indicators. These assessments can provide timely insights for identifying emerging threats and formulating corrective measures.

Encouraging further research and analysis of fiscal policy within the national context is vital. Studies focusing on the influence of political dynamics, institutional frameworks, and macroeconomic variables on fiscal viability can offer deeper insights, guiding evidence-based policy decisions.

Finally, transparency and accountability in fiscal processes must be prioritized to enhance budgetary sustainability. This can be achieved through initiatives that improve public financial management systems, budget processes, and promote citizen engagement in fiscal decision-making. Fiscal practices that are transparent and

accountable to taxpayers not only build public trust but also reduce corruption risks, contributing to long-term fiscal sustainability.

These recommendations, derived from the study's findings, aim to guide policymakers in enhancing fiscal policy coordination, adopting proactive measures, and ensuring continuous evaluation and transparency. Implementing these strategies can lead to balanced and sustainable fiscal policies, fostering macroeconomic stability and growth in Pakistan over the long term.

6.3 Future Direction

The following are some potential directions for future research that can expand upon the findings and contribute to a greater depth of comprehension of fiscal policy:

The execution of a longitudinal study has the potential to yield new understandings regarding the development of the dynamics of fiscal policythrough time. Researchers can uncover trends, patterns, and shifts in the behavior of fiscal policy by analyzing data from several different time periods. This longitudinal approach can help evaluate the efficacy of policyactions and assess the economic and political factors that have an impact factor on the long-term viability of the government's finances.

It is possible to have a better understanding of Pakistan's one-of-a-kind difficulties and prospects by drawing comparisons between the dynamics and sustainability of Pakistan's fiscal policy and those of other countries orregions. This comparative analysis can help discover best practices, policy lessons, and proposed policy reforms that have the potential to be applied toincrease fiscal sustainability. In addition, the study of regional dynamics hasthe potential to shed information on the influence of regional economic integration and collaboration on fiscal policy.

It is possible that in the future, one of the most important areas of research will be to examine the resilience of fiscal policy in the face of external shocks. Assessing the impact of events such as global economic crises, natural disasters, or geopolitical shifts on fiscal sustainability can provide valuable insights into the ability of fiscal policy to withstand and recover from adverse events. This research can serve as a guide for policymakers asthey work to establish methods to improve resilience and offset the negativeeffects of external shocks on budgetary sustainability.

A more sophisticated picture of the dynamics of fiscal policy can beobtained by broadening the scope of the analysis such that it focuses on certain economic subsectors. It is possible for policymakers to more effectively allocate resources and

priorities expenditure areas that contribute to long-term economic growth and development if they analyze the fiscal sustainability of various sectors, such as healthcare, education, infrastructure, or social welfare. Sectoral analysis can also uncover sector-specific challenges and opportunities that may require tailored policy interventions.

The predictive power of fiscal policy analysis can be improved by the application of dynamic modeling approaches and forecasting methods.Researchers can estimate future fiscal dynamics, analyze the possible impact of policy reforms, and assess the long-term ramifications of fiscal decisions by incorporating time series analysis, econometric models, and forecasting techniques into their work. The use of dynamic modeling and forecasting can provide policymakers with assistance in making educated judgments and developing sustainable fiscal policies.

Evidence-based insights into the effectiveness of fiscal policy measures and changes can be obtained through the conduct of thorough evaluations and impact assessments of those measures and reforms. Researchers can examine the influence of particular fiscal policies on important macroeconomic indicators, social outcomes, and the overall well-being of the population by employing econometric approaches, counterfactual analyses, and qualitative methodologies. This evaluation has the potential toeducate policymakers about the results of the policy choices they have made and to direct the making of future policy decisions.

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