

IMPACT OF PUBLIC DEBT ON INFLATION IN NEPAL

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By

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DECLARATION

I, Bijaya Kumar Ghimire, declare that this thesis entitled IMPACT OF PUBLIC DEBT ON INFLATION IN NEPAL submitted to Central Department of Economics is my own original work except where otherwise indicated or acknowledged in the thesis. The thesis does not contain materials which has been accepted or submitted for any other degree at the University or other institution. All sources of information have been specifically acknowledged by reference to the author(s) or institution(s).

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ABSTRACT

The study aimed to analyze the source and composition of public debt and examine its impact on inflation in the Nepalese economy. The study was complete under the descriptive and analytical research design base on secondary nature of study, collected from the published sources, from the year 1990/91 to 2021/22. For the data organization excel and Eviews-12 SV software. Analyzed through the trend analysis, correlation, regression line and t-test etc. where consumer price index (CPI) was dependent variable, Public debt, GDP and M2 are independent variables. The trend of internal debt was at increasing because of initial phase there are large number of donor countries provided grant to developing countries that means no any provision for the return grant amount. But, certain time after most country's lending as loan to the developing countries. So the countries like Nepal, then the countries taking the internal loan from the various internal sources. The main sources internal debt is Treasury bill, development bond, national saving bond, citizen saving bond, special bond and foreign employment saving bond. The inflation in the economy also at increases, debt increases, gross domestic product increases, even the consumer price index as combination too increases .CPI is a major indicators to find out the inflation portraiture of the country and economics. We found that CPI and public debt are somewhat connected, with a moderate positive level of 0.57. This means when one goes up, the other tends to go up moderately. The connection between CPI and GDP is very strong, with a high positive correlation of 0.99. Similarly, the link between CPI and money supply (M2) is also strong, with a high positive correlation of 0.94. This suggests that when CPI rises, M2 tends to increase significantly as well. The constant coefficient in regression equation is -24.83. The R-square value is 0.9885, indicating that 98.85% of CPI values can be explain by the independent variables. The adjusted R- squares values in our study find out 0.9873. This suggest that 98.73% of the variation in CPI is explain by the independent variables.

Keywords: Inflation, public debt, gross domestic product, broad money supply and consumer price index.

ABBREVIATION

ADB	–	Asian Development Bank
ADRL	-	Autoregressive Distributed Lag
CPI	-	Consumer Price Index
GDP	-	Gross Domestic Product
G7	-	Group of Seven Countries
IMF	-	International Monetary Fund
LDC	-	Least Developed Country
M2	-	Broad Money Supply
MPC	-	Marginal propensity to consume
MEI	-	Marginal Efficiency of Investment
NRB	-	Nepal Rastra Bank
OLS	-	Ordinary Least Square
PD	-	Public Debt
PAVAR	-	Panel Vector Auto Regression
SPI	-	Sensitive Price Index
SWRI	-	Salary and Wage Rate Index
VAR	-	Vectors Auto Regression
VECM	-	Vector Error Correction Model
WB	-	World Bank
WPI	-	Wholesale Price Index

CHAPTER - I

INTRODUCTION

1.1 Background of the Study

The term "public debt" describes debts that the government has incurred, either domestically or abroad. Debt government assumes, such as bonds or loans, and which requires it to make interest and principal payments over a certain time period. By issuing bonds and bills, governments generate debt. The result of annual budget shortfalls is public debt. It is the outcome of years of government officials spending more money than they get in tax collections. Government deficit budget size has an impact on public debt, and vice versa. What a nation owes to lenders abroad is its national debt. These might include a person's business or even other governmental entities. Typically, it alludes to a country's debt. However, several nations additionally feature the sums that states, provinces, and local governments owe. In advanced and emerging market economies, public debt has been growing more slowly compared to the increasing rates in low-income developing countries. Public debt arises mainly from debt financed deficits.

When alternative public revenue streams fall short of meeting the needs, the government must take on public debt to fund its operations. The proceeds from such borrowing are considered public revenue in this broader sense. But debt does not count as income since it must be paid back together with interest to the lender. Instead, it counts as a public expense. When the government issues loans and borrows, either domestically or internationally, public debt is created.

Public debt is a relatively new concept that did not exist until the 18th century. Public debt becomes increasingly common for maintenance and rebuilding following the First and Second World Wars. World began borrowing money tomorrow and are continuing doing so to advance their economies. But in the modern era, the increase in public debt is a reflection of all countries' shifting economic and political conditions. (Aybarc, 2019).

There is no question that a country requires finance for its economic development and progress, and the best option for financing relies on the resources available, the degree

of economic development, the government's financial condition, and the strength of the external sector. Most of the least developed nations (LDCs) seek outside funding due to their large trade and savings gaps. As an LDC, Nepal likewise fits under this category and has relied on foreign assistance for at least 40 years to support its development efforts. (Bhatta, 2003).

One of the world's least developed nations (LDCs) is Nepal. The severe lack of resources to support public expenditures is a serious issue for all LDCs. In this circumstance, they need to borrow money. However, in the current world, public borrowing is becoming a crucial method of government financing alongside other sources of income, such as tax and non-tax revenue, not just for the LDCs but also for rich countries. When a person's income is insufficient to cover their expenses, they should borrow money from someone or something. When revenue falls short of expenses, government should borrow in a similar way (Bhattra, 2013).

While the level of Nepal government spending has been rising over the years, the country's ability to raise enough money to pay for it is severely constrained by the steepness of taxation system. Public debt is a crucial tool for mobilizing resources for the nation's economic development and growth in such a complicated circumstance. The Nepalese government has a dedicated legal staff that handles resource collections from the public debt. The framework for resource mobilization through public debt is provided by the constitutions of Nepal in 2072. The current constitution has a provision for a consolidation fund. The fund receives credit for the funds obtained through the public debt.

Increased interest rates brought on by rising public debt can lower investment, impede interest-sensitive durable consumption, and lower the value of household assets, which has the indirect impact of damping consumption through the wealth effect. The severity of these possible negative effects will depend on how much the government debt actually boosts interest rates (Engen & Hubbard, 2004). The central bank has power over the real interest rate to affect aggregate demand and, consequently, inflation in circumstances where the nominal interest rate is established and price adjustments are staggered. Any increase in the real interest rate imposed by the central bank reduces current demand and strains the government budget since it affects how much it costs to service the nation's debt. The primary takeaway is that when

distortionary income taxation is in place, the ensuing tax rate adjustment that is required to stop the debt from spiraling out of control reflects back on the private sector by having a negative impact on labor supply. Higher taxes may boost inflation and even topple the economy since a decline in labor supply results in increased manufacturing costs the ability of higher real interest rates to reduce inflation. Determinacy with active interest rate policy necessitates that tax revenues respond favorably but moderately in response to brief increases in government debt if short-run deficits are permitted to make debt endogenous. However, the less important the tax response to budgetary pressure and consequently debt and thus the inflation induced supply contraction is for determinacy, the larger the interest rate reaction to inflation and so the inflation induced demand slack (Linnemann, 2006).

The considerable increase in debt load is mostly the result of the government's increasing investment requirements for structural reform, macroeconomic stabilization, and infrastructure development. Along with the country's liberalized economic strategy established in the middle of the 1980s, in general, and with the restoration of multiparty democracy in 1990, in particular, the foreign creditors pay close attention to this investment demand. The government's increased revenue spending and decreased resource mobilization have also added to the debt load. The amount of state borrowing is also rising in Nepal as a result of rising public spending and inflation. The weak economic growth rate of Nepal is used as the foundation for evaluating the burden of governmental debt and debt servicing capabilities. In liberal Public borrowing is regarded as the most suitable method of resource gathering for development in Nepalese economic policy.

Inflation means that prices for things like goods and services generally go up over time, and this makes money's buying power go down. It is widely recognized as a monetary phenomenon, with its management falling under the jurisdiction of monetary authorities, as argued by Friedman (1968). Expansionary monetary policies, according to Friedman, lead to increases in both real output and the general price level in the short run, with only the price level continuing to rise in the long run It's essential to understand that inflation isn't just about money; it's also a concern for fiscal policy because fiscal factors can affect price stability A higher level of inflation is considered an economic risk in any economy, as it disrupts economic stability.

Inflation means that over time, prices in general go up, which makes your money buy less. We use different indicators to check these price increases, like the Consumer Price Index (CPI), Wholesale Price Index (WPI), Sensitive Price Index (SPI), Gross Domestic Product (GDP) deflator, and others. In Nepal, the main ones we look at are CPI, WPI, and the Salary and Wage Rate Index (SWRI). CPI is especially important because it directly shows how inflation affects regular people's expenses. When prices go up, we call it "inflation," and we measure it by seeing how much these price indicators have gone up as a percentage between two time periods

High inflation complicates long-term economic planning, as it encourages households and firms to shorten their planning horizons and allocate resources to managing inflation risk rather than focusing on more productive activities, as noted by Bernanke (2006). The price level and its growth, i.e., inflation, are crucial economic indicators. Inflation is when prices throughout the entire economy keep going up steadily over time it results from an increase in the volume of money and credit relative to available goods, leading to a substantial and ongoing rise in the general price level. To clarify, inflation is a significant and continuous increase in the volume of money and credit relative to available goods, causing a substantial and continuous rise in the general price level. It's essential to distinguish these definitions from a common misconception arising from our efforts to measure the general price level accurately, the primary factors driving inflation include:

Demand-Pull: This occurs when high demand for goods and services drives up their prices.

Cost-Push: When the costs of production rise, it can push prices higher.

Increased Money Supply: When there's an abundance of money in circulation, it can lead to inflation.

Devaluation: A decrease in the value of a currency can make imports more expensive, contributing to inflation.

Rising Wages: If wages increase across the board, it can lead to higher prices.

Monetary and Fiscal Policies: The policies set by governments and central banks can also influence inflation.

Around the world, the most widely used method for calculating inflation is the Consumer Price Index (CPI). Governments across the globe rely on this method to gauge inflation. The CPI measures the percentage change in the prices of a selected basket of household goods and services. It is, without a doubt, one of the most recognized indicators for tracking inflation trends.

Public debt can potentially contribute to inflation through various mechanisms although it is important to note that the relationship between public debt and inflation is complex, and not all public debt necessarily leads to inflation, some ways in which public debt can influence inflation;

- i. Monetarism mechanism of debt
- ii. Interest rates
- iii. Crowding out effect
- iv. Currency depreciation

This thesis sets out to conduct a comprehensive examination of past scholarly research regarding the connection between public debt and inflation, delving into both theoretical and empirical aspects. Its objective is to investigate the ongoing debate concerning whether the association between public debt and inflation is positive or negative. This research endeavor is geared towards enriching the existing body of knowledge concerning public debt and inflation. Additionally, the study intends to offer policy recommendations regarding the management of public debt in the context of inflationary processes.

1.2 Statement of the Problem

Nepal is counted among the world's least developed nations. Like many other such countries, Nepal faces a significant challenge due to its limited resources to support public spending. To transform into a modern and prosperous society, the government needs a substantial amount of money for various purposes, such as relief,

rehabilitation, and reconstruction. In countries like Nepal, where the public's ability to pay taxes is limited, public debt can become a major source of revenue.

The government's investments are crucial for Nepal's economic progress, especially in areas like education, healthcare, transportation, and communication. However, building such essential infrastructure comes with a high cost, and given the limited tax-paying capacity of the general population, government borrowing becomes the most viable option. This need for borrowing is further intensified by various factors.

Nepal is still in the process of development, and public debt has become a common method to finance budget deficits. Both domestic and foreign debt plays significant roles in Nepal's economy. However, despite being a means to finance the country, public debt has become burdensome. The nation has struggled to make responsible investments in productive sectors.

Effective management of public debt is essential. To achieve this, factors like export earnings, revenue growth, and the structure of real interest rates need to be favorable. When a country takes on more public debt, government spending tends to increase. This, in turn, can lead to a reduction in private investment and higher interest rates across the nation.

Given the focus of this study on how government debt affects inflation, it seeks to address several key questions after accounting for these variables. However, the study's research questions are included below.

- a) What are the sources and composition of public debt of government of Nepal?
- b) How the public debt impacts the Inflation of Nepal?

1.3 Objectives of Study

To analyze the sources and composition of public debt of the, govern this study has a few big goals. First, it aims to dig into the connection between public debt and inflation. More specifically, it wants to see how public debt affects inflation in Nepal. Here are the specific things it plans to do:

a) Take a close look at where the government of Nepal gets its public debt from and what it's made up of.

b) Figure out how public debt influences inflation in Nepal.

1.4 Significance of the Study

Understanding how public debt influences inflation is of paramount importance for emerging nations like Nepal, as it significantly impacts their economic growth. This subject stands as a vital area of research.

For a nation to prosper and build economic strength, the government requires substantial funds for reconstruction, rehabilitation, and relief efforts. Given the limited tax-paying capacity of the population, public debt often becomes a major source of revenue in this context. Furthermore, Nepal secures loans both domestically and from foreign sources.

However, the sustained increase in foreign borrowing has placed a considerable burden on the government. In Nepal, well-managed public debt can have a positive impact on investment and the GDP per worker, contributing to overall economic advancement. Wise utilization of debt in productive sectors drives economic progress in the nation. To foster economic growth, it is imperative to reduce public debt in Nepal.

The significance of this study lies in its potential contributions to future research. The findings of this study can inform subsequent research in this area, benefiting further investigations. Additionally, the study provides valuable insights for policymakers seeking to formulate effective strategies to channel public debt into productive sectors.

This research offers valuable information that can aid in the development of policies aimed at preventing the government from borrowing excessively from domestic sources to support Nepal's economic growth

1.5 Limitations of the Study

Every research project encounters various limitations along the way. This study, too, has its own set of limitations in terms of its focus and scope. Additionally, it's constrained by examining only a handful of factors, such as Gross Domestic Product, public debt, Consumer Price Index, and Broad Money Supply. Another limitation is that it relies solely on data from NRB, which might mean that the definitions of these variables could differ from other sources. Let's look at a few limitations this study faces

- i. The study period covered is 31 years only from 1990/91 to 2021/22.
- ii. The accuracy of data hinges on the reliability of their sources.
- iii. Only general statistical and econometric tools were used.
- iv. The objectives of the study were academic purpose partial fulfillment of master in economics.

1.6 Organization of the Study

This thesis unfolds across five distinct chapters, each serving a unique purpose:

Chapter One: Introduction

In the opening chapter, we provide a glimpse into the background of our study, articulating the problem at hand, posing research questions, outlining our study objectives, emphasizing its significance, acknowledging limitations, and delineating the structure of the thesis.

Chapter Two: Literature Review

The second chapter embarks on a journey through existing scholarship. Here, we explore both theoretical and empirical perspectives. The empirical facet is further segmented into an international context and a Nepalese context, shedding light on any research gaps we encounter.

Chapter Three: Research Methodology

Chapter three delves into the nuts and bolts of our research methodology. We construct a conceptual framework, define our research design, elucidate the nature and sources of data, detail the study period covered, elaborate on our data collection tools and methods, describe data organization and processing, outline our data analysis tools and methods, specify our models and variables, and prepare for hypothesis testing.

Chapter Four: Data Presentation and Analysis

The fourth chapter forms the core of our study. It is here that we present the sources and composition of public debt and dissect the effects of public debt on inflation.

Chapter Five: Major Findings, Conclusion, and Recommendations

The fifth and final chapter brings our journey to a close. We encapsulate our major findings, draw conclusions based on our research, and offer recommendations for future consideration.

CHAPTER -II

REVIEW OF LITERATURE

Review of literature is like searching and looking at all the book and articles that have been written about a certain topic. It's like gathering all the information that other people have already written. This information can be form articles, research paper, and other sources. It's important because it show that the person doing the study knows a lot about the topic and can be trusted. The review also explain how the current study is connected to what others has done before .It's like a summary of what has been studied before and how this new study fits in. It's like saying the researcher has picked up knowledge from others and is now beginning something fresh and different

In this case, the review is about the relationship between thing like inflation (when price go up), public debt (money the government owe), how much money is in the economy, the cost of good (like how much a loaf of bread cost), and the total economic activity of a country. The review looks at different idea and studies about these topic, both from around the world and from within the country. It's trying to see what has been studies before and what hasn't, so that new research can build on what's already known. This chapter undertakes a comprehensive examination of various theories and empirical studies pertaining to Inflation, Broad Money Supply (M2), Consumer Price Index (CPI), Public Debt (PD), and Gross Domestic Product (GDP). It is structured into three key components: a theoretical review, an empirical review encompassing both international and national perspectives, and an exploration of research gaps.

2.1 Theoretical Review

Classical economists like J.B. Say, David Ricardo, and T.R. Malthus had a negative view of public debt. They believed that when the government borrows money, it doesn't contribute to economic growth and, instead, burdens the country with interest payments.

The Neo-classical school of thought used something called the Cobb-Douglas production function to show that when the government accumulates debt, it reduces

the amount of money available for private investment. This can lead to an increase in the return on investment (the marginal product of capital) and raise real interest rates.

Modern ideas about public debt tend to favor a hands-off approach, known as *laissez-faire*. Keynesian theory, for example, suggests that an increase in public debt can boost the national income through various channels.

Similarly, in the post-Keynesian theory of public debt, economist Buchanan (1970) challenged the modern viewpoint that public debt is not a burden on the economy and cannot be shifted to future generations, arguing that it's not so clear-cut.

2.1.1 Classical Theory of Public Debt

Classical economists had different views on public debt. They were generally supportive of public debt for productive purposes, especially for capital projects that didn't require additional taxation. These were known as "self-liquidating projects."

However, J.B. Say strongly opposed public debt. He believed that when the government borrowed money, it used it for unproductive consumption and expenses. He thought this was wasteful because the money was not put to good use, and the country had to pay interest on it every year. Say argued that the yearly interest payments were a burden on the nation's capital.

David Ricardo considered government debt one of the worst causes of national suffering. He believed that it led to the loss of the country's initial capital. Adam Smith's views were also influenced by Ricardo, and both of them agreed that the loss of the initial capital, rather than the interest payments, was the major problem with national debt. They argued that when the government borrowed money, it essentially took that money away from productive uses in the country. The interest payments, in their view, were just a transfer of money from taxpayers to creditors. They believed that paying down the debt didn't significantly affect the nation's ability to pay taxes, and it could result in capital flowing out of the country due to interest and tax obligations (Churchman, 2001).

On the other hand, Malthus (1803) had a more nuanced perspective. He initially believed that those who lived on the interest from the national debt contributed to

economic demand and distribution. According to him, this ensured the necessary consumption to stimulate production. However, he later modified his views to align more closely with the classical economists, acknowledging that there were indeed problems associated with public debt. The taxation needed to meet interest payments could be harmful, and people generally thought that the debt should be paid off to some extent. Malthus also recognized that the presence of debt could worsen the economic effects of changes in the value of money.

In summary, classical economists had varying opinions on public debt, with some supporting it for productive purposes and others seeing it as a burden on a nation's capital and economy.

2.1.2 Modern Theory of Public Debt

Modern theory of public debt is an offset of the economics of depressions or the Keynesian economist. The economic anomaly created by the Great Depression of the 1930s gave a way to development of the new theory of public debt. Modern finance's economic concept of public debt illustrates a fundamental break from "Laissez Faire" ideas. After the Great Depression of the 1930s, this position significantly changed. The traditional theory of public debt, which assumed full employment and the inefficiency of public spending, had completely disintegrated. These presumptions served as the foundation for the traditional opposition to state borrowing. Those who adhere to Keynes' thinking consider how the public debt generates money and reject the idea that internal debt may harm the society. (Churchman, 2001). Modern Theory of public debt is concerned with Macro economic variables and not with individuals utilities. It assumes the whole economy as a unit. Modern economist believes that internally held public debt involves no burden since we owe it to ourselves.

2.1.3 Keynesian Theory of Public Debt

The Keynesian critique of the notion that economies naturally tend toward equilibrium at full employment led to a reevaluation of traditional budgeting and public finance principles. Keynes argued that there would be available resources for employment. He contended that an increase in public debt could, through various mechanisms, stimulate national income. Keynes advocated for government borrowing

for all purposes and linked public borrowing to financing deficits, with the goal of increasing employment and production by boosting the economy's effective demand. In contrast to traditional views, Keynes did not distinguish between productive and non-productive spending; asserting that borrowing for personal consumption was just as valuable as borrowing for investment in productive assets because personal consumption spending would, in turn, stimulate investment (Apsromourgos, 2018).

2.1.4 Post-Keynesian Theory of Public Debt

The Post-Keynesian theory of public debt emerged as a response to the increasing public debt in many countries, which was causing inflation and rising prices. Recently, there has been a renewed debate about how to assess the impact of public debt. This debate was sparked by modern theories of public debt, which were also growing rapidly and included a significant non-developmental aspect.

Buchanan (1958) challenged the prevailing views of these modern theories in his work titled "*Public Principles of Public Debt.*" He argued against the idea that public debt has no negative economic consequences and cannot be shifted to future generations, regardless of how it is financed. Later on, J. E. Meade and R. A. Musgrave also supported Buchanan's proposal.

Buchanan aimed to establish his argument in the most comprehensive manner possible. He contended that future generations bear the true burden of public debt. Comparing public and private debt is a valid way to understand this issue. From a basic perspective, both internal and external debt is equivalent.

2.1.5 Theoretical Review of Inflation

There is different view of inflation theory 1) classical theory of inflation 2) Neo Classical theory of inflation 3) Keynesian theory of inflation 4) monetary view of inflation (Demand –pull theory of inflation, cost push inflation ,wage push inflation ,profit push inflation, supply –push inflation) 5)Rational Expectations Theory of inflation.

2.1.6 Classical Theory of Inflation

The term "classical theory of inflation" represents the views of classical economists such as Jean Bodin, Richard Cantillon, John Locke, David Hume, Adam Smith, and William Petty. This theory focuses on the idea of a consistent increase in the overall price levels. It was Irving Fisher, a notable classical economist, who, through the development of the quantity theory of money, provided the initial systematic explanation of inflation, known as the "*classical theory of inflation*." According to the theory

$$MV=PT\dots (1)$$

Where M= money supply

V= velocity of money

P= general price level

And T= real volume of transactions

2.1.7 Neo- Classical Theory of Inflation

The neo –classical theory of inflation was developed by the Cambridge economists, also known as neo- classical economist .The Cambridge ‘school postulates increasing in demand for money as the cause of inflation. The Cambridge version of quantity theory of money is given as

$$MD=KPQ$$

Where MD= Demand for money

Q=real output

P=general price level

K= the constant proportional of total income.

2.1.8 Keynesian Theory of Inflation

Keynes' theory suggests that inflation happens when there's a boost in overall demand for goods and services. According to Keynes, this increase in demand can occur due to real factors like higher consumer demand driven by increased spending (MPC), increased investment demand due to improved investment prospects (MEI), and an uptick in government spending. Even when the volume of money remains constant,

such shifts may also occur. The term "inflationary gap" refers to the demand-supply gap from an. When the demand for goods and services grows larger while the supply stays the same, Keynes believed that if this demand outpaces what's available, it causes what he called an "inflationary gap" in the economy. This gap happens when there's more demand for things than there are things to buy, and it can lead to inflation.

As we recognize that

$$Y=C+I+G$$

Where,

Y=Aggregate supply or national output/income.

C=Consumption expenditure.

G=Government expenditures

2.1.9 Monetarist View of Inflation

The classical theory of inflation, mainly the one primarily based on Fisher's Quantity Theory of Money, is improved upon by the current monetarist perspective on inflation.

Thus, the term "Modern Fisherianism" is occasionally used to describe the modern monetarist like classical economists; present day monetarists agree with that the growth in the general level of price is solely attributable to the expansion of the money supply. The foremost monetarist and the one who first described inflation as an oversupply of commodities and offering is Friedman (1970). According to Friedman, "inflation is continually and in all places an economy a monetary phenomenon" and can only be caused by a rise in the amount of money that is issued more quickly than increased in production.

According to Friedman (1970) when the economy's money supply increases, an extra provided of actual money develops. Balances lead to an increase in the regularly occurring public's demand for products and services over the desire for money. Friedman and different modern extent theorists contend that an excess supply of real money balance increases ordinary demand for goods and services. A fact of demand

for products and services results from more money if there is not a commensurate rise in output. This contributes to price inflation.

2.1.10 Demand –pull Theory of Inflation

According to the demand-pull theory of inflation, a general increase in the price level occurs when aggregate demand grows significantly faster than aggregate supply. This is especially relevant when an economy is nearing full employment. When aggregate demand increases rapidly, the multiplier effect on this increase in demand is constrained by supply limitations. As a result, the only way to balance the goods market is by raising the prices of goods and services.

2.1.11 Cost – push Inflation

Cost-push inflation, sometimes referred to as monopoly inflation, arises from the dominant influence of various monopolistic entities or groups within a society. These influential groups can include labor unions, firms operating in monopolistic or oligopolistic market structures, and other powerful entities. Cost-push inflation is categorized based on the underlying factors originating from the supply side of the economy.

2.1.12 Rational Expectations Theory of Inflation

The Rational Expectations Theory posits that individuals behave in a rational manner in economic decision-making. According to this theory, economic agents are assumed to be rational actors who optimize their self-interest through forward-looking behavior. Consequently, the current economic actions of individuals are shaped by their rational expectations, which are influenced by various factors. In this framework, economic actors formulate their expectations by considering all available information, encompassing not only past data but also current and accessible knowledge. It is important to note that these rational expectations are includes what we've learned from the past, a sensible way of thinking, and having trustworthy numbers and details about economic matters independent of each other, implying that individuals do not coordinate their expectations with others. For instance, if the monetary authority announces a monetary stimulus, people under the Rational

Expectations Theory anticipate that prices will increase in advance. However, the theory posits that the central bank can only impact real production and employment if it can effectively implement a strategy for creating an abundant supply of money at a low cost.

From this viewpoint, when the amount of money circulating in the economy goes up along with a well-defined monetary policy, rational expectations suggest that prices and nominal incomes will rise, while real wage rates, real income, production, and employment will remain unaffected. In essence, the Rational Expectations Theory argues that monetary forces do not have a direct influence on real economic variables, including production. Consequently, it asserts that there exists a direct and proportionate relationship between the money supply and pricing.

2.1.13 Theoretical age between debt and inflation

The literature about how public debt and inflation are related has different viewpoints. The most widely accepted idea about inflation is that it's mainly about money, and the people who control the money have a big say in it. According to Friedman (1968), when the people in charge of money make policies that increase the amount of money in the short and long term, it pushes up both how much we produce and how high prices go. The idea from monetarists is that the folks in control of money have a lot of power over prices. They do this with active money policies and passive fiscal policies, all in a framework like what Ricardo talked about (Erdogud, 2002)

There are two different ideas about how monetary and fiscal policies affect price stability. The classical view, like the one from Ricardian, says that the demand for money and how it changes over time is what really decides how prices move. In this view, fiscal policy is passive, meaning that government bonds don't really add to people's wealth, and monetary policy works through interest rates to set prices. So, the Ricardian view thinks that money supply is what mainly determines prices in the long run (Attiya, Umaima, Abdul, 2008).

On the other hand, the Ricardian equivalence, as explained by Barro (1974, 1989), argues that based on the idea that money causes inflation, government debt doesn't have a big impact on how prices are determined. This suggests that government bonds don't really add to people's wealth. Barro (1974, 1989) argues that people feel like

they have less money because they know they'll have to pay taxes in the future, which means that when the government issues debt, it increases the overall risk in people's financial situation.

According to Leeper (1991) and Davig and Leeper (2007, 2011), when the government uses active monetary policies along with passive fiscal policies, it creates a Ricardian equilibrium. This means that how the government manages its debt doesn't have much to do with money. But if you have active monetary policies and passive fiscal policies, and the government adjusts taxes enough when it has debt, it leads to the outcomes that monetarists talk about, where inflation is always because of money (Erdogdu, 2002).

Erdogdu (2002) also says that the connection between how much the governments owes and the price situation can either be Ricardian or non-Ricardian, depending on whether the government can stick to its budget. If it's Ricardian, it means the government's budget always works out, no matter what prices are doing, and that's because the government can change its monetary and fiscal policies based on what's happening. In Ricardian situations, fiscal policy doesn't really affect people's wealth.

For non-Ricardian situations, it means that the government's budget doesn't always work out, especially if prices are doing crazy things. But before prices get settled, the government figures out its surplus or deficit, and any problems with the budget get sorted out because prices change due to market forces. Contrary to what the monetarists believe, who think that only money stuff affects inflation, in a situation that's not Ricardian and has active monetary and fiscal policies, the price level depends on fiscal policy things. In this non-Ricardian view, when the government's bond values go up, it changes how much people can spend, and disturbances in fiscal matters affect the price level because they make people want to buy more or less stuff (Woodford, 1998; Erdogdu, 2002).

The idea of Ricardian policies, where government debt doesn't really mess with the budget, has been questioned in developing countries and, for a long time, in developed countries too. That's why the top banks in these places have been doing more than just traditional anti-inflation stuff. They've been using a mix of money and

fiscal policies to try to keep prices stable (Loyo, 1999; Christiano Fitzgerald, 2000; Attiya et al., 2008).

Bhattarai *et al.* (2014) created a theory to explain how public debt can affect inflation, and they looked at three different ways it can happen.

The first one is what we call a "monetary dominant" system. In this system, the people who control money (the monetary authorities) are very active, and the government's fiscal policies are pretty passive. When prices go up, the interest rates go up, and the government collects more taxes because of the debt. In this setup, inflation closely follows the target set by the government, and the stronger the reaction of the people controlling money to changes in prices, the closer inflation stays to the target. The amount of government debt and how the government spends money don't really affect inflation here.

The second system is the opposite, known as "fiscal dominant" or "non-Ricardian." Here, the people who control money are less active, and the government's fiscal policies are more active. When prices go up, interest rates don't go up much, and the government doesn't collect a lot more taxes because of the debt. In this system, inflation and the government's target for inflation can move in different directions. The bigger the difference between the target and actual inflation, the more pronounced it becomes if the government takes strong actions in response to price changes. Also, the level of government debt affects inflation: more debt makes inflation go up, while more active fiscal policies make inflation less responsive to events that aren't related to government policy.

In the third or last regimes is a passive (fiscal and monetary) policy, where reaction of interest rates is low level to inflation is associated closely with higher responses of tax to public debt and which leads to equilibrium indeterminacy. In that study, both monetary and fiscal policy stances have effect of inflation. It results show public debt doesn't matter inflation.

According to Nastański and Strohe (2015), the connection between debt and inflation can either be direct or circular. It is direct when the central bank buys government bond. On the other hand, it is circular when the demands for government bond increase due to expectations of higher inflation caused by a lot of government debt.

Kwon, Farlane and Robinson (2006) showed that there are two main ways this happens.

One way is through the wealth effect of government debt, this is a new way to think about how government spending affects inflation. It's kind of like predicting what would happen if the government decided to spend a lot of money and borrow it instead of taxing people. This does not tell us for sure whether the connection between public debt and inflation comes from the government printing more money (monetization) or from the effect of having a lot of government debt. So, this study is looking at research that has actually tested how government debt affects inflation to get a better idea of what's really going on.

2.1.14 Recent Thinking

Contemporary scholars have expressed concerns about excessive borrowing's potential negative impact on the economy, highlighting two primary reasons for their apprehension. Firstly, a rapid increase in the debt-to-GDP ratio can lead to crowding out private investment, as it competes for available funds in the financial market (Ponser, 1992). Secondly, they argue that government expenditures funded through borrowing may not always yield productive outcomes, especially when servicing the debt places a substantial burden on tax revenues. However, it's important to note that not all public debt is considered burdensome. If the debt's servicing does not solely depend on tax revenue, it can be seen as productive because it generates resources for debt servicing while also contributing to income, employment, and overall economic output. In the context of underdeveloped nations, public debt often serves as a fiscal tool to stimulate effective demand, ultimately fostering accelerated economic development. Additionally, it acts as an effective tool for managing inflation that may arise during the growth process, ensuring that growth occurs within a stable economic environment. Public debt can also function as a stabilizing force, helping to control the fluctuations of business cycles. During periods of economic downturns when aggregate demand is insufficient to drive increased production and employment, compensatory fiscal policy suggests increasing public expenditures and public works projects. This can be achieved by mobilizing idle savings held by the public through public borrowing, thereby creating effective demand and facilitating economic recovery.

IMF (2006) introduced a new collection of information about government debt in 19 emerging market countries, such as Brazil, China, Malaysia, Korea, and Thailand, starting from 1980. This data primarily looks at how debt is set up, including factors like where it's from, when it's due, what currency it's in, and what it's made of, and how it's indexed. They also share some general observations about how these debts are structured and offer initial evidence about what influences these structures

2.2 Empirical Review

In the realm of public debt research, economists from around the world have tackled important questions regarding how public debt affects inflation. They provide arguments about how government borrowing can impact the inflation rate. To support their claims, they've examined both direct and indirect connections between public debt and inflation. To uncover these insights, researchers have employed various statistical methods and models, including Panel Vector Auto Regression (PAVAR), Vector Auto-Regression (VAR), and analysis of annual time series data, Co-integration analysis, Granger causality testing, Ordinary Least Square Regression (OLS), Vector Error Correction Model (VECM), and Autoregressive Distributed Lag (ARDL) modeling. The connection between public debt and inflation has been a subject of study for numerous countries by various researchers who employed diverse estimation methods. One of the landmark empirical studies on the influence of government debt on the inflationary process was conducted by Leeper (1991).

Presently, research outcomes regarding the association between public debt and inflation are diverse, encompassing both advanced and developing countries. Numerous scholars have extensively examined this relationship using a variety of estimation methods

2.2.1 International Context

Taghavi (2000) conducted a study to see how public debt affects investment, inflation, and growth in major European countries from 1970 to 1997. They used special models (hybrid co-integrating and vector auto regressive models) to analyze the data. The study found that public debt has a notable negative impact on investment, meaning it tends to discourage investment. However, the effects on economic growth

are not straightforward and vary. Additionally, the research showed that while debt can lead to inflation over the long term, its short-term impact on inflation is uncertain

Mallik and Chowdhury (2001) did research to learn about how inflation and the growth of the economy are connected in South Asian countries like Bangladesh, India, Pakistan, and Sri Lanka. They gathered information from the International Monetary Fund (IMF) about these countries every year. They used some statistical methods (co-integration and error correlation models) to analyze the data and found two important things. First, they discovered that in all four countries, when inflation goes up, the economy tends to grow in the long term. This means that inflation and economic growth are linked in a positive way. Second, they found that when the economy grows faster, it doesn't make inflation increase as much as when inflation goes up, it doesn't make the economy grow as much. In simple terms, they said that moderate inflation can actually be good for economic growth, but if the economy grows really fast, it can cause more inflation

Kwon *et al.* (2006) support the idea proposed by Sergeant and Wallace (1981) that when public debt increases in heavily indebted countries, it usually leads to inflation. They used a statistical method called OLS (Ordinary Least Square) regression and VAR models to empirically study this connection between public debt and inflation. They did this by analyzing data from 71 countries spanning from 1963 to 2004. Their findings indicate that this link remains robust in heavily indebted developing countries, is less pronounced in other developing countries, but is generally not significant in developed countries. However, the relationship is affected by rigid exchange rate systems. Additionally, the study highlights the importance of institutional and structural factors in understanding the link between government fiscal policy and inflation.

Silva *et al.* (2007) examined the relationship between exchange rate and public debt is mediated by two mechanisms. On the other hand, exchange rate depreciation increase local currency payments compared to foreign currency denominated debt. On the other hand, an increase in public debt leads to a perception of increased risk of default, leading to capital outflows and exchange rate depreciation. This paper develops a simple model based on the idea of functional finance in which exchange rates are relatively higher interest rate means that small changes can leads to

unsustainable debt trend, particularly when a small devaluation of the local currency can significantly reduce national debt denominated in the local currency. It was pointed out that this could lead to an increase in amount of debt and default on the debt leading to a currency crisis and ultimately a default.

Kwon *et al.* (2009) looked at how public debt and inflation are connected. They used data from 1963 to 2004 for 71 countries, some developed and some developing. They used some mathematical techniques to analyze this. What they found was that in developing countries with a lot of debt, there's a strong positive connection with inflation. In other developing countries, this link is weaker. But in developed countries, there doesn't seem to be a consistent connection between public debt and inflation.

Barry *et al.* (2009) examined a large detailed sample of public debt. Rule 144A issues and bank loans over the period 1970 to 2006, this paper investigated that the relationship between change in interest rate causes of floating and fixed-rate debt issuance. Specifically, this article finds that investigate change in interest rate changes after a corporate debt issuance and it's find that managers are not successful in issuing debt and locking in fixed interest rate in anticipation of increased future interest rate in issuing high levels of floating debt prior to debt decreases. The result of this paper suggested that evidence of temporal success is dependent on the time interval examined and the types of debt.

Moore and Thomas (2010) investigated whether debt can be used to finance growth or not. The paper utilized meta-analysis approach to address the issue. This approach allowed researchers to combine the results from published and unpublished research to gain insights regarding the directional and statistical significance of the relationship between two variables. The paper concluded that there exist a positive relationship between debt and economic growth. The study suggested that future research should be conscious of the effect model specification can have on the results on their studies. Indeed, when external debt, the fiscal balance, debt relief were included in the econometric specification the relationship between debt and growth was weakened.

Reinhart and Rogff (2010) conducted a comprehensive analysis of the systemic connection between elevated levels of public debt, economic growth, and inflation.

They examined a sample of 20 advanced economies and 24 emerging market economies over the period spanning from 1946 to 2009.

Regarding the relationship between public debt and inflation in their study, the results indicated that there is no consistent link between high levels of public debt and inflation in advanced economies. Conversely, the findings for emerging market economies suggested that a high level of public debt is associated with higher inflation rates

Cecchetti *et al.* (2011) addressed the issue of, when the debt changes from good to bad status. They examined this question using a new dataset that includes the level of government, non-financial corporate debt and household debt for 18 OECD countries from 1980 to 2010. This results supports the view that, slows when debt exceeds a certain level, .As for the nation debt, the standard is about 85 percent of GDP. The paper concluded that developed countries with high debt level need to take swift and decisive action to address their pressing fiscal problems. The longer they wait, the grater the negative impact on growth, and the more difficult it is to adapt.

Harmon (2012) looked at how public debt affects three important economic measures: inflation, GDP growth, and interest rates in Kenya from 1996 to 2011. Using simple research methods and basic linear regression models, this study discovered that there is a slight positive connection between public debt and inflation. However, the links between public debt and GDP growth, as well as public debt and interest rates, are negative

Ahmad *et al.* (2012) did a study to figure out how the debt inside Pakistan affects the prices of things (inflation) from 1972 to 2009. They used a method called "ordinary least square estimations" to do this. They found that the debt within Pakistan and the money used to pay off that debt (which is called "domestic debt servicing") both make prices go up (inflation) by a significant amount. In Pakistan, most of the debt is in the form of short-term securities called treasury bills, and they have high-interest rates. When these bills pay out, it brings in a lot of money into the economy and makes prices go up. In simple terms, this study shows that the debt Pakistan has inside the country has a big impact on making prices go up (inflation), especially when it's time to pay off that debt

Baum *et al.* (2013) looked into how the amount of money the government owes (public debt) affects how well the economy grows. They focused on 12 European countries from 1990 to 2010 and used a special method to figure out the impact of debt on economic growth. Their findings show that when the amount of debt compared to the size of the economy (public debt to GDP ratio) is not too high, having more debt can actually help the economy grow in the short run. This is a good thing and statistically very important. But, when the debt becomes really high and reaches about 67% of the GDP, its positive impact on growth starts to disappear. This means that having a lot of debt isn't as helpful when it's too high. It's like having too much of a good thing. On the other hand, if a country already has low levels of debt and tries to reduce it even more, it can actually hurt the economy in the short term. So, reducing debt when it's already low can have a negative impact on economic growth

Umaru *et al.* (2013) studied how the money Nigeria owes to other countries (external debt) and the money it borrows within Nigeria (domestic debt) affect the country's economic growth from 1970 to 2010. They used a method called "Ordinary Least Square" to see how these things are connected. They also used some tests to check if their data was reliable. Their findings showed that when Nigeria borrows money from outside (external debt), it tends to slow down economic growth. But when Nigeria borrows money from within the country (domestic debt), it actually helps the economy grow (GDP goes up). So, the study suggests that if Nigeria manages its domestic debt well, it can be better for economic growth compared to relying too much on external debt. They also recommend that the government should make policies that encourage people to save money within Nigeria and invest it in the country. This can lead to more economic growth

Matiti (2013) investigated to establish the relationship between public debt and economic growth in Kenya. In this study used secondary data from various sources of Kenya National Bureau of Statistics and the Central Bank of Kenya. The study period covered the accounting period from 2002/2003 to 2011/2012 financial periods. Data were collected using data collection sheets which compiled coded and cleaned during the period 1992/1993 to 2011/2012. In this study a regression analysis was conducted to the relationship between public debt and economic development. The document develop a framework for government to record and monitor all contingent liabilities

and also formulate and implement a policy for management of the contingent liabilities as well as develop and implement contingents' liabilities management policy promote investment in government bonds, and attract institutional investors such as pension. It recommended that broad base reform need to continue to be implemented funds and insurance companies invest in government bonds.

Apere (2014) study the impact of public debt on private investment in Nigeria from 1981 to 2012. The study showed that domestic debt has a positive impact on the GDP ratio while private consumption expenditure has a negative impact on the GDP ratio, and external debt has U-shape impact on GDP ratio. The paper concluded that the impact of external debt on private investment in Nigeria will always be negative unless external debt to GDP reaches a threshold sufficient to make meaningful investment. The study recommended that Nigeria's external borrowing resources are sufficiently large compare to GDP and should be invested in high productive business that will benefit the government.

Ngerebo (2014) looked at how Nigeria's borrowing within the country impacts inflation. They used a technique called OLS estimation over the years from 1970 to 2010. What they found was that when you look at all the domestic debt, it has a positive and significant connection with inflation in the short term, but a negative connection in the long term. When they separated the domestic debt into short-term and long-term parts, they found that the relationship with inflation is positive for short-term debt and negative for long-term debt. Another study by C. B. Ezirim, Amuzie, A.E., and K. Mojekwu (2014) also found evidence of a significant positive connection between the total amount of public debt and inflation in Nigeria in the short run. However, they confirmed that in the long run, there is a significant negative relationship between a country's total public debt and inflation.

Hilscher and Reis (2014), they investigated how public debt influences inflation. They used an "ex-ante" research approach. To do this, they focused on the United States in 2012 and estimated how increased inflation might affect the fiscal burden. Their findings suggested that a decade of economic restraint, coupled with higher inflation, could potentially reduce nearly one half of the debt

Nastansky *et al.* (2014) looked into how the government owing money (National debt) and the rise in prices of things (inflation) affect each other, like a sort of back-and-forth influence. They found that when a country has a lot of debt, it can make prices go up by increasing the amount of money in circulation and raising long-term interest rates. When there's more money circulating, and the government is spending more than it's earning (public deficits), it can push prices higher, leading to inflation. The way this relationship works depends on a few things like how the country's banking system works and how independent the central bank is. If the central bank is not very independent, it's more likely that a country's debt will cause inflation to go up. In this study, they looked at different factors like public debt, the cost of things (consumer price index), the amount of money in circulation (money supply or M_3), and long-term interest rates. They used a special mathematical model to figure out how these things are connected, called the vector error correction model, using the Johansen approach

Lopes *et al.* (2014) studied how public debt affects economic growth and inflation in 52 African countries from 1950 to 2012. They used historical data covering this time period. Their findings indicated that public debt has a positive impact on inflation. In simpler terms, having a high national debt tends to be associated with higher inflation rates

Nguyen (2015) uses money supply, real GDP Per capita, private investment, budget revenues, government investment, current government expenditures, and trade openness in 15 developing Asian countries since 1990 to 2012 as control variables. We investigate the impact of public debt on inflation. The authors employed pooled mean group estimates and panel differential GMM Brummell-Bond regression techniques to examine the link between government debt and inflation. The results they obtained reveal that in their studies of Asian economies, public debt, economic growth, broad money supply, public investment, and trade openness all make significant contributions to inflation. This suggests a positive relationship between these variables

Martin (2015) provides a theoretical analysis of central bank independence from the perspective of debt and inflation. According to the author, the reform will benefit society and lower inflation initially, but not permanently. A more independent central

bank implementing policy would force the treasury to trade a larger output deficit for a smaller futures deficit. As a result, increased government debt will lead to higher inflation in the long run the writer proposes that having a strict inflation target could consistently lower inflation and stop the primary deficit from growing because of policy problems.

Lo`pes Da Veiga *et al.* (2016), they mention that how much government debt and inflation are linked depends on how much debt there is. They found that when government debt is high, it tends to lead to higher inflation. This means that in a group of 52 African countries studied from 1950 to 2012, having a lot of public debt in these countries is connected to having higher inflation rates. These findings emphasize that the different levels of public debt and their connection to inflation are really important to understand

Ogawa *et al.* (2016) looked into how public debt, which is the money the government owes, affects the economy's growth compared to the size of the economy (GDP) in 31 countries in Europe and other developed countries from 1995 to 2013. In their study, they used a special method called a "panel VAR model" to see how changes in the amount of government debt relative to the size of the economy and economic growth are connected. They also looked at how the interest rates on government bonds that last a long time (long-term real interest rates) can make these changes happen. They found that there's a connection between how fast the economy grows (GDP growth rate) and the amount of government debt compared to the size of the economy (public debt to GDP ratio). In countries with a lot of debt, when the economy grows slower, it can make the government debt even worse because the interest rates on those debts can go up. This, in turn, makes it even harder to pay off the debt compared to the size of the economy (public debt to GDP ratio). The result also showed that the interest rates that last a long time are really important in how economic growth affects government debt in countries with a lot of debt. The study recommends looking into why some countries can have high government debt but still have low long-term interest rates, while others with the same situation have really high long-term interest rates.

Romero and Martin (2017) find a positive relationship between public debt and inflation. Using data from 1961 to 2015, for 52 countries, in this study finds, that the

countries where public debt was already high did. These countries have an inflationary effect during the study period.

Akitobyet *al.* (2017) using a series of regression he investigated how inflation impact the debt –to-GDP ratio in the G7 group of seven countries and found that in the case of developed countries, high inflation rate help reduce public debt ratio concluded .However, a sustained high inflation rate cannot solve the higher level of debt accumulations, as high inflation has negatives effect on the country, such as a decline in economic growth and household income.

Akhanoluet *al.* (2018) looked closely at the debt that the Nigerian government owes and how it affects the country's economic growth from 1982 to 2017. They used a method called "two-stage least squares regression" to figure this out. In the first part of their study, they looked at both the money the government owes within Nigeria (domestic debt) and the money it owes to other countries (external debt), along with how these debts changed over time. They wanted to see how these debts relate to how well the Nigerian economy is doing (GDP). They found that when Nigeria owes money to other countries (external debt), it tends to hurt the economy, making it worse. But when Nigeria borrows money within the country (domestic debt), it actually helps the economy grow.

In the second part of their study, they looked at things like how much money people save in banks in Nigeria, and how much the government spends on things like building infrastructure (capital expenditure). They wanted to see how all of these things relate to the money the government owes within Nigeria (domestic debt). They found that all of these factors had a strong connection with domestic debt.

The study recommends that the government should really work on stopping corruption when they borrow money and try to borrow less from other countries (external borrowing), as it can have a negative impact on the economy

Ramos and Sosvilla (2019) empirically study the relationship between economic growth and public debt based on a dataset of 115 countries for the period 1970-2013. Using the World Bank's classification of income groups, this paper showed that countries with the lowest public debt are characterized by the highest economic

growth, and countries with the lowest growth rates have the highest public debt. The paper argues that the result using the IMF's country classification do not suggest a clear pattern in the relationship between countries' public debt and economic growth, but rather a heterogeneous relationship between key macroeconomic variables.

Al-Attaret *et al.* (2019) wanted to understand how interest rates that really matter to people (effective interest rates) relate to the prices of things we buy (CPI rate). To do this, they looked at the changes in the Consumer Price Index (CPI) from 2010 to 2018 to figure out the inflation rate. They used a method called Pearson Correlation to see how the CPI rate and the effective interest rate are connected during the same time. What they found was that there is a negative relationship between the CPI rate and the effective interest rates. In simpler terms, when one goes up, the other tends to go down, and vice versa

Aimola and Odhiambo (2021) conducted a study to understand how the money the government owes (public debt) affects the rise in prices of goods and services (inflation) in Ghana. They used yearly data from 1983 to 2018 for this research. They applied statistical methods like "autoregressive distributed lag bound," "co-integrating approaches," and an "error correction model" to analyze the data, even though they found some issues with the data itself. What they discovered shows that in Ghana, when it comes to public debt and inflation, there's a connection that goes up, whether you're looking at the short term or the long term. In simpler terms, when the government has more debt, it tends to lead to higher inflation rates in Ghana, not just for a short period but also for a long time.

2.2.2 Nepalese Context

RA *et al.* (2005) and their research team embarked on a scholarly investigation centered on the intricacies of debt management within the Nepali economy. They adopted the analytical framework previously explored in Hahm and Kim's 2003 study. The primary objective of their research was to delve into the intricacies of debt management specific to the Nepalese context.

The paper undertook a meticulous examination of external debt and made a noteworthy observation. It found that a higher proportion of foreign currency, as

opposed to Nepalese rupees, was required to achieve lower average exchange rate fluctuations and reduce the degree of variability. The study introduced an analytical approach for identifying comparable government debt portfolios, which could be readily applied to numerous countries.

Through simulations, this paper offered insights into the future of Nepal's economy. It suggested that Nepal would need to enhance its domestic borrowing capabilities, particularly for longer time periods. Additionally, streamlining the maturity structure of national bonds was deemed necessary. The simulations also underscored the importance of developing an optimal currency mix for Nepal's external debt, emphasizing the need for more comprehensive data to facilitate future analyses of debt management within the Nepali context.

Bhusal and Shilpakar (2011) did a study to see how inflation affects the growth of Nepal. They looked at data from 1975 to 2010 and found that when inflation goes up, the economy grows too. They also found that when inflation is more than 6 percent, it can start to have negative effect on the economy.

Adhikari (2014) conducted a comprehensive academic study aimed at determining whether inflation negatively affects economic growth in Nepal. The research employed Distributed Lag Models, utilizing annual data from 1975 to 2012, with a focus on the relationship between Real Gross Domestic Product (RGDP) and the Consumer Price Index (CPI). The findings of this investigation were rather nuanced. It was revealed that inflation tends to have an adverse impact on economic growth only when it reaches levels considered as "galloping inflation." The results indicated a somewhat mixed influence of inflation on economic growth. Specifically, when inflation is on the rise in the current period, economic agents may struggle to adapt quickly to the high inflation environment, leading to negative effects on economic growth. Conversely, if inflation was high in the previous period, economic agents had more time to adjust and moderate inflation over the course of a year. Consequently, the impact of inflation on the economic growth of Nepal was found to be complex and dependent on its specific characteristics.

Pandey (2018) conducted a rigorous examination of the relationship between microeconomic variables and inflation within the context of Nepal. This investigation

relied on the Ordinary Least Squares (OLS) regression method, utilizing time series data spanning from 1975 to 2017. The core assumption of this study was that inflation served as the dependent variable, while money supply, how much the government was spending at the time, the country's total economic output (GDP), and the interest rate as the factors that could work independently.

The outcomes of the study revealed significant insights. Specifically, it was observed that both money supply and current government expenditure had a tendency to spur inflation, while the gross domestic product exhibited a dampening effect on the inflation rate. Consequently, the study proposed a noteworthy recommendation, emphasizing the importance of enhancing productivity, particularly within the agricultural sector, as an effective means to mitigate inflationary pressures.

Acharya (2019) conducted a scholarly investigation to explore the connection between the broader money supply (M1 and M2) and inflation. This research incorporated various independent variables includes things like money supply (M1 and M2), Gross Domestic Product (GDP), government spending, and the Consumer Price Index (CPI) of India, and the Inflation rate. The primary dependent variable under consideration was the CPI .The study employed the Durbin-Watson (D-W) test and multiple regression models to demonstrate that an increase in the money supply (specifically M2) is positively associated with inflation. To be precise, a 1% rise in the money supply corresponds to an average inflation increase of 1.7%, assuming all other factors remain constant. This research unequivocally establishes a direct and positive relationship between money supply and inflation.

Dahal (2020) conducted a study to understand how the amount of money the government owes (government debt) affects the amount of money each worker produces in Nepal (GDP per worker). They used data from 1975 to 2019 and considered factors like investments in fixed assets (GFCF) and education-related human capital in a framework called Cobb-Douglas production function. They used a method called ADRL to test for connections between these factors.

Surprisingly, the results showed that when the government owed more money, it didn't slow down economic growth; in fact, it had a positive impact on the amount of money each worker produced. The study concludes that borrowing money could be a

good option for the government to fund its development projects and boost the economy. However, this strategy should continue until the government can effectively manage and pay off both its domestic and foreign debts.

Byanjankar's study (2020), the researcher explored the connection between money supply and inflation. They gathered time series data spanning from 1975 to 2018 for their research. In this study, the researcher considered the Consumer Price Index (CPI) as the dependent variable and used money supply, Indian CPI, government deficit, crude oil prices, real Gross Domestic Product (RGDP), and nominal effective exchange rates as independent variables.

To investigate the relationship between money supply and inflation, the study employed ARDL models as its analytical technique. The results of the study revealed that there is an insignificant relationship between money supply and inflation, both in the short run and the long run. Instead, the primary determinants of inflation in Nepal in the long run were found to be Indian interest rates, real income, and exchange rates.

2.3 Research Gap

The lack of resources in Nepal's economy has always been a common problem since they started planning their budget. Many studies have looked at how the government manages its debt, the trends in debt, and how it affects Nepal's economy. They've also studied how the government's debt affects the country's GDP and how borrowing money within Nepal impacts interest rates. However, the sources of this debt, what it's made up of, and how it affects inflation can change over time. So, the research done earlier might not fully capture how these things change over time. Because of this, the previous studies might not be very helpful in understanding where the debt comes from, what it's made of, and how it affects inflation.

In this new study, we've tried to analyze where the government's debt comes from, what it's made of, and how it affects inflation using the most recent data and information available

CHAPTER - III

RESEARCH METHODOLOGY

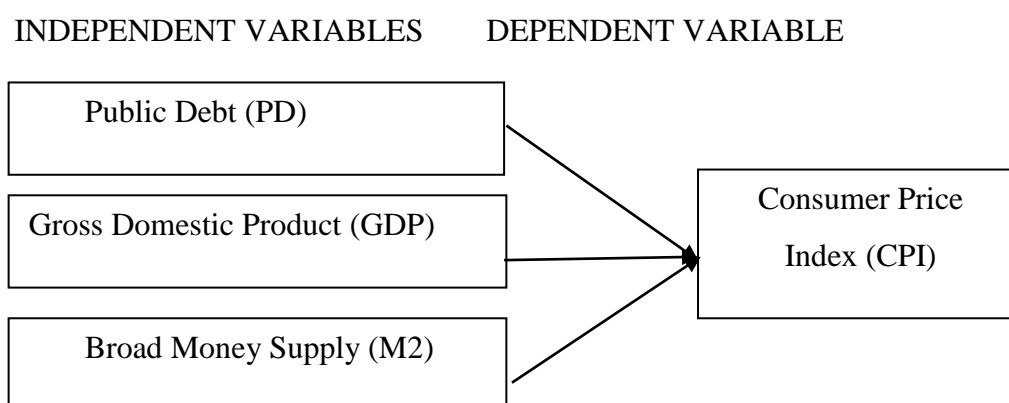
Research is rooted in factual information and is a deliberate effort to gain a profound understanding of a problem. It involves a structured and analytical approach aimed at uncovering fresh insights. Research, in essence, is about forging new knowledge that leads to the development of novel ideas, methods, and perspectives.

Research methodology, on the other hand, pertains to the precise techniques and procedures employed to discern, choose, handle, and scrutinize information related to a specific subject matter. Within a research project, the methodology section serves as a lens through which readers can rigorously assess the overall reliability and credibility of the study. This chapter is dedicated to delineating the methodological strategies embraced in the research endeavor in this academic study, we have established two primary objectives. The first objective aims to comprehensively analyze the source and composition of these objectives. We accomplish this by employing tables and graphs to facilitate the analysis process. The second objective involves a detailed analysis using basic statistical methods, such as correlation and multiple regression analysis. This approach allows us to utilize the results obtained from the second objective to further our understanding of the subject matter.

3.1 Conceptual Framework

The conceptual framework illustrates how different factors are connected in our study. In this research, we use the Consumer Price Index (CPI) as the dependent variable to understand Nepal's inflation trends and its relationship with public debt, which acts as a proxy for inflation. The independent variables include broad money supply, gross domestic product (GDP), and public debt. Public debt is a financial instrument of financing the gap between government revenue and expenditure. It refers to the loans incurred by the government to finance its activities when other sources of public income are inadequate or fail to meet the requirements. Borrowing is a healthy option for creating for government to finance development projects to boost the economic growth for this there should be proper utilization on the productive sectors which will save the country from debt trap. Developing country like Nepal needs huge government fund for economic development it can further use

the domestic loan for government budget deficit financing whereas the increasing habit of borrowing is causing issues in managing debt and has become a challenging problem for the country. The impact on inflation can be understood through several channels (Monetary Expansion, Interest Rate Effects, Crowding out Effect, Expectations, Currency depreciation) etc. , public debt can affect inflation in these way, People's expectations about the government's debt also play a part in this.



3.2 Research Design

The study's research design combines elements of both descriptive and analytical research. It relies on secondary sources of data and information. The overarching goal of the study is to evaluate how public debt influences inflation. Time-series data for the chosen variables were employed to scrutinize the sources and composition of the government of Nepal's public debt.

To quantify the impact of independent variables on the dependent variable, a deductive approach was applied. The primary tools and methods of data analysis employed in the study encompass a range of techniques, including the use of tables, graphs, percentages, correlation analysis, and multiple regression analysis.

3.3 Characteristic and Data Origins

This study relies on secondary data sources, specifically using annual time series data spanning from F.Y (1990/91 to 2021/22). The necessary data and information were gathered from various publications of Nepal Rasta Bank (NRB), which served as the primary source

3.4 Timeframes of the study

The study encompasses a dataset spanning 31 years, ranging from fiscal year 1990/91 to 2021/22. This period was selected due to its alignment with the post-democracy era, during which there was a noticeable upward trend in public debt borrowing in Nepal. This specific timeframe was chosen to ensure consistency in data availability for all relevant variables.

Furthermore, the extended duration of data coverage lends credibility and validity to the results and analyses derived from the statistical model. It provides a substantial dataset necessary for establishing long-term relationships between variables and facilitates the application of various econometric tools in the study.

3.5 Tools and Method of Data Collection

The study utilized original sources of data. It relied on secondary data collected from Fiscal Year (F.Y.) 1990/91 to 2021/22 to investigate the long-term relationship between public debt and inflation. The decision not to include data before 1989/90 was deliberate, as the study focused exclusively on the period following Nepal's democratic transformation. This timeframe allowed for a comprehensive examination of the trends in public debt and its impact on inflation within the context of Nepal's post-democracy process.

3.6 Data Organizing and Processing

The collected data and information were systematically classified, tabulated, organized and processed in such a way that could provide the answers of given research questions, justify the objectives, and help for testing hypothesis. Organized data were then processed as per the given objectives and hypothesis of the study in such a manner that they can be easily proceeded to analyze. The collected raw data were calculated by using computer software 'Microsoft Excel' and Eviews-12 SV version.

3.7 Tools and Method of Data Analysis

The major tools and method of data analysis of the study are various tables, graphs, percentage, correlation analysis, multiple regression analysis, coefficient of

determinants (R^2), adjusted coefficient of determinants (adj - R^2), t-test, F-test, test etc. All collected data is analyzed using Eviews-12 SV. The Microsoft Excel is also used for drawing the figures.

3.8 Model Specification

The study is going to use the multiple regressions in which Consumer Price Index (CPI) is the dependent variable and Public debt (PD), Gross Domestic Product (GDP) and Broad Money Supply (M2) are the independent variables. The functional Equation of the study is

$$CPI = f(PD, GDP, M2)$$

Modifying the functional equation into linear form i.e.

$$CPI = \alpha + \beta_1 PD + \beta_2 GDP + \beta_3 M2 + e_n$$

The log-log form of the model is,

$$\ln CPI = \beta_0 + \beta_1 \ln PD + \beta_2 \ln GDP + \beta_3 \ln M2 + e_n$$

Where,

CPI = Consumer Price Index

PD = public debt

GDP = Gross domestic product

M₂ = Broad Money Supply

β_1 = Regression Constant

$\beta_1 \dots 4$ = Regression Coefficients or parameters

e_n = is error term

All the variables, except CPI, are written in a special way using logarithms. This helps us see how much the independent variable affects the explanatory variables more clearly.

3.9 Specification of Variables

The study is having four variables in which one is dependent and three are the independent variables as given below.

3.9.1 Consumer Price Index (CPI)

CPI is a measure of the average change overtime in the prices paid by consumers for a market basket of consumer goods and services. It measures the inflation as experienced by consumers in day to day living expenses. Therefore, rising interest rate lead fewer consumers in the market i.e. increase interest rate leads lower CPI and vice versa. The Consumer Price Index shows how much it costs for an average person to buy a set of goods and services, which can stay the same or change over time.

3.9.2 Public Debt (PD)

Public debt refers to the amount collected by the government to full fill the deficit budget amount in fiscal policies. There is large number of sources for public debt, out of them internal and external are main sources. The public debt affects the general price level in an economy. Public debt is the total amount, including total liabilities borrowed by the government to meet its development budget. It also called the total amount of money that is owed to the public by the government to meet the development fund.

3.9.3 Gross Domestic Product (GDP)

Gross Domestic Product (GDP) represents the ultimate value of all goods and services generated within a country's geographical confines during specified time intervals, typically over the course of a year. It encompasses the total monetary worth or market value of all completed goods and services produced within a nation's borders within a specific timeframe. GDP is quantified using the following formula: $GDP = C + I + G + NX$.

3.9.4 Broad Money Supply (M_2)

Broad money supply, often denoted as M_2 , encompasses the total of currency held by individuals, demand deposits, and time deposits held by individuals with banking and financial institutions. In a nutshell, it can be expressed as $M_2 = \text{Currency (C)} + \text{Demand Deposits (DD)} + \text{Time Deposits (TD)}$.or $M_2 = M_1 + TD$. Broad money supply has the close link up with the interest rate. An increase in supply of money works both

through lowering interest rates and through putting more money in the hands of consumers, making them feel wealthier and thus stimulating spending. It is the first counter variable of the study.

3.10 Hypothesis Testing

Hypothesis testing is used to check how reliable the estimates of regression coefficients or the regression equation are in statistics. In this study, we'll perform specific tests to see if our hypotheses hold true. It's a useful method to check the accuracy of predictions. It produces a definite decision about which of the possibilities is correct based on data. These are two hypothesis involved in hypothesis testing i.e. Null Hypothesis (H_0) and Alternative Hypothesis (H_1). The study used two types of tests like t-test, F-test.

3.10.1 T-test

The t-test is used to determine if the observed sample regression coefficient is statistically significant. If the probability (Prob.) value of t-statistics is less than α level of significant (either 0.01 or 0.05 or 0.10), null hypothesis is rejected or alternative hypothesis is accepted.

3.10.2 F-test (Goodness of Fit)

F-test is used to examine the overall significance of the model. The formula for calculation is: The calculated F- values equals to 804.92 significant at 0.05 level due to p values <0.05 that is 0.000. This means regression line is fit between dependent and independent variables.

CHAPTER - IV

PRESENTATION AND ANALYSIS OF DATA

4.1 Sources and Composition of Public Debt

This chapter discusses data presentations and analysis, focusing on the structure and impact of public debt on inflation. It is a descriptive chapter divided into two sections, determined by the study's objectives. There are different sources of public debt. These sources can be broadly divided into internal and external sources. Internally government can borrow from individuals, financial institutions, and non-financial institutions. On the other hand externally it can borrow from foreign governments, international financial institutions and regional financial institutions. The composition of internal debt include various debt instruments treasury bill, development bond, national saving bond, citizen saving bond, special bond and employment saving bond whereas the composition of external debt are grants and loans.

4.1.1 Sources of Public Debt

Debt serves as a valuable resource for fostering economic development, particularly in underdeveloped nations. Achieving the goals of economic progress often necessitates substantial investments in essential socio-economic infrastructure such as healthcare, education, transportation, and communication. Public debt is widely acknowledged as a means of implementing deficit financing measures, which can help reduce trade imbalances, address resource gaps, and channel resources from unproductive sectors towards productive ones.

In the context of Nepal, the rationale for incurring public debt can be attributed to several key factors. Firstly, it has been a primary mechanism to balance the nation's budget, especially when faced with fiscal deficits. Secondly, it plays a pivotal role in funding economic development initiatives, addressing the perennial issue of fund scarcity that plagues underdeveloped countries and often manifests as a substantial gap in government budgets. Nepal's limited internal resources further underscore the necessity of accumulating a significant amount of debt to support economic growth. It is important to note that the debt proportion is typically tied to the nation's GDP, making it imperative to maintain internal debt within the confines of 2 percent of the GDP.

Nepal initiated its journey of foreign borrowing during the first-year plan (1956/57-1959/60). However, systematic accumulation of public debt began in fiscal year 1961/62 when the government issued treasury bills worth Rs. 7 million carrying a 1 percent interest rate. The framework for managing public debt was formalized with the introduction of the public debt regulation in fiscal year 1963/64, a practice that remains in effect to this day. Since then, the volume of external borrowing has witnessed a consistent rise, with public debt in Nepal being primarily derived from two main sources: internal and external debt.

4.1.1.1 Internal Debt

Internal debt refers to money borrowed from people and organizations within a country. When it's paid back, it doesn't create any new resources in the country; instead, it just moves resources around. Internal debt is money that a government owes to its own citizens, and it's a component of the country's overall national debt. This type of debt doesn't involve the government creating new money from scratch; instead, it borrows money. The money generated through internal debt usually takes the form of treasury securities or loans obtained from the central bank. Depending on how it's managed, internal debt can potentially impose a direct financial burden on the community, as it often involves the transfer of funds from taxpayers to public creditors

4.1.1.2 External Debt

External debt refers to funds borrowed from sources located outside of a country's borders. When a country incurs external debt, it must repay the borrowed amount in the same currency in which it was borrowed. Nations typically turn to foreign creditors to secure funding for various purposes, such as covering budget deficits, investing in infrastructure development, recovering from natural disasters, or even servicing previous external debt obligations. External debt can be obtained from foreign commercial banks, international financial organizations like the IMF, World Bank, ADB, as well as foreign governments.

Usually, these debts come as tied loans. This means they must be used for a specific purpose, which both the borrower and lender have agreed upon. Companies and governments generally do not prefer external debt, since they impose restrictions on the borrowing country and give the lender country some leverage over them.

However, certain circumstances compel countries to borrow money from outside when domestic commercial banks and financial institutions lack sufficient money to lend, when available domestic funds need to be utilized in other important areas, such as healthcare and education, and when international financial institutions and foreign governments offer lower interest rates and easier repayment schemes than the domestic debt market.

Analysis of the results

The dataset tables presented in this analysis offer a comprehensive understanding of Nepal's economic landscape spanning over three decades. These tables provide valuable insights into economic indicators, borrowing trends, inflation dynamics, and their intricate interactions. Table 1 shows debt composition, reflecting cycles of expansion and consolidation, often aligned with infrastructure investments, stimuli, or crises. Table 2 highlights internal debt breakdown, revealing shifting investment strategies and policy impacts. Table 3 depicts external debt sources, influenced by diplomatic relations and global financial conditions. Table 4 explores the complex relationship between public debt as a percentage of GDP and inflation, emphasizing multifaceted factors. Table 5 uncovers interplays among public debt, GDP, and money supply (M2), reflecting economic dynamics and pandemic effects. Table 6 dissects the growth rate of total debt and the growth rate of GDP. Table 7 illuminates relationships between total CPI and its composition with Food and Beverage and Non-food and services. These tables collectively unravel Nepal's economic evolution, requiring a comprehensive view of economic contexts, policies, and global influences for meaningful insights in policymaking and strategic decisions.

Source of Debt (Rs. in Million) and Portion of Debt out of Total Debt

This section highlights the composition of debt internal and external as well as their proportions relative to the total debt. The data illustrates the entity's borrowing behavior and its response to changing economic conditions. Fluctuations in total debt reveal cycles of expansion, consolidation, and potential economic shocks. Notable debt growth corresponds to infrastructure investment, stimulus measures, or crisis responses. The proportions of internal and external debt demonstrate the entity's reliance on domestic and international borrowing, influenced by economic policies and global factors.

Table 1

Source of Debt and Portion of Debt out of Total Debt (Rs. in Millions)

Fiscal year	Total debt	Internal Debt	External Debt	% Internal Debt	%External Debt
1990/91	10809.4	4552.7	6256.7	42.12	57.88
1991/92	8895.7	2078.8	6816.9	23.37	76.63
1992/93	8540.9	1620	6920.9	18.97	81.03
1993/94	10983.6	1820	9163.6	16.57	83.43
1994/95	9212.3	1900	7312.3	20.62	79.38
1995/96	11663.9	2200	9463.9	18.86	81.14
1996/97	12043.6	3000	9043.6	24.91	75.09
1997/98	14454.4	3400	11054.4	23.52	76.48
1998/99	16562.4	4710	11852.4	28.44	71.56
1999/00	17312.2	5500	11812.2	31.77	68.23
2000/01	19044	7000	12044	36.76	63.24
2001/02	15698.7	8000	7698.7	50.96	49.04
2002/03	13426.4	8880	4546.4	66.14	33.86
2003/04	13236.8	5607.8	7629	42.37	57.63
2004/05	18204.1	8938.1	9266	49.10	50.90
2005/06	20048.6	11834.2	8214.4	59.03	40.97
2006/07	27946.8	17892.3	10053.5	64.02	35.97
2007/08	29476.3	20496.4	8979.9	69.54	30.46
2008/09	28386	18417.1	9968.9	64.88	35.12
2009/10	41137.4	29914	11223.5	72.72	27.28
2010/11	54591.6	42515.8	12075.6	77.88	22.12
2011/12	47502	36418.7	11083	76.67	23.33
2012/13	31012	19043	11969.1	61.41	38.60
2013/14	37982	19983	17998.9	52.61	47.39
2014/15	68039	42423	25615.8	62.35	37.65
2015/16	121003	87775	33228	72.54	27.46
2016/17	147360	88338	59022	59.95	40.05
2017/18	236984	144751	92233	61.08	38.92
2018/19	220755	96382	124373	43.66	56.34
2019/20	1139796	440047	699749	38.61	61.39
2020/21	173763.7	80294.16	93469.53	46.21	53.79
2021/22	201329.6	98744.93	102584.7	49.05	50.95

Source: Nepal Rastra Bank 2022

The provided dataset spans from 1990/91 to 2021/22, offering insights into an unidentified entity's total debt, likely a country or organization. Analyzing the trends unveils an upward trajectory marked by acceleration, fluctuations, and intermittent declines. The cycles in debt growth indicate phases of expansion and slower growth, potentially influenced by economic conditions and fiscal policies. Remarkable spikes in debt growth during the mid-1990s, mid-2000s, and late 2010s hint at increased borrowing for infrastructure, stimuli, or crises. Instances of debt reduction and slower growth suggest fiscal management efforts or favorable economic conditions. Notably, the fiscal years 2019/20 and 2020/21 display significant debt surges, indicating possible policy shifts or economic shifts. The analysis underscores the necessity of considering data reliability, debt nature, and broader context when interpreting these trends. To grasp the driving forces fully, economic indicators, fiscal policies, external influences, and geopolitical dynamics must be weighed alongside the entity's borrowing decisions.

The dataset provided covers the years from 1990/91 to 2021/22, depicting the internal debt of the entity. Over this period, internal debt exhibited fluctuations with distinct patterns. Starting at 4552.7 in 1990/91, the debt saw variations until 2001/02, reaching 8000. A sharp rise ensued, peaking at 17892.3 in 2006/07, followed by further increases in subsequent years. Fiscal years 2015/16 and 2016/17 showed consistent figures of 87775 and 88338, respectively. Substantial growth occurred in 2017/18 (144751), followed by a decline to 96382 in 2018/19. Notable jumps were seen in 2019/20 (440047), followed by a decrease to 80294.16 in 2020/21 and an increase to 98744.93 in 2021/22. The data illustrates internal debt fluctuations influenced by economic conditions and fiscal policies, necessitating a deep analysis of underlying factors to accurately interpret the trends.

The provided data covers the years from 1990/91 to 2021/22, representing the external debt of the entity. Over this period, external debt exhibited fluctuations and notable trends. Starting at 6256.7 in 1990/91, the debt fluctuated until 2001/02 (7698.7). A sharp decline occurred until 2002/03 (4546.4), followed by further fluctuations until 2005/06. A rising trend led to 10053.5 in 2006/07. Variations continued, with spikes in 2013/14 (17998.9) and 2014/15 (25615.8). Substantial increases were seen in 2016/17 (59022), 2017/18 (92233), and 2018/19 (124373). A surge to 699749 occurred in 2019/20, followed by a decrease to 93469.53 in 2020/21

and an increase to 102584.7 in 2021/22. The data reflects external debt fluctuations influenced by economic conditions and borrowing decisions, warranting in-depth analysis to interpret the underlying drivers accurately.

The provided data spans from 1990/91 to 2021/22, representing the percentage of internal debt within the entity's total debt. Analysis reveals fluctuating patterns over time. Commencing at 42.12% in 1990/91, the internal debt percentage decreased significantly to 18.97% in 1992/93, and then gradually rose. Notable increases occurred in 2001/02 (50.96%), 2002/03 (66.14%), and 2005/06 (59.03%), indicating periods of higher reliance on internal borrowing. A peak of 77.88% was reached in 2010/11, possibly due to policy shifts or economic conditions. The percentage varied until 2015/16 (72.54%), followed by a decrease in 2018/19 (43.66%), suggesting shifts in borrowing strategies. The fiscal years 2019/20 (38.61%), 2020/21 (46.21%), and 2021/22 (49.05%) indicate increased reliance on internal sources, reflecting changing economic circumstances or policy priorities. The analysis underscores the need for comprehensive context to interpret these fluctuations accurately.

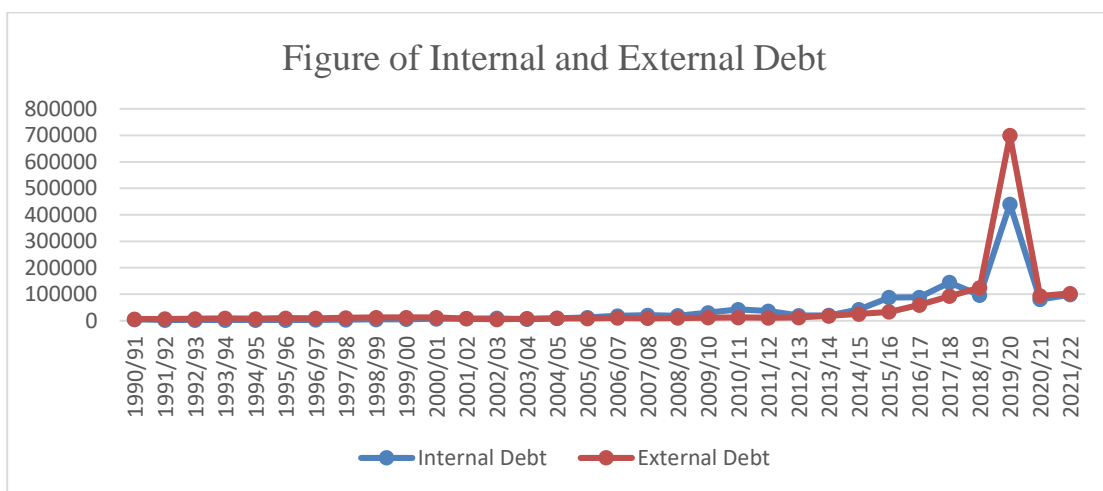
The provided data covers the years from 1990/91 to 2021/22, representing the percentage of external debt within the entity's total debt. An analysis reveals fluctuating patterns over time. Starting at 57.88% in 1990/91, the percentage increased notably to 81.03% in 1992/93 and further climbed to 83.43% in 1993/94. It then saw variations, including a peak of 83.43% in 1993/94. The trend changed in the late 1990s and early 2000s, with percentages decreasing gradually, reaching 33.86% in 2002/03. A notable spike occurred in 2003/04 (57.63%), followed by fluctuations. Subsequently, the percentage decreased steadily, dropping to 22.12% in 2010/11, reflecting reduced reliance on external borrowing. Thereafter, there were periods of increase and decrease, with the fiscal years 2019/20 (61.39%) and 2020/21 (53.79%) showing higher reliance on external sources. The data illustrates shifts in borrowing strategies and highlights the need to consider broader economic context to interpret these trends accurately.

In conclusion, Table 1 the dataset from 1990/91 to 2021/22 reveals an entity's total debt trends, marked by cycles of acceleration, fluctuations, and declines. Spikes in debt growth during the mid-1990s, mid-2000s, and late 2010s suggest borrowing for infrastructure, stimuli, or crises. Notably, fiscal years 2019/20 and 2020/21 show significant debt surges. Internal debt fluctuates, with spikes and declines, while

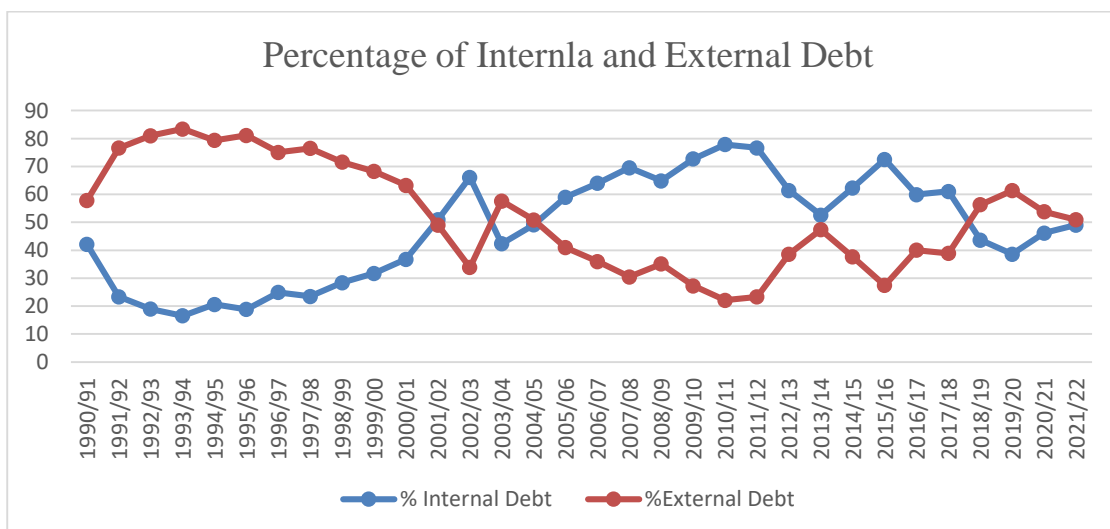
external debt displays notable increases, influenced by economic conditions. Percentage breakdowns show shifts in reliance on internal and external borrowing sources. Analyzing these trends underscores the importance of considering data reliability, context, economic indicators, and policy dynamics when interpreting borrowing behaviors and their driving factors.

Figure 1

Sources of Public Debt



Source: Nepal Rastra Bank 2022



Source: Nepal Rastra Bank 2022

4.1.2 Composition of Public Debt

Composition of public debt includes various instruments of debt from which the country borrows. Internally country Nepal borrows debt from instruments which are treasury bill, development bonds, national saving certificate, citizen saving certificates, special bonds whereas external debt are borrowed through instrument grants and loans.

4.1.2.1 Composition of Internal Debt

Internally government can borrow from individual, financial institutions, nonfinancial institutions. The government uses five types of domestic borrowing tools, which include treasury bills, development bonds, national savings certificates, citizen savings certificates, and special bonds. Internal borrowing has been happening since 1961.

Treasury Bills

Treasury bill is a short-term money market security issued by the public Debt Department of the NRB on behalf of the government of Nepal to fulfill its short term financial requirement. It has term to maturity ranging from 28 days to 364 days. It is one of the safest securities since it has zero default risk and

Is also the most marketable or tradable security in Nepalese market. The treasury bills are issued weekly or monthly especially 52 weeks treasury bills are issued twice a month. However, the most common type of Use of T-bill is 91 days, (182) days and (364) days T-bills. These are issued on a discounted basis. Hence, the return to the investor is the difference between maturity value and the issue price.

Commercial banks often buy treasury bills through competitive bidding. A minimum of 15 percent of the total amount available is set aside for non-competitive bidders, who must purchase the bills at the average discount rate. It's important to mention that commercial banks cannot compete against each other in this process.

Treasury bills are regularly issued on Tuesdays. About a week before issuing them, an announcement is published in a national newspaper. This notice includes 45 essential details, such as the series number, the amount available, whether the bills are taxable or not, the time they take to mature, the upfront payment needed, the date of issue, the time for bidding, and other relevant conditions.

Development Bonds

The issuance of these bonds in Nepal began in fiscal year 1963. They are designed to gather funds from individuals and institutions to support the nation's long-term development goals. These bonds are categorized as competitive and non-competitive, with at least 15 percent reserved for non-competitive bidders. Notices about these bonds are published in newspapers and posted on the NRB website, highlighting their unique features. The NRB is responsible for issuing these bonds on behalf of the government.

National Saving Certificates (Bond)

This is a government bond that lasts for 5 years. People and organizations outside of the banking sector, like individuals and companies, can buy it. If an organization buys it, they get it in the form of stock, and if an individual buys it, they get it as promissory notes. It comes with a fixed interest rate and can be transferred from one person to another.

Citizen Saving Certificates (Bond)

This is a type of long-term bond. Usually, it takes 5 years to fully mature, just like other long-term bonds such as development bonds and national saving certificates. However, you can't use it as collateral. If you need money right away, you can use national saving bonds and development bonds as collateral, but not this one citizen saving bond

Special Bond

These bonds are issued on special occasions and are designated for specific sectors by the government. Typically, they are issued when the government anticipates a shortage of funds in its account and would otherwise incur expenses like overdraft interest, commissions, cash outflows, or subsidies. These bonds are exclusively available for institutions, and those who hold them can use them as collateral.

Foreign Employment Saving Bond

The purpose of issuing these bonds is to inculcate savings culture among Nepalese working abroad and pool their resources for country's development. In return for buying these bonds, the government guarantees a fixed return which can be collected every six months till the time of the maturity of the securities. Also these securities carry zero risk because they are issued by the state and they can be used as collateral to obtain loans.

Composition of Internal Debt (Rs. in Million) and Portion of out of Total Debt

This section provides an intricate breakdown of internal debt, including Treasury Bills, Development Bonds, Non-Specific Bonds (NSB), and Specific Bonds (SB). The data showcases shifting investment preferences and borrowing strategies over the years. The patterns of these components reflect changing economic contexts, policy shifts, and investor preferences. The analysis emphasizes the importance of understanding the driving forces behind these fluctuations to derive accurate conclusions.

The dataset spans from 1990/91 to 2021/22, depicting an entity's total internal debt. Over this period, substantial growth and fluctuations are evident. Starting at 20855.9 in 1990/91, the debt increased gradually until the mid-2000s. Notable rises occurred in 2000/01 to 2001/02 (73620.7), through 2008/09 (120873.7), and notably in 2010/11 (179328.4) and 2011/12 (209120.2). A peak of 452970.6 was reached in 2018/19. Fiscal year 2019/20 (613211.9) showed minor decrease, followed by a considerable drop in 2020/21 (800320.1), reversing in 2021/22 (984285.2). The data reflects significant internal debt accumulation influenced by economic conditions and fiscal decisions, warranting deeper analysis for a comprehensive understanding.

The data from 1990/91 to 2021/22 illustrates Treasury Bills (TB) and their percentage as a portion of total bills. Starting at 2351 in 1990/91, TB grew gradually until 2001/02 (41106.5), surged sharply through 2006/07 (74445.3), and peaked at 215218.10 in 2019/20. A surge to 279591.50 in 2020/21 and 345508.00 in 2021/22 indicates substantial growth. The percentage of TB relative to total bills varied notably, with peaks in the mid-2000s. The data reflects changing Treasury bill issuance priorities and investment strategies within broader economic and fiscal contexts.

The data from 1990/91 to 2021/22 illustrate Development Bond and there percentages of total bill .Starting at in 5482 in 1990/91, with fluctuation thereafter. Notably, fiscal years 2015/16 (10890) and 2016/17 (16390.01) deviated remarkably. Percentage-wise, DB as part of total bonds peaked at 58.52% in 2016/17. The data reflects shifts in investment strategies and government priorities, necessitating contextual analysis.

The data spans 1990/91 to 2021/22, portraying Non-Specific Bonds (NSB) and their percentage of total NSB. Starting at 3646.5 in 1990/91, NSB fluctuated until 2000/01 (12476.4), declining to 90.65 in 2015/16, and reached zero in 2018/19. Percentage-

wise, NSB as part of total NSB started at 17.48%, reflecting changing investment preferences and warranting deeper analysis.

Table 2

Composition of Internal Debt (Rs. in Million) and Portion of out of Total Debt.

Fiscal Year	T-bill	Development Bond	NSB	SB	CSB	FEB	Total Int. Debt
1990/91	2351.0	5482.3	3646.5	9376.1	0.0	0.0	20855.9
1991/92	3483.2	5132.2	4546.3	10073.2	0.0	0.0	23234.9
1992/93	4403.2	5132.2	4901.5	11019.1	0.0	0.0	25456.0
1993/94	5216.3	4732.2	5691.5	14991.2	0.0	0.0	30631.2
1994/95	6392.5	4122.2	6076.4	15466.8	0.0	0.0	32057.9
1995/96	7142.5	3672.2	7376.5	16050.6	0.0	0.0	34241.8
1996/97	8092.5	3042.2	8736.5	16019.6	0.0	0.0	35890.8
1997/98	9182.5	3302.2	9886.4	16035.5	0.0	0.0	38406.6
1998/99	17586.9	3872.2	10426.4	17784.2	0.0	0.0	49669.7
1999/00	21026.9	4262.2	11526.5	17541.4	0.0	0.0	54357.0
2000/01	27610.8	5962.3	12476.4	13994.3	0.0	0.0	60043.8
2001/02	41106.5	11090.7	11536.1	9259.3	628.1	0.0	73620.7
2002/03	46844.9	13090.7	10659.9	9621.7	931.1	0.0	81148.3
2003/04	49429.6	17549.2	9029.8	8946.2	1178.9	0.0	86133.7
2004/05	51383.1	19999.2	6576.8	8176.3	1428.9	0.0	87564.3
2005/06	62970.3	17959.2	3876.8	3469.8	1678.9	0.0	89954.9
2006/07	74445.3	19177.1	1516.9	2773.5	1391.0	0.0	99303.8
2007/08	85033.0	21735.4	1116.9	339.4	3014.4	0.0	111239.1
2008/09	86515.0	29478.5	216.9	229.6	4433.6	0.0	120873.7
2009/10	102043.7	35519.4	0.0	169.7	5122.9	4.0	142859.7
2010/11	120340.7	43519.4	10680.0	158.0	4622.9	7.4	179328.4
2011/12	131624.1	57519.4	15680.0	157.6	4123.1	16.0	209120.2
2012/13	136468.1	51610.9	15680.0	0.0	3183.8	58.9	207001.7
2013/14	136468.1	47110.9	16586.5	0.0	1516.7	135.4	201817.6
2014/15	119858.1	57070.0	16586.5	0.0	3056.2	215.0	196785.8
2015/16	116059.1	108900.0	906.5	0.0	7806.2	486.2	234157.9
2016/17	110409.3	163900.1	906.5	0.0	7965.2	529.7	283710.8
2017/18	144847.9	235900.0	906.4	0.0	8716.3	528.0	390898.6
2018/19	146792.9	297347.0	0.0	0.0	8376.1	454.6	452970.6
2019/20	215218.1	389947.0	0.0	0.0	7641.9	404.9	613211.9
2020/21	279591.5	513947.0	0.0	0.0	6595.9	185.7	800320.1
2021/22	354508.0	620447.0	0.0	0.0	9140.0	190.2	984285.2

Source: Nepal Rastra Bank 2022

Table 2.1

Composition of Internal Debt% Portion of out of Total Debt

Year	%TB	%DB	% NSB	%SB	%CSB	%FEB
1990/91	11.27	26.29	17.48	44.96	0.00	0.00
1991/92	14.99	22.09	19.57	43.35	0.00	0.00
1992/93	17.30	20.16	19.25	43.29	0.00	0.00
1993/94	17.03	15.45	18.58	48.94	0.00	0.00
1994/95	19.94	12.86	18.95	48.25	0.00	0.00
1995/96	20.86	10.72	21.54	46.87	0.00	0.00
1996/97	22.55	8.48	24.34	44.63	0.00	0.00
1997/98	23.91	8.60	25.74	41.75	0.00	0.00
1998/99	35.41	7.80	20.99	35.80	0.00	0.00
1999/00	38.68	7.84	21.21	32.27	0.00	0.00
2000/01	45.98	9.93	20.78	23.31	0.00	0.00
2001/02	55.84	15.06	15.67	12.58	0.85	0.00
2002/03	57.73	16.13	13.14	11.86	1.15	0.00
2003/04	57.39	20.37	10.48	10.39	1.37	0.00
2004/05	58.68	22.84	7.51	9.34	1.63	0.00
2005/06	70.00	19.96	4.31	3.86	1.87	0.00
2006/07	74.97	19.31	1.53	2.79	1.40	0.00
2007/08	76.44	19.54	1.00	0.31	2.71	0.00
2008/09	71.57	24.39	0.18	0.19	3.67	0.00
2009/10	71.43	24.86	0.00	0.12	3.59	0.00
2010/11	67.11	24.27	5.96	0.09	2.58	0.00
2011/12	62.94	27.51	7.50	0.08	1.97	0.01
2012/13	65.93	24.93	7.57	0.00	1.54	0.03
2013/14	67.62	23.34	8.22	0.00	0.75	0.07
2014/15	60.91	29.00	8.43	0.00	1.55	0.11
2015/16	49.56	46.51	0.39	0.00	3.33	0.21
2016/17	38.92	57.77	0.32	0.00	2.81	0.19
2017/18	37.06	60.35	0.23	0.00	2.23	0.14
2018/19	32.41	65.64	0.00	0.00	1.85	0.10
2019/20	35.10	63.59	0.00	0.00	1.25	0.07
2020/21	34.93	64.22	0.00	0.00	0.82	0.02
2021/22	36.02	63.04	0.00	0.00	0.93	0.02

Sources: Nepal Rastra Bank 2022

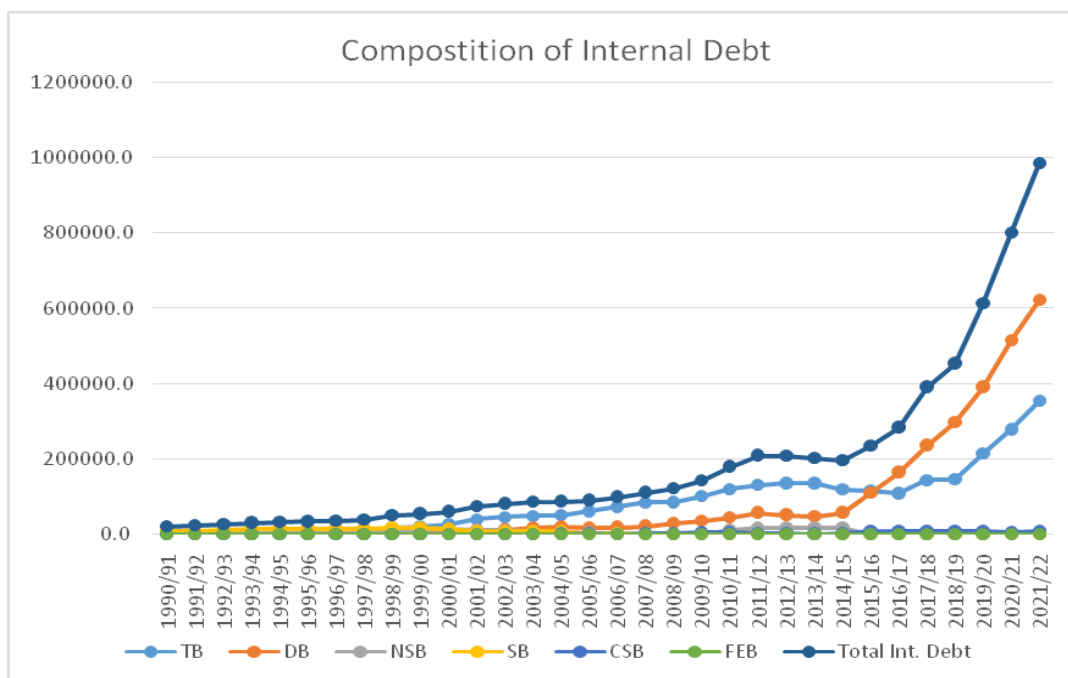
The data covers 1990/91 to 2021/22, showcasing Development Bonds (DB) and their percentage as part of total bonds. Beginning at 5482.3 in 1990/91, DB fluctuated until 2000/01 (5962.2). A surge through 2004/05 (19999.2) led to growth until 2011/12

The data covers 1990/91 to 2021/22, illustrating Specific Bonds (SB) and their percentage of total SB. Starting at 9376.1 in 1990/91; SB fluctuated, with notable increases in 1998/99 and 1999/00, followed by declines. The percentage of SB started at 44.96%, reflecting changing investment strategies. Understanding these trends requires analysis of economic, financial, and policy factors.

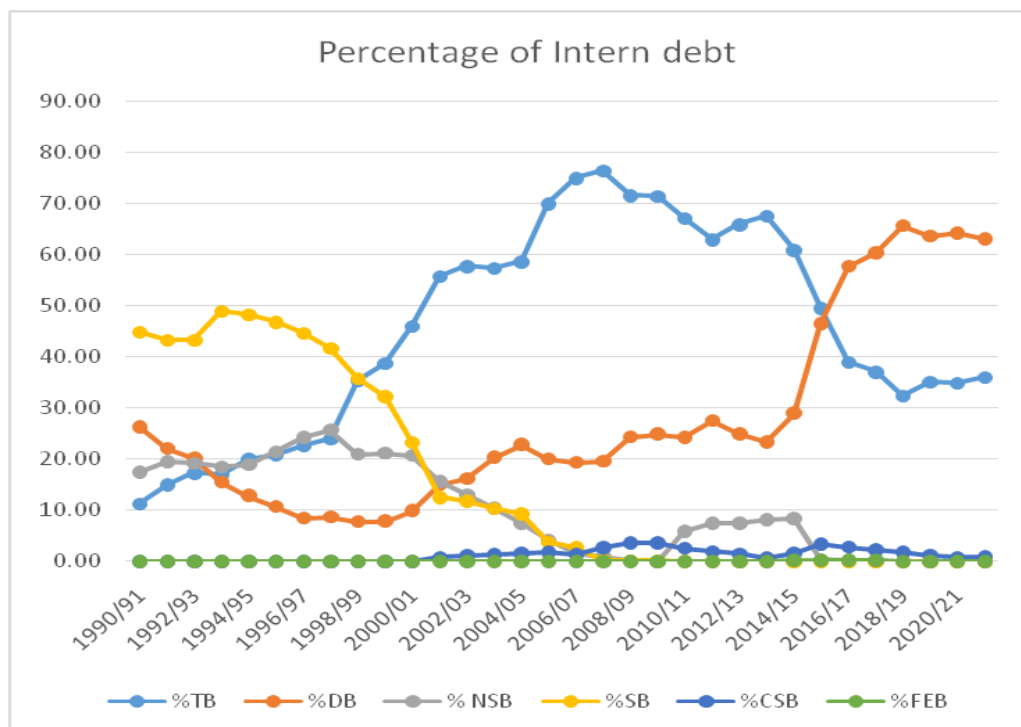
The data of CSB is 1990/91 is zero it start only from 2001/02, Starting at (628).in2015/16 at (7806.2) CBS fluctuated, with notable increase 2021/22(9140).The data of FEB start from 2010/11with (7.4) and increasing trend from 2015/16 it reach at (486.2).FBS fluctuated, in 2021/22 (190.2).

In conclusion, Table 2 the dataset spanning from 1990/91 to 2021/22 unveils an entity's internal debt dynamics characterized by substantial growth and fluctuations. Notable inflection points in internal debt include significant rises during 2000/01 to 2001/02, through 2008/09, and notably in 2010/11 and 2011/12, reaching a peak in 2018/19. Treasury Bills (TB) demonstrated substantial growth and variance, reflecting changing issuance priorities and investment strategies. Development Bonds (DB) showcased remarkable growth followed by fluctuations, while Non-Specific Bonds (NSB) and Specific Bonds (SB) exhibited diverse patterns, reflecting shifting investment preferences. These trends underscore the need for thorough analysis, considering economic, financial, and policy factors, to accurately interpret the observed shifts in borrowing and investment strategies over time.

Figure 2
Composition of Internal Debt



Source: Nepal Rastra Bank 2022



Sources: Nepal Rastra Bank 2022

4.1.2.2 Composition of External Debt

External borrowing has exhibited a consistent upward trend on an annual basis. In Nepal, the predominant channels for external borrowing primarily comprise bilateral and multilateral sources. Bilateral sources entail agreements between two countries, enabling one nation to secure loans or acquire goods and services from another government. Conversely, multilateral sources encompass funds obtained from international institutions, including the World Bank, IMF, ADB, EU, as well as collaborative efforts among nations, government entities, businesses, consumers, and various international organizations. The government retains the capacity to tap into external funds through both bilateral and multilateral avenues.

External Debt by Sources (Rs. Millions)

This section delves into external debt sources bilateral and multilateral. It highlights the entity's borrowing practices, influenced by diplomatic relations, international financial conditions, and policy decisions. Fluctuations in external debt mirror economic and policy shifts, with bilateral sources displaying more volatility due to changing diplomatic relationships, while multilateral sources exhibit more consistency based on global financial conditions.

Table 3

External Debt by Sources (Rs. Millions)

Fiscal Years	Total Debt	Bilateral Sources	Multilateral Sources	% BD of TD	% of MD of TD
1990/91	5990	2939.9	3050.1	49.08	50.92
1991/92	7800.4	3597.3	4203.1	46.12	53.88
1992/93	9235.6	3638.5	5597.1	39.40	60.60
1993/94	11557.2	2627.1	8930.1	22.73	77.27
1994/95	47148.4	39887.7	7260.7	84.60	15.40
1995/96	14289	3533.3	10755.7	24.73	75.27
1996/97	15031.9	6012.7	9019.2	40.00	60.00
1997/98	15993.3	5833.9	10159.4	36.48	63.52
1998/99	5048.3	488.3	4560	9.67	90.33
1999/00	7587.8	0	7587.8	0.00	100.00
2000/01	16997.9	3449.9	13548	20.30	79.70
2001/02	9887.5	1146.5	8741	11.60	88.40
2002/03	15845.1	129.3	15715.8	0.82	99.18
2003/04	14781	0	14781	0.00	100.00
2004/05	12759.6	0	12759.6	0.00	100.00
2005/06	2659.9	0	2659.9	0.00	100.00
2006/07	6162.7	0	6162.7	0.00	100.00
2007/08	8122	7485.5	636.5	92.16	7.84
2008/09	4879.5	3541.5	1338	72.58	27.42
2009/10	26351.2	0	26351.2	0.00	100.00
2010/11	35062.9	700	34362.9	2.00	98.00
2011/12	39841.9	21453	18388.9	53.85	46.15
2012/13	47566.8	1521	46045.8	3.20	96.80
2013/14	60526	6587	53939	10.88	89.12
2014/15	134216	98029	36187.2	73.04	26.96
2015/16	116395	44757	71638	38.45	61.55
2016/17	152568	51287.4	101281	33.62	66.38
2017/18	117094	0	117094	0.00	100.00
2018/19	104827	0	104827	0.00	100.00
2019/20	90090.7	333	89757.7	0.37	99.63
2020/21	897577	0	897577	0.00	100.00
2021/22	1062445	1047	1061398	0.10	99.90

Source: Nepal Rastra Bank 2022

The provided dataset spans from 1990/91 to 2021/22, representing total debt values. An analysis reveals notable trends and fluctuations. Starting at 5990 in 1990/91, total debt experienced fluctuations until 2000/01 (16997.9). Subsequently, there was a significant increase, reaching a peak of 134216 in 2014/15. A substantial surge occurred in the fiscal year 2015/16 (116395), followed by further growth to 152569 in 2016/17. Thereafter, the trend reversed, with notable decreases in 2017/18 (117094), 2018/19 (104827), and 2019/20 (90090.7). An exceptional surge occurred in 2020/21 (897577), followed by another remarkable increase in 2021/22 (1062445). This data illustrates varying borrowing patterns influenced by economic and policy factors, necessitating a comprehensive analysis of underlying drivers for accurate interpretation.

The data provided covers fiscal years from 1990/91 to 2021/22, representing bilateral sources of funding. An analysis reveals significant variations in funding levels over time. Starting at 2939.9 in 1990/91, bilateral sources saw fluctuations. An exceptional increase occurred in 1994/95 (39887.7), followed by varying patterns. Notably, there were no reported amounts for 1999/00 and some subsequent years. A resurgence in 2001/02 (1146.5) was followed by sharp drops in 2002/03 (129.3) and 2003/04 (0), indicating shifts in borrowing strategies. Funding from bilateral sources was absent in subsequent years, then reappeared significantly in 2007/08 (7485.5) and 2011/12 (21453). Thereafter, the amounts saw fluctuations, including a peak of 98029 in 2014/15. Years with no funding from bilateral sources were interspersed. This data illustrates changing borrowing priorities, influenced by diplomatic relations and economic conditions, requiring context for accurate interpretation.

The data provided spans from 1990/91 to 2021/22, representing multilateral sources of funding. An analysis highlights significant fluctuations and trends. Starting at 3050.1 in 1990/91, multilateral sources exhibited variations. There were increases in 1992/93 (5597.1) and 1993/94 (8930.1), followed by changes in the mid-1990s. Notable growth occurred from 1999/00 (7587.8) through 2000/01 (13548) and into the 2000s, with fluctuations until 2006/07 (6162.7). Funding decreased notably in 2007/08 (636.5) and 2008/09 (1338), followed by a surge to 26351.2 in 2009/10. Remarkable increases followed in subsequent years, reaching a peak of 1062445 in 2021/22. This data reflects changing international relations, economic conditions, and

borrowing priorities, necessitating comprehensive analysis within a broader context for accurate interpretation.

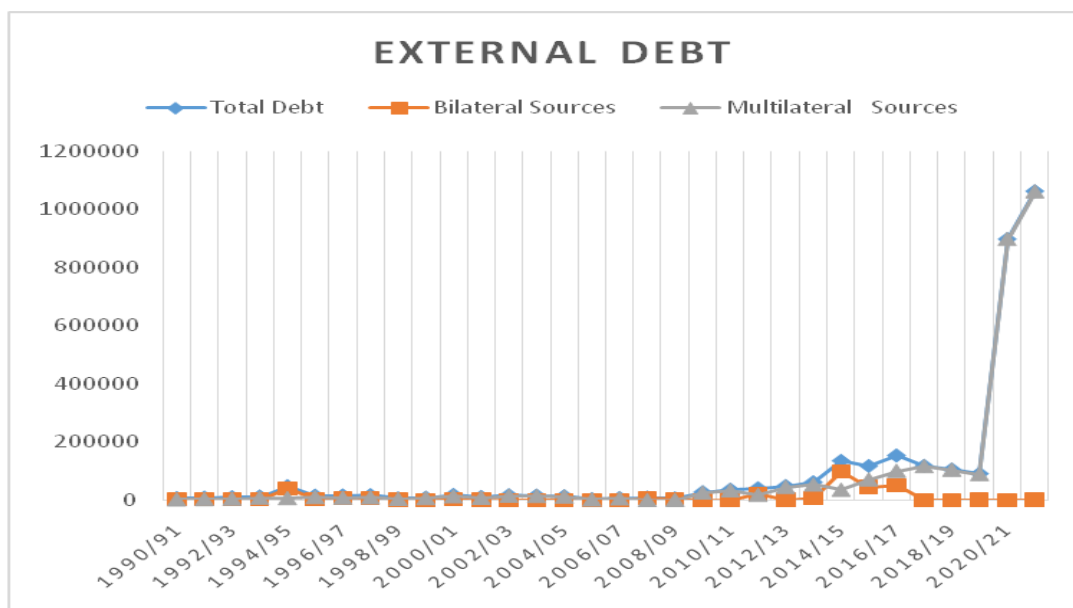
In conclusion, Table 3 provides a comprehensive view of external debt categorized by sources, encompassing bilateral and multilateral sources, from 1990/91 to 2021/22. The analysis of this data reveals distinctive trends and fluctuations that shed light on the borrowing practices of the entity under consideration. The total debt exhibited noteworthy patterns, with periods of growth, decline, and surges in borrowing. The substantial increase in debt during 2014/15 followed by a reversal in subsequent years, culminating in a surge in 2020/21 and 2021/22, underscores the dynamic nature of borrowing influenced by economic conditions and policy choices.

Bilateral sources of funding displayed remarkable variations, characterized by fluctuations and periods of absence. Notable spikes and drops in bilateral funding levels illustrate the impact of diplomatic relationships and changing borrowing strategies. Multilateral sources, on the other hand, exhibited more consistent patterns, with fluctuations and periods of growth coinciding with changing international financial conditions and borrowing preferences.

The data underscores the importance of a comprehensive analysis that considers economic indicators, diplomatic relations, and policy shifts to accurately interpret borrowing trends. It is clear that external borrowing decisions are influenced by a myriad of factors, and a nuanced understanding of these factors is crucial to making informed interpretations about the borrowing practices of the entity over the specified period.

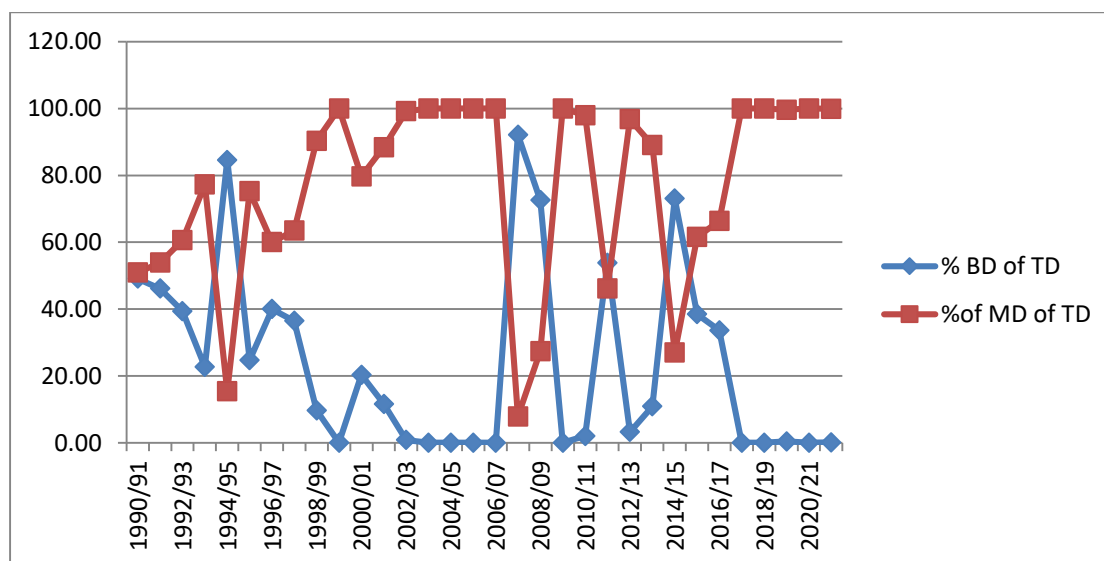
Figure 3

Composition of External Debt



Source: Nepal Rastra Bank 2022

Percentages of External Debt Source



Source: Nepal Rastra Bank 2022

Public Debt of GDP and Inflation Rate

This section explores the relationship between Public Debt% of GDP and inflation rates. The data indicates that while correlations exist between public debt and inflation, the relationship is multifaceted and influenced by various factors. Economic challenges, policy interventions, and global trends play a pivotal role in driving

inflation. A comprehensive understanding requires considering broader economic contexts and policy decisions.

Table 4

Public Debt % as (GDP) and Inflation Rate

Fiscal Year	Public Debt% as GDP	Inflation%
1990/91	0.9	15.56
1991/92	1.12	17.15
1992/93	1.28	7.51
1993/94	1.48	8.35
1994/95	1.39	7.62
1995/96	1.68	9.22
1996/97	4.6	8.1
1997/98	4.98	8.33
1998/99	5.01	11.38
1999/00	4.72	3.39
2000/01	4.3	2.44
2001/02	3.41	2.9
2002/03	2.72	4.74
2003/04	2.36	3.96
2004/05	3.08	4.45
2005/06	3.05	7.96
2006/07	3.83	6.21
2007/08	3.61	6.68
2008/09	2.86	12.62
2009/10	3.52	9.57
2010/11	4.04	9.57
2011/12	3.11	8.31
2012/13	1.83	9.84
2013/14	2.11	9.08
2014/15	3.35	7.21
2015/16	3.36	9.94
2016/17	5.57	4.45
2017/18	5.89	4.15
2018/19	28.24	4.64
2019/20	30.25	6.15
2020/21	38.05	3.6
2021/22	41.4	6.32

Source: Nepal Rastra Bank 2022

The dataset spanning from 1990/91 to 2021/22 elucidates the intricate interplay between Public Debt% as a fraction of GDP and inflation rates. A comprehensive analysis of this dataset reveals several significant trends and insights. While examining the relationship between public debt and inflation over time, it becomes apparent that there is no consistent and direct correlation between the two variables. The early 1990s witnessed moderate levels of both public debt and inflation, accompanied by fluctuations in inflation rates around 15-17%. Notable patterns emerge with peaks in public debt, particularly in 2018/19 and 2019/20, coinciding with inflation rates of 4.64% and 6.15%, respectively, suggesting a possible connection between higher debt levels and inflation. However, this association is not uniform across the entire time span. Inflation rates exhibited fluctuations over the years, with periods of elevated inflation and moments of relative moderation.

Recent years indicate an increase in both public debt and inflation rates, but the intricate interplay of these factors is influenced by complex economic and policy dynamics. Moreover, the fiscal years 2008/09 and 2009/10 stand out with relatively high inflation rates (12.62% and 9.57% respectively) despite moderate public debt levels, suggesting the influence of economic challenges and possible policy interventions. In conclusion, while certain periods hint at potential correlations, a comprehensive understanding of the relationship between public debt and inflation demands an encompassing analysis of broader economic contexts, government policies, and external influences.

In conclusion, table 4 presents a comprehensive overview of the relationship between Public Debt% as a portion of GDP and inflation rates, covering the fiscal years from 1990/91 to 2021/22. An in-depth analysis of this dataset provides valuable insights into the intricate dynamics between these two key economic indicators. While scrutinizing the trends over time, we can see that the connection between public debt and inflation is not always straightforward and can be quite intricate

Throughout the early 1990s, there were moderate levels of both public debt and inflation, accompanied by fluctuations in inflation rates around 15-17%. The patterns become more pronounced as the year's progress, with instances of higher public debt levels aligning with periods of elevated inflation. The fiscal years 2018/19 and 2019/20, characterized by peak public debt levels, corresponded to inflation rates of

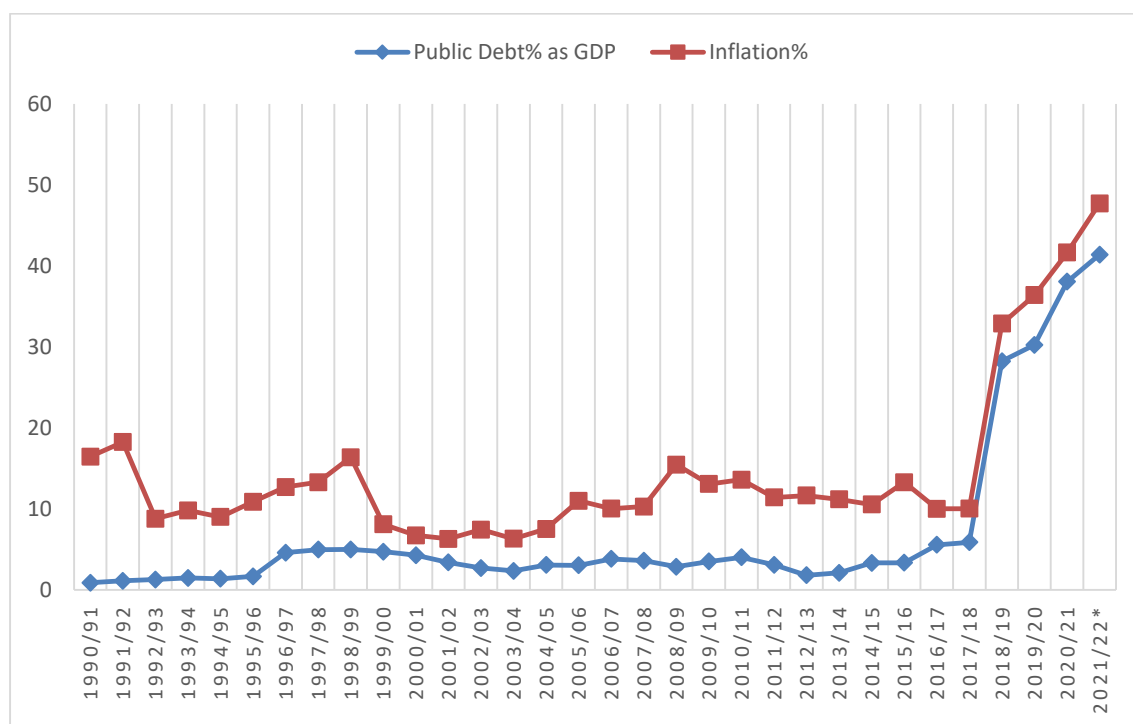
4.64% and 6.15%, suggesting a potential connection between increased debt and inflation. However, this correlation is not uniform across all time periods.

Certain fiscal years, like 2008/09 and 2009/10, stand out with relatively high inflation rates despite moderate public debt levels, indicating that other factors, such as economic challenges and policy interventions, also play a pivotal role in driving inflation. Recent years demonstrate simultaneous increases in public debt and inflation rates, underscoring the complex interaction of these variables in response to evolving economic conditions and policy measures.

In essence, the dataset implies that while there are instances of apparent correlation between public debt and inflation, their relationship is multifaceted and influenced by a range of factors, including government policies, global economic trends, and domestic economic health. A comprehensive understanding of this relationship necessitates a thorough examination of broader economic contexts and policy decisions to accurately interpret the driving forces behind the observed trends.

Figure 4

Inflation and Public debt as % of GDP



Source: Nepal Rastra Bank 2022

Composition of Public Debt, GDP, and M2

This section provides insights into the interplay between Public Debt, GDP, and M2 (money supply). The analysis underscores the complex relationship between these indicators and their multifaceted influences on economic dynamics. Fluctuations in public debt align with shifts in GDP growth, while M2 expansion reflects broader economic activities. The data highlights the impact of the COVID-19 pandemic and the need for a holistic perspective to interpret the trends accurately.

Table 5

Public Debt, GDP, and M2

Fiscal year	Public Debt	GDP (Million)	M2
1990/91	5990	666500	37,712.50
1991/92	7800.4	693900	45,670.50
1992/93	9235.6	720600	58,322.50
1993/94	11557.2	779800	69,777.10
1994/95	11249.4	806900	80,984.70
1995/96	14289	849900	92,652.20
1996/97	25899.3	894600	103,720.60
1997/98	123439	921000	126,462.60
1998/99	5048.3	962200	152,800.20
1999/00	7587.8	1021100	186,120.80
2000/01	16997.9	1078600	214,454.20
2001/02	9887.5	1079900	223,988.30
2002/03	15845.1	1122500	245,911.20
2003/04	14781	1175000	277,306.10
2004/05	12759.6	1215900	300,440.00
2005/06	2659.9	1256800	346,824.10
2006/07	6162.7	1299700	395,518.20
2007/08	8122	1379000	495,377.10
2008/09	4879.5	1441500	630,512.20
2009/10	26351.2	1511000	719,599.10
2010/11	35062.9	1562700	921,320.10
2011/12	39841.9	1632000	1,130,302.30
2012/13	47566.8	1689600	1,315,376.30
2013/14	60526	1791100	1,565,967.20
2014/15	134216	1862400	1,877,801.50
2015/16	116395	1870400	2,244,578.60
2016/17	152569	2038300	2,591,702.00
2017/18	117094	2193700	3,094,466.60
2018/19	104827	2339700	3,582,137.70
2019/20	90090.7	2284300	4230969.8
2020/21	897577	2394800	5154853.2
2021/22	1061398	2529200	5505400.8

Source: Nepal Rastra Bank 2022

The dataset spanning from 1990/91 to 2021/22 provides insights into the dynamics between Public Debt, GDP, and M2 (money supply). Notable trends and relationships can be discerned from the data. Public Debt displays fluctuations over the years, with a marked increase from the mid-1990s onwards. Notably, a significant surge is evident between 2009/10 and 2010/11, likely indicating heightened borrowing during that period. These patterns correspond with the variations seen in GDP, which exhibits gradual growth over time, occasionally marked by peaks and troughs. Concurrently, the measure of money supply (M2) shows consistent growth throughout the analyzed period, reflecting the expansion of economic activities.

The data underscores that while both Public Debt and M2 expand over time, the correlation between the two is not straightforward. While economic growth is apparent through rising GDP and M2, Public Debt's fluctuations suggest diverse influences, including government policies and economic priorities. Remarkably, the dataset reflects the impact of the COVID-19 pandemic, with a substantial surge in Public Debt during 2020/21, possibly reflecting increased government spending to navigate the crisis. The subsequent fiscal year, 2021/22, continues to show elevated Public Debt levels, likely indicating ongoing economic recovery efforts. In summary, the dataset reflects a complex interplay of economic indicators, policy decisions, and external challenges, highlighting the multifaceted nature of fiscal and monetary dynamics over the analyzed decades.

In conclusion, Table 5 offer a comprehensive depiction of the intricate relationships among Public Debt, GDP, and M2 (money supply) spanning from 1990/91 to 2021/22. This dataset provides valuable insights into the dynamics of economic growth, fiscal management, and monetary expansion. Analyzing the data reveals several significant trends and interconnections.

The patterns within Public Debt are marked by fluctuations over the years, with a discernible increase from the mid-1990s onward. Notably, a substantial surge is observed between 2009/10 and 2010/11, potentially signifying heightened borrowing during that period. These trends correlate with the variations in GDP, which displays steady growth over time, albeit punctuated by occasional peaks and troughs. In parallel, the measure of money supply (M2) demonstrates consistent expansion

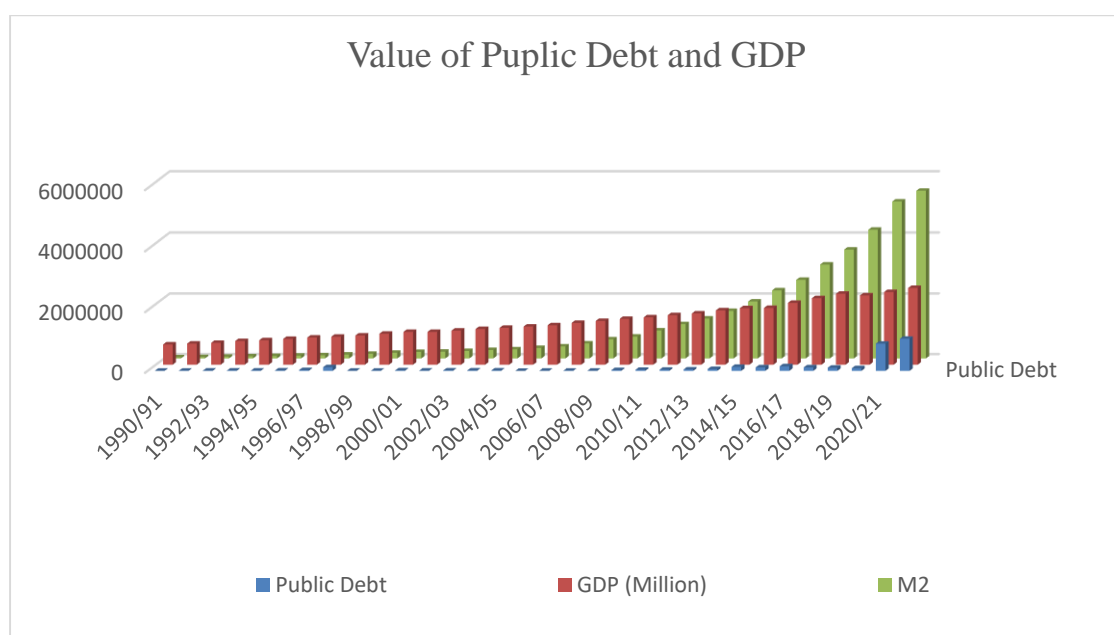
throughout the analyzed period, reflecting the broader growth of economic activities and monetary circulation.

The data emphasizes that while both Public Debt and M2 exhibit expansion over time; their relationship is intricate and not linear. While economic growth is evident through the rise in GDP and M2, the fluctuations in Public Debt suggest a range of influences, including shifts in government policies and economic priorities. A noteworthy aspect is the dataset's reflection of the impact of the COVID-19 pandemic. A substantial surge in Public Debt during 2020/21 likely represents increased government spending to address the crisis, while the subsequent fiscal year, 2021/22, continues to display elevated Public Debt levels, possibly indicating ongoing economic recovery efforts.

In summary, this dataset illustrates the multifaceted interactions among economic indicators, policy decisions, and external challenges. It emphasizes the complex nature of fiscal and monetary dynamics and underscores the importance of considering various factors to comprehensively interpret the trends and patterns observed over the analyzed decades. The relationships among Public Debt, GDP, and M2 underscore the intricate web of economic forces at play, necessitating a holistic perspective for a thorough understanding of these trends.

Figure 5

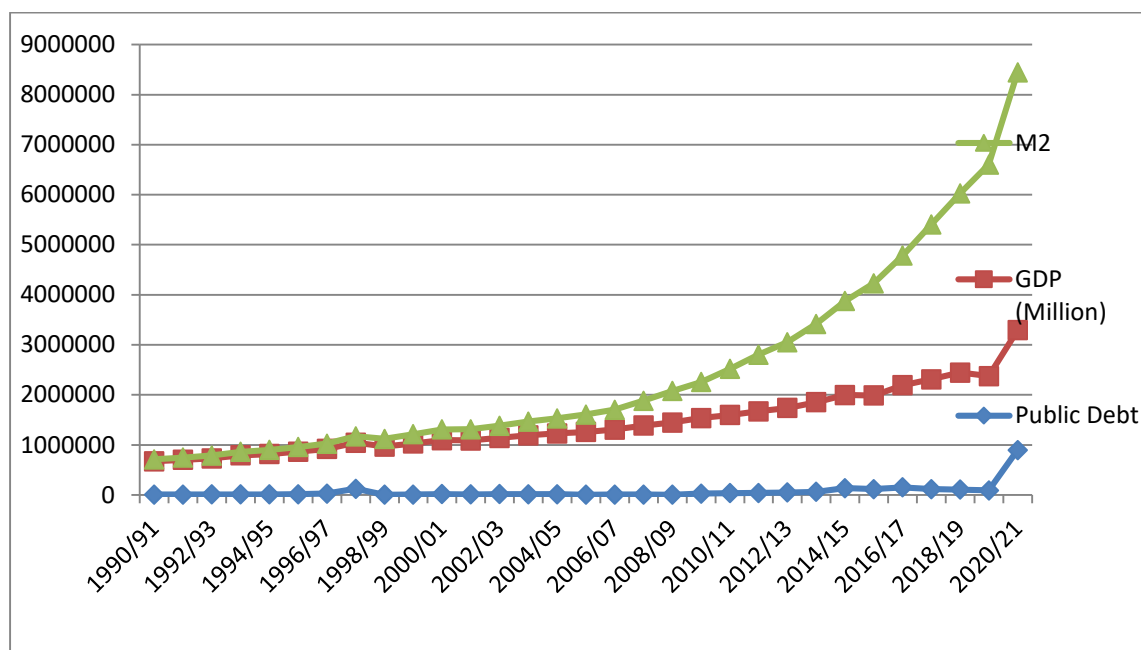
Value of Public Debt, GDP and M2



Source: Nepal Rastra Bank 2022

Figure 5.1

Composition of Public debt, GDP and M2



Source: Nepal Rastra Bank 2022

Growth Rate of Total debt, Growth Rate of GDP

This section examines the growth rates of Total Debt, and GDP. The data showcases the intricate interactions among these indicators, reflecting economic resilience, policy responses to crises, and inflation dynamics. Notable patterns emerge, underscoring the importance of considering a wide array of economic variables to accurately interpret trends.

Table 6

Growth Rate of Total debt, Growth Rate of GDP

Fiscal year	Growth Rate of Total debt	Growth GDP
1990/91	56.1	16.39
1991/92	17.2	24.19
1992/93	19.9	14.71
1993/94	17.5	16.21
1994/95	9.4	9.99
1995/96	11.9	13.57
1996/97	3.5	12.7
1997/98	18.8	7.25
1998/99	9.8	13.69
1999/00	11.8	10.95
2000/01	6.8	16.35
2001/02	12.3	4.06
2002/03	3.1	7.14
2003/04	5.3	9.04
2004/05	-3.7	9.81
2005/06	5.4	10.97
2006/07	-2.5	11.27
2007/08	14.3	12.07
2008/09	10.2	21.16
2009/10	0.3	20.69
2010/11	10	3.42
2011/12	18.1	12.52
2012/13	4.3	10.86
2013/14	1.5	14.53
2014/15	-1.6	8.56
2015/16	15.3	7.61
2016/17	12	17.98
2017/18	31.3	12.31
2018/19	14.3	11.66
2019/20	36.2	0.77
2020/21	21.5	9.99
2021/22	16	13.43

Source: Nepal Rastra Bank 2022

The dataset under consideration spans Nepal's fiscal years from 1990/91 to 2021/22 and presents a comprehensive analysis of the growth rates of three pivotal economic indicators Total Debt, and GDP. This data unveils intricate relationships that shape the nation's economic dynamics, unveiling noteworthy patterns upon closer examination.

The oscillating growth rates of Total Debt align closely with corresponding fluctuations in GDP growth rates. This suggests a significant interplay between borrowing trends and the expansion or contraction of the overall economy.

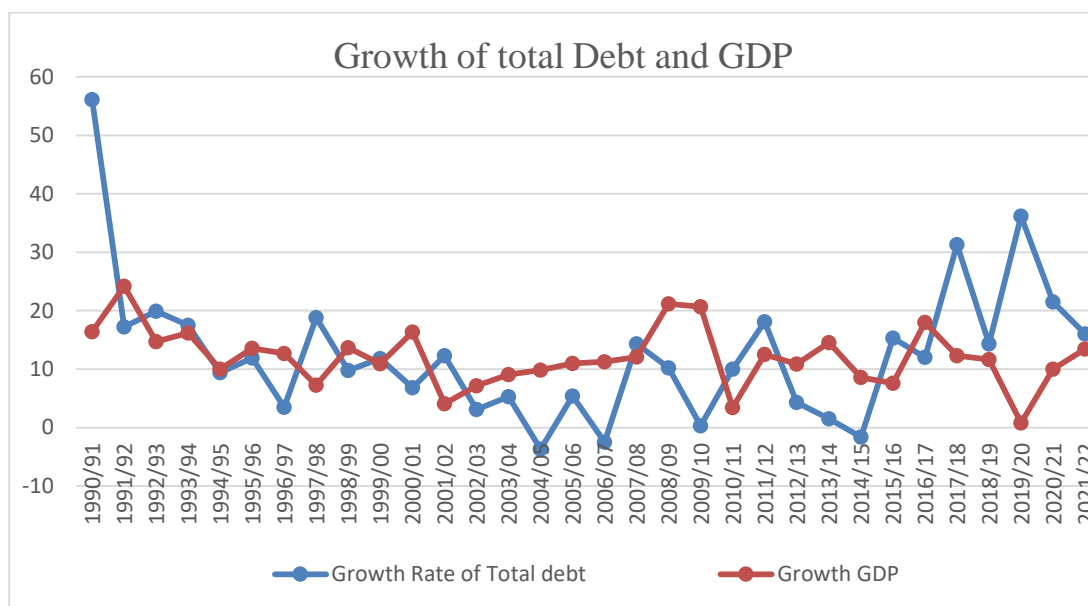
The years 2008/09 and 2009/10 stand out, potentially reflecting the response to the global financial crisis. These years indicate a strategic deployment of fiscal measures that may have influenced GDP growth. The data also reveals a post-crisis economic resilience, with positive GDP growth alongside manageable debt growth. Recent years, particularly 2020/21 and 2021/22, exhibits notable surges in both Total Debt and GDP growth rates. These surges might signify concerted efforts to rejuvenate the economy from the impacts of the COVID-19 pandemic.

However, the intricate connections between Total Debt, GDP growth, and inflation emphasize the necessity for a holistic comprehension of multifarious economic variables. These variables encompass governmental policies, external influences, and the broader economic context. Such a comprehensive perspective is indispensable for accurately interpreting and dissecting the observed trends within this dataset.

In conclusion, Table 6 this dataset's analysis of the growth rates of Total Debt, and GDP growth, from 1990/91 to 2021/22 provides valuable insights into the complex interactions shaping Nepal's economic landscape. These insights underscore the nuanced dynamics that underlie the nation's economic progress and offer valuable guidance for policymakers, economists, and analysts seeking a deeper understanding of the intricate economic forces at play.

Figure 6

Composition of Growth of Total debt, Growth of GDP



Source: Nepal Rastra Bank 2022

Composition of CPI, Food and Beverage and Non-food and Services

This section provides insights into the growth rates of Total Debt, GDP, and Inflation. The analysis reveals patterns in economic expansion, fiscal measures, and inflation dynamics. Notable correlations between Total Debt, GDP growth, and inflation highlight the importance of holistic economic analysis, encompassing policy decisions and external influences.

Table 7

Composition of CPI, Food and Beverage and Non-food and Services

Fiscal year	CPI	Food and beverages	Non-food and services
1990/91	16.1	13.6	18.8
1991/92	19.5	16.9	21.5
1992/93	21.2	18	24.4
1993/94	23.1	19.6	26.7
1994/95	24.9	21	28.8
1995/96	26.9	22.9	30.7
1996/97	29.1	24.8	33.1
1997/98	31.5	26.7	36.1
1998/99	35.1	31	38.2
1999/00	36.3	31.2	40.9
2000/01	37.2	30.5	44.2
2001/02	38.3	31.6	45.2
2002/03	40.1	33	47.4
2003/04	41.7	34.1	49.7
2004/05	43.6	35.4	52.2
2005/06	47.1	38.2	56.4
2006/07	49.8	40.9	59.2
2007/08	53.2	44.7	61.6
2008/09	59.9	52.4	67.2
2009/10	65.6	60.4	70.4
2010/11	71.9	69.3	74.3
2011/12	77.8	74.6	80.9
2012/13	85.5	81.7	89.1
2013/14	93.3	91.2	95.1
2014/15	100	100	100
2015/16	109.9	110.9	109.2
2016/17	114.8	113	116.3
2017/18	119.6	116.1	122.4
2018/19	125.1	119.7	129.6
2019/20	132.8	129.5	135.5
2020/21	137.6	136	138.9
2021/22	144.4	142	146.3

Source: Nepal Rastra Bank 2022

The comprehensive breakdown of the Consumer Price Index (CPI) composition in Nepal, as depicted in the provided data from the fiscal year 1990/91 to 2021/22, unveils the proportions of its two primary components: Food and Beverages, and Non-food and Services. This dataset brings to light the shifting consumption patterns

and price dynamics that collectively influence the overarching inflation trends. Over the examined years, a noticeable upward trajectory characterizes the CPI, reflecting the gradual increase in consumer prices. The Food and Beverages component, encompassing essential goods, consistently maintains a substantial share within the CPI, with its percentage closely mirroring the overall CPI trend. Meanwhile, the Non-food and Services component, which encompasses a diverse array of goods and services beyond basic necessities, exhibits steady growth, contributing to the consistent upward movement of the CPI.

A noteworthy highlight is the year 2014/15, wherein both the CPI and the Food and Beverages component reach a value of 100. This could potentially serve as a reference point for the index. The persistent growth in the CPI, complemented by the stable proportions of Food and Beverages and Non-food and Services components, underscores the delicate equilibrium between consumer consumption patterns, market dynamics, and inflationary influences.

This dataset emphasizes the significance of policymakers taking into account both components the essential and the non-essential—when crafting strategies to manage inflation and safeguard consumer well-being. The interplay between these components offers invaluable insights into the evolving economic landscape, guiding policymakers in making informed decisions that can adeptly address inflationary pressures while upholding the interests of the populace.

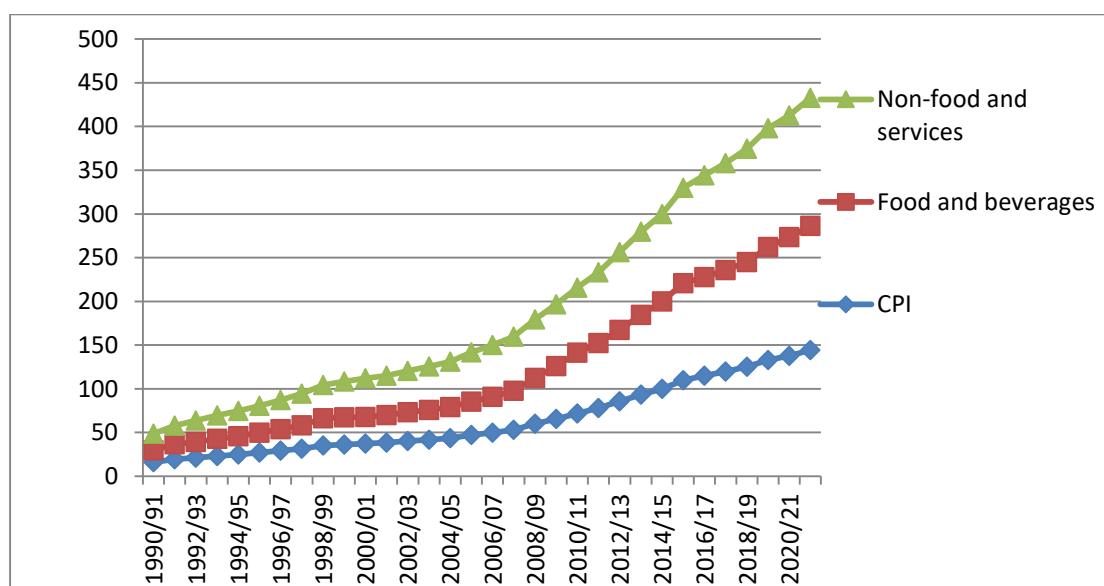
In conclusion, Table 7 the dataset in question provides an insightful and thorough analysis of the Consumer Price Index (CPI) composition in Nepal. It meticulously outlines the proportional contributions of the Food and Beverages and Non-food and Services components from 1990/91 to 2021/22. The data underscores the transformative consumption patterns and dynamic price trends that collectively mold the nation's inflation dynamics. The consistent growth in CPI, the persistent significance of Food and Beverages, and the expanding Non-food and Services component collectively underscore the delicate interplay between consumer behavior, market dynamics, and inflationary factors. Policymakers must consider both components to develop effective strategies that manage inflation and ensure consumer welfare. This dataset's insights are crucial for understanding Nepal's economic landscape and guiding informed policy decisions.

Overall Summary

In summary, these dataset tables collectively provide a comprehensive understanding of Nepal's economic evolution, borrowing behaviors, inflation patterns, and the intricate relationships between various economic indicators. The trends and correlations unveiled within this data underscore the complex interplay of factors that shape an economy's trajectory. Accurate interpretation requires a holistic approach, considering broader economic contexts, policy decisions, and global influences to derive meaningful insights for informed policymaking and strategic decision-making.

Figure 7

Composition of CPI Food and Beverage and Non-Food and services



Source: Nepal Rastra Bank 2022

4.2.1 Correlation Analysis

Correlation analysis measures the strength and direction of the relationship between two variables. It helps us understand how closely they are related, but it doesn't reveal a cause-and-effect connection. Even if two variables have a strong correlation, we can't determine which one is causing the change in the other. There are four key characteristics of the correlation coefficient. The correlation coefficient is not affected by changes in origin or scale. It's the geometric mean between two regression coefficients.

When the correlation coefficient is +1, it signifies a perfect positive correlation between the variables. Conversely, when the correlation coefficient is -1, it indicates a perfect negative correlation between the variables. If the correlation coefficient is zero, it means the variables are not correlated with each other there is a high degree of correlation two variable, it cannot be said which one is the cause and which one is effect. The first value of correlation coefficient lies between -1 and +1. Second, the formula of correlation is symmetrical i.e. $r_{xy} = r_{yx}$. Third, the correlation coefficient is independent of change of origin and scale. And fourth, correlation coefficient is geometric mean between two regression coefficients.

Table 8

Coefficient of Correlation among the CPI, Public debt, GDP and M2

Variables	CPI	Public debt	GDP	M2
CPI	1	0.57	0.99	0.94
Public debt	0.57	1	0.55	0.61
GDP	0.99	0.55	1	0.92
M2	0.94	0.61	0.92	1

Source: Author own Calculation

In conclusion, Table 8 this study examines the connections between four important economic factors the Consumer Price Index (CPI), public debt, Gross Domestic Product (GDP), and the amount of money in circulation (known as M2). CPI and public debt are moderately positively related, with a correlation coefficient of 0.57. This means that as one increases, the other tends to increase as well, but not extremely so. The correlation between CPI and GDP is quite strong at 0.99. This indicates a very high level of positive correlation, suggesting that when CPI goes up, GDP tends to rise significantly. Similarly, the relationship between CPI and broad money supply is also strong, positive relation with a correlation coefficient of 0.94. This means that when CPI increases, the amount of money in circulation (M2) tends to increase substantially. Public debt and GDP are moderately positively correlated, with a coefficient of 0.55. This shows that as public debt increases, GDP tends to increase to some extent. The correlation between public debt and broad money supply is also moderately positive, with a coefficient of 0.61. This suggests that when public debt goes up, the amount of money in circulation (M2) tends to increase moderately. The

correlation between GDP and M2 is strongly positive with a high degree of correlation 0.92 respectively.

In summary, these findings reveal various degrees of correlation among these economic factors. Understanding these relationships can provide valuable insights into how changes in one factor may influence others in the economy.)

4.2.2 Multiple Regression Analysis

The study employs a multiple regression analysis to examine the relationship between the dependent variable, which is the CPI, and several independent variables: public debt (PD), Gross Domestic Product (GDP), and Money supply (M2). The multiple regression equation is used to model how changes in these independent variables collectively influence the inflation rate with the help of dependent variables CPI. The use of a multiple regression analysis allows for the identification of potential relationships between the inflation rate and these independent variables while controlling for their interactions. The coefficients assigned to each independent variable in the regression equation provide insights into the direction and magnitude of their impact on the inflation rate. Additionally, the statistical significance of these coefficients helps determine if the relationships are likely not due to random chance. The outcomes of the analysis will contribute to understanding how these economic variables collectively influence inflation. This information can be valuable for policymakers, economists, and stakeholders interested in developing strategies to manage inflation and ensure stable economic conditions.

The test of multiple regression models is given below

Table 9

Regression line analysis of dependent variable CPI and independent variables public debt (PD), GDP, and M2.

Dependent Variables: CPI

Method: Least Squares

Variables	Coefficient	Std.Error	t-statistic	Prob.
C	-24.82514	4.045663	-6.136236	0.0000
Debt	3.46E-06	5.06E-06	0.683615	0.4998
GDP	5.93E-05	3.85E-06	15.40174	0.0000
M2	4.32E-06	1.45E-06	2.978642	0.0059
R-square	0.988538	Mean dependent var		64.15313
Adjusted R-square	0.987309	S.Ddependent var		39.77491
S.E of regression	4.480749	Akaike info critertion		5.953926
Sum of squares	562.1592	Schwarz		6.137143
Log likelihood	-91.26282	Hanna-Quinn criter		6.014658
F-statistic	804.9164	Durbin-watsn on stat		0.485959
Prob(F-statisti)	0.000000			

Source: Authors own calculations

Conclusion, Table 9 Multiple regressions is a statistical analysis technique used to understand the relationship between dependent variable and independent variables. The coefficient values represent how much the dependent variable is expected to change for a one-unit change in the respective independent variable, all other variables being held constant, the results of our regression analysis, which examines the relationships between independent variables (Debt, GDP, and M2) and their impact on the dependent variables (CPI). The constant coefficient in the regression

equation is -24.83, indicating that there are negative autonomous CPI values when there are no independent variables present. In simpler terms, CPI can decrease when no other factors are at play. Furthermore, the coefficients for Debt, GDP, and Money Supply (M2) are as follows: 0.00000346, 0.000059, and 0.0000043, respectively. These values tell us that a one-million change in each of these independent variables leads to a corresponding change of 0.00000346 in CPI for Debt, 0.000059CPI for GDP, and 0.0000043 for Money Supply (M2). This means that these variables have a small but statistically significant influence on CPI at the 0.05 level. Additionally, the R-squared value, which measures how well our model explains the variations in CPI, is 0.9885, indicating that 98.85% of CPI values can be explained by the independent variables Debt, GDP, and M2. In other words, these variables collectively have a strong influence on CPI. Lastly, the adjusted R-squared value, which considers the number of variables in our model, is 0.9873. This suggests that 98.73% of the variation in CPI is explained by the independent variables, taking into account the complexity of the study's parameters. Multiple regression models seem to be highly significant.

CHAPTER- V

MAJOR FINDINGS, CONCLUSION, AND RECOMMENDATIONS

5.1 Major Findings

In the context of Nepal, the utilization of public debt has emerged as a pivotal contributor to the country's socioeconomic progress. As a result, public debt has been a source of financing because Nepal is a developing country with poor economic performance. Nepal is requesting greater financial resources through public debt in order to overcome the expanding budgetary resource shortfall. There are two main sources of public borrowing. Nepal relies on both inside and outside sources of funds. Among the domestic options, treasury bills, special bonds, development bonds, national saving certificates, and employment saving bonds stand out as the most popular choices since the debt programs began, the banking sector of Nepal has taken on a significant share of the country's domestic debt. External sources include the Asian Development Bank, the International Monetary Fund, and the World Bank.

The analysis of the provided dataset spanning from 1990/91 to 2021/22 unveils insights into the borrowing behavior of an unidentified entity, likely a country or organization. The trends in total debt showcase cycles of growth, consolidation, and potential economic shocks, with noteworthy increases in debt during the mid-1990s, mid-2000s, and late 2010s indicating borrowing for infrastructure, stimuli, or crises. Particularly remarkable are the substantial debt surges observed in the fiscal years 2019/20 and 2020/21. The patterns in internal debt exhibit fluctuations with peaks and troughs, while external debt demonstrates significant shifts influenced by economic conditions. Percentage breakdowns offer insights into changes in reliance on internal and external borrowing sources. In-depth analysis underscores the necessity of considering factors such as data integrity, context, economic indicators, and policy dynamics to accurately decipher borrowing behaviors and their underlying drivers. This comprehensive approach is indispensable for a thorough comprehension of the entity's financial decisions and their consequences.

Trends in total debt highlight cycles of growth, consolidation, and potential economic shocks, with significant increases in mid-1990s, mid-2000s, and late 2010s possibly

reflecting borrowing for infrastructure, stimuli, or crises. Notably, 2019/20 and 2020/21 exhibit substantial debt surges.

Internal debt fluctuates with peaks and troughs, while external debt demonstrates shifts influenced by economic conditions. Percentage breakdowns indicate changes in reliance on internal and external borrowing sources, emphasizing the importance of considering data integrity, context, and policy dynamics.

Internal debt components (Treasury Bills, Development Bonds, Non-Specific Bonds, and Specific Bonds) reflect changing investment preferences and borrowing strategies. Treasury Bills saw growth around 2000/01, 2008/09, 2010/11, and 2011/12. Development Bonds exhibited remarkable growth through 2004/05. Non-Specific Bonds peaked in 2000/01, Specific Bonds varied significantly. External debt sources (bilateral and multilateral) show increasing trends, with bilateral sources reflecting diplomatic changes and multilateral sources offering more stability. Correlations between public debt, GDP, and inflation highlight complexities due to economic challenges, policy interventions, and global trends. Fluctuations in both indicators reveal patterns, with peaks in public debt potentially connected to inflation, but not uniformly across the period.

Public Debt, GDP, and M2 (money supply) interplay reveals fluctuations in public debt aligning with GDP shifts, while M2 consistently expands, reflecting economic activities. Relationship between Public Debt and M2 isn't linear due to policies and priorities, with COVID-19 impact seen in increased debt during 2020/21 and ongoing recovery efforts in 2021/22. Growth rates of Total Debt, GDP, and CPI offer insights into economic expansion, responses to crises, and inflation dynamics. Fluctuations in Total Debt growth closely correspond to GDP growth, while CPI growth mirrors inflation oscillations.

The breakdown of CPI composition into Food and Beverages and Non-food and Services highlights consumption patterns and price dynamics influencing inflation trends. Stable proportions of components underscore equilibrium between consumption patterns and market dynamics. The provided dataset emphasizes the importance of a comprehensive approach for accurate interpretation, considering economic indicators, policy decisions, and external factors. This analysis aids understanding of an entity's financial choices and their implications, guiding

policymakers, economists, and analysts. This academic study examines the connections between four important economic factors: the Consumer Price Index (CPI), public debt, Gross Domestic Product (GDP), and broad money supply (M2). CPI and public debt are moderately positively related, with a correlation coefficient of 0.57. This means that as one increases, the other tends to increase as well, but not extremely so. The correlation between CPI and GDP is quite strong at 0.99. This indicates a very high level of positive correlation, suggesting that when CPI goes up, GDP tends to rise significantly. Similarly, the relationship between CPI and broad money supply is also strong, positive relation with a correlation coefficient of 0.94. This means that when CPI increases, the amount of money in circulation (M2) tends to increase substantially. Public debt and GDP are moderately positively correlated, with a coefficient of 0.55. This shows that as public debt increases, GDP tends to increase to some extent. Finally, the correlation between public debt and broad money supply is also moderately positive, with a coefficient of 0.61. This suggests that when public debt goes up, the amount of money in circulation (M2) tends to increase moderately. The relationship between GDP and M2 is also strong positives with a correlation coefficient of 0.92.

In summary, these findings reveal various degrees of correlation among these economic factors. Understanding these relationships can provide valuable insights into how changes in one factor may influence others in the economy.

The strong positive relationship between CPI and broad money supply stood at 0.94. The significance of the model was assessed through the R-squared (R²) value, which stood at 0.9873. This suggests that approximately 98.73% of the variation in CPI can be explained by the changes in the independent variables.

The regression analysis further yielded coefficient was found to be less than 0.05, indicating their statistical significance at the 5% level. Additionally, the regression results highlighted that when dependent variables (CPI) increases by .9878% then independent variables increases by an average of 98.73%. This comprehensive analysis of correlations, coefficients, and significance levels enhances our understanding of the complex relationships between these economic variables, contributing valuable insights for informed decision-making and policy formulation.

5.2 Conclusion

This study investigated the analysis of public debt sources and composition while investigating its impact on inflation within the Nepalese economy. Conducted using a descriptive and analytical research design, the study drew on secondary data collected from published sources spanning the years 1990/91 to 2021/22. Data was organized using Excel and analyzed using Eviews-12 SV software, employing techniques such as trend analysis, correlation, regression, and t-tests. The study revealed a rising trend in internal debt, initially influenced by grants and later by loans from internal sources like Treasury bills and development bonds. Despite increases in debt, gross domestic product (GDP), and the consumer price index (CPI), the correlation analyses indicated complex relationships with varying degrees of correlation, both negative and positive.

The findings showed a moderate level positive correlation (0.57) .Between CPI and public debt, suggesting limited impact of debt on inflation. Correlations between public debt, GDP, and broad money supply (M2), indicated significant interplay with moderate to high levels of correlation. The regression analysis further confirmed that changes in these variables significantly influenced the inflation rate. However, the results also pointed out that broad money supply had meaningful effect on inflation. This study has enriched our understanding of the intricate relationships between economic variables in the Nepalese context, offering valuable insights for policymakers and analysts. As a comprehensive exploration of these relationships, the study contributes to informed decision-making and aids in formulating effective economic policies that consider the interconnectedness of various economic indicators. The study found that when we look at the connection between Public Debt (PD), Gross Domestic Product (GDP), and the Money Supply (M2) with the Consumer Price Index (CPI), there is a significant relationship at a 0.05 confidence level. However, it's important to note that this relationship is based on a limited number of independent variables. It's possible that the situation or results could change when we include a larger number of variables in the analysis. Several national and international factors affects by inflation as well as publics debt. Reviews of literatures (National and International) found a result that public debt and inflation are inter connections of each other's. Measurement of inflation with, through of CPI and conclude that, the impact of public debt on inflation is found.

5.3 Recommendations

Here are the suggestions based on what we discovered and concluded in the study.

1. **Debt Reduction Strategies:** The study indicates that the country's debt has shown a consistent increasing trend over the study period. Particularly, the share of internal debt has been observed to outweigh that of external debt. To address this concern, the country should proactively implement comprehensive debt reduction strategies. This could involve prioritizing fiscal discipline, streamlining government spending, and exploring avenues for generating revenue. By actively working towards decreasing the debt burden, the country can enhance its fiscal health and reduce the potential risks associated with high debt levels.
2. **Diversified External Funding Sources:** Given the study's observation of a larger proportion of internal debt in the debt portfolio, the government should seek to diversify its external funding sources. While external borrowing is necessary for development and growth, a strategic shift towards securing more grants rather than loans could prove beneficial. The government should engage in diplomatic efforts to strengthen relationships with international donor agencies and bilateral partners, fostering an environment conducive to securing grants for development projects. This approach would not only reduce the reliance on debt but also enhance the sustainability of the country's fiscal policies.
3. **Enhanced Debt Management Framework:** To effectively manage the growing debt, the country should establish an enhanced debt management framework. This framework should encompass transparent reporting mechanisms, efficient utilization of borrowed funds, and rigorous monitoring of debt repayment schedules. By adopting a prudent debt management strategy, the government can optimize the utilization of funds, minimize interest costs, and ensure that borrowed resources are channeled towards productive investments that contribute to economic growth.
4. **Sustainable Economic Growth:** The study's insights underscore the importance of achieving sustainable economic growth to manage the impact of debt on key economic indicators. The government should prioritize policies that stimulate economic expansion while carefully managing the accumulation

of debt. By fostering an environment conducive to private sector growth, encouraging foreign direct investment, and promoting exports, the country can diversify its revenue sources and create a solid foundation for long-term economic prosperity.

5. **Regular Data Monitoring and Analysis:** To make informed decisions, it is imperative for the government to maintain a robust data monitoring and analysis mechanism. Regularly updating and analyzing economic indicators such as debt levels, GDP growth, inflation rates, and external funding sources will enable the government to promptly identify emerging trends and challenges. This proactive approach will facilitate the formulation of timely policy interventions and adjustments to ensure sustainable economic development.

Incorporating these recommendations into the country's economic policies and strategies will contribute to a more resilient and sustainable fiscal landscape. By focusing on prudent debt management, diversification of funding sources, and fostering economic growth, the government can navigate the complexities of borrowing behavior and debt dynamics while safeguarding the nation's financial well-being.

5.4 Directions for Future Research

While this study provides valuable insights into the borrowing behavior and its impact on key economic indicators, future research could explore a broader set of independent variables to enhance the depth of analysis. Investigating additional factors such as trade balances, fiscal policies, and external market conditions could offer a more comprehensive understanding of debt dynamics. Furthermore, adopting advanced econometric models beyond multiple regression and correlations, such as panel data analysis or time series modeling, could yield more refined and nuanced results, contributing to a deeper comprehension of the complex interplay between borrowing behaviors and economic indicators.

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Appendix-I

Source of Debt and Portion of Debt out of Total Debt (Rs. in Millions)

Fiscal year	Total debt	Internal Debt	External Debt	% Int. Debt	%Ext. Debt
1990/91	10809.4	4552.7	6256.7	42.12	57.88
1991/92	8895.7	2078.8	6816.9	23.37	76.63
1992/93	8540.9	1620	6920.9	18.97	81.03
1993/94	10983.6	1820	9163.6	16.57	83.43
1994/95	9212.3	1900	7312.3	20.62	79.38
1995/96	11663.9	2200	9463.9	18.86	81.14
1996/97	12043.6	3000	9043.6	24.91	75.09
1997/98	14454.4	3400	11054.4	23.52	76.48
1998/99	16562.4	4710	11852.4	28.44	71.56
1999/00	17312.2	5500	11812.2	31.77	68.23
2000/01	19044	7000	12044	36.76	63.24
2001/02	15698.7	8000	7698.7	50.96	49.04
2002/03	13426.4	8880	4546.4	66.14	33.86
2003/04	13236.8	5607.8	7629	42.37	57.63
2004/05	18204.1	8938.1	9266	49.10	50.90
2005/06	20048.6	11834.2	8214.4	59.03	40.97
2006/07	27946.8	17892.3	10053.5	64.02	35.97
2007/08	29476.3	20496.4	8979.9	69.54	30.46
2008/09	28386	18417.1	9968.9	64.88	35.12
2009/10	41137.4	29914	11223.5	72.72	27.28
2010/11	54591.6	42515.8	12075.6	77.88	22.12
2011/12	47502	36418.7	11083	76.67	23.33
2012/13	31012	19043	11969.1	61.41	38.60
2013/14	37982	19983	17998.9	52.61	47.39
2014/15	68039	42423	25615.8	62.35	37.65
2015/16	121003	87775	33228	72.54	27.46
2016/17	147360	88338	59022	59.95	40.05
2017/18	236984	144751	92233	61.08	38.92
2018/19	220755	96382	124373	43.66	56.34
2019/20	1139796	440047	699749	38.61	61.39
2020/21	173763.7	80294.16	93469.53	46.21	53.79
2021/22	201329.6	98744.93	102584.7	49.05	50.95

Source: Nepal Rastra Bank 2022

Appendix-II

Composition of Internal Debt (Rs. in Million) and Portion of out of Total Debt.

Fiscal Year	T-bill	Development Bond	NSB	SB	CSB	FEB	Total Int. Debt
1990/91	2351.0	5482.3	3646.5	9376.1	0.0	0.0	20855.9
1991/92	3483.2	5132.2	4546.3	10073.2	0.0	0.0	23234.9
1992/93	4403.2	5132.2	4901.5	11019.1	0.0	0.0	25456.0
1993/94	5216.3	4732.2	5691.5	14991.2	0.0	0.0	30631.2
1994/95	6392.5	4122.2	6076.4	15466.8	0.0	0.0	32057.9
1995/96	7142.5	3672.2	7376.5	16050.6	0.0	0.0	34241.8
1996/97	8092.5	3042.2	8736.5	16019.6	0.0	0.0	35890.8
1997/98	9182.5	3302.2	9886.4	16035.5	0.0	0.0	38406.6
1998/99	17586.9	3872.2	10426.4	17784.2	0.0	0.0	49669.7
1999/00	21026.9	4262.2	11526.5	17541.4	0.0	0.0	54357.0
2000/01	27610.8	5962.3	12476.4	13994.3	0.0	0.0	60043.8
2001/02	41106.5	11090.7	11536.1	9259.3	628.1	0.0	73620.7
2002/03	46844.9	13090.7	10659.9	9621.7	931.1	0.0	81148.3
2003/04	49429.6	17549.2	9029.8	8946.2	1178.9	0.0	86133.7
2004/05	51383.1	19999.2	6576.8	8176.3	1428.9	0.0	87564.3
2005/06	62970.3	17959.2	3876.8	3469.8	1678.9	0.0	89954.9
2006/07	74445.3	19177.1	1516.9	2773.5	1391.0	0.0	99303.8
2007/08	85033.0	21735.4	1116.9	339.4	3014.4	0.0	111239.1
2008/09	86515.0	29478.5	216.9	229.6	4433.6	0.0	120873.7
2009/10	102043.7	35519.4	0.0	169.7	5122.9	4.0	142859.7
2010/11	120340.7	43519.4	10680.0	158.0	4622.9	7.4	179328.4
2011/12	131624.1	57519.4	15680.0	157.6	4123.1	16.0	209120.2
2012/13	136468.1	51610.9	15680.0	0.0	3183.8	58.9	207001.7
2013/14	136468.1	47110.9	16586.5	0.0	1516.7	135.4	201817.6
2014/15	119858.1	57070.0	16586.5	0.0	3056.2	215.0	196785.8
2015/16	116059.1	108900.0	906.5	0.0	7806.2	486.2	234157.9
2016/17	110409.3	163900.1	906.5	0.0	7965.2	529.7	283710.8
2017/18	144847.9	235900.0	906.4	0.0	8716.3	528.0	390898.6
2018/19	146792.9	297347.0	0.0	0.0	8376.1	454.6	452970.6
2019/20	215218.1	389947.0	0.0	0.0	7641.9	404.9	613211.9
2020/21	279591.5	513947.0	0.0	0.0	6595.9	185.7	800320.1
2021/22	354508.0	620447.0	0.0	0.0	9140.0	190.2	984285.2

Source: Nepal Rastra Bank 2022

Appendix-III

External Debt by Sources (Rs. Millions)

Fiscal Years	Total Debt	Bilateral Sources	Multilateral Sources	% BD of TD	% of MD of TD
1990/91	5990	2939.9	3050.1	49.08	50.92
1991/92	7800.4	3597.3	4203.1	46.12	53.88
1992/93	9235.6	3638.5	5597.1	39.40	60.60
1993/94	11557.2	2627.1	8930.1	22.73	77.27
1994/95	47148.4	39887.7	7260.7	84.60	15.40
1995/96	14289	3533.3	10755.7	24.73	75.27
1996/97	15031.9	6012.7	9019.2	40.00	60.00
1997/98	15993.3	5833.9	10159.4	36.48	63.52
1998/99	5048.3	488.3	4560	9.67	90.33
1999/00	7587.8	0	7587.8	0.00	100.00
2000/01	16997.9	3449.9	13548	20.30	79.70
2001/02	9887.5	1146.5	8741	11.60	88.40
2002/03	15845.1	129.3	15715.8	0.82	99.18
2003/04	14781	0	14781	0.00	100.00
2004/05	12759.6	0	12759.6	0.00	100.00
2005/06	2659.9	0	2659.9	0.00	100.00
2006/07	6162.7	0	6162.7	0.00	100.00
2007/08	8122	7485.5	636.5	92.16	7.84
2008/09	4879.5	3541.5	1338	72.58	27.42
2009/10	26351.2	0	26351.2	0.00	100.00
2010/11	35062.9	700	34362.9	2.00	98.00
2011/12	39841.9	21453	18388.9	53.85	46.15
2012/13	47566.8	1521	46045.8	3.20	96.80
2013/14	60526	6587	53939	10.88	89.12
2014/15	134216	98029	36187.2	73.04	26.96
2015/16	116395	44757	71638	38.45	61.55
2016/17	152568	51287.4	101281	33.62	66.38
2017/18	117094	0	117094	0.00	100.00
2018/19	104827	0	104827	0.00	100.00
2019/20	90090.7	333	89757.7	0.37	99.63
2020/21	897577	0	897577	0.00	100.00
2021/22	1062445	1047	1061398	0.10	99.90

Source: Nepal Rastra Bank 2022

Appendix-IV

Public Debt of % GDP and Inflation Rate

Fiscal Year	Public Debt% as GDP	Inflation%
1990/91	0.9	15.56
1991/92	1.12	17.15
1992/93	1.28	7.51
1993/94	1.48	8.35
1994/95	1.39	7.62
1995/96	1.68	9.22
1996/97	4.6	8.1
1997/98	4.98	8.33
1998/99	5.01	11.38
1999/00	4.72	3.39
2000/01	4.3	2.44
2001/02	3.41	2.9
2002/03	2.72	4.74
2003/04	2.36	3.96
2004/05	3.08	4.45
2005/06	3.05	7.96
2006/07	3.83	6.21
2007/08	3.61	6.68
2008/09	2.86	12.62
2009/10	3.52	9.57
2010/11	4.04	9.57
2011/12	3.11	8.31
2012/13	1.83	9.84
2013/14	2.11	9.08
2014/15	3.35	7.21
2015/16	3.36	9.94
2016/17	5.57	4.45
2017/18	5.89	4.15
2018/19	28.24	4.64
2019/20	30.25	6.15
2020/21	38.05	3.6
2021/22	41.4	6.32

Source: Nepal Rastra Bank 2022

Appendix-V

Composition of Public Debt, GDP, and M2

Fiscal year	Public Debt	GDP (Million)	M2
1990/91	5990	666500	37,712.50
1991/92	7800.4	693900	45,670.50
1992/93	9235.6	720600	58,322.50
1993/94	11557.2	779800	69,777.10
1994/95	11249.4	806900	80,984.70
1995/96	14289	849900	92,652.20
1996/97	25899.3	894600	103,720.60
1997/98	123439	921000	126,462.60
1998/99	5048.3	962200	152,800.20
1999/00	7587.8	1021100	186,120.80
2000/01	16997.9	1078600	214,454.20
2001/02	9887.5	1079900	223,988.30
2002/03	15845.1	1122500	245,911.20
2003/04	14781	1175000	277,306.10
2004/05	12759.6	1215900	300,440.00
2005/06	2659.9	1256800	346,824.10
2006/07	6162.7	1299700	395,518.20
2007/08	8122	1379000	495,377.10
2008/09	4879.5	1441500	630,512.20
2009/10	26351.2	1511000	719,599.10
2010/11	35062.9	1562700	921,320.10
2011/12	39841.9	1632000	1,130,302.30
2012/13	47566.8	1689600	1,315,376.30
2013/14	60526	1791100	1,565,967.20
2014/15	134216	1862400	1,877,801.50
2015/16	116395	1870400	2,244,578.60
2016/17	152569	2038300	2,591,702.00
2017/18	117094	2193700	3,094,466.60
2018/19	104827	2339700	3,582,137.70
2019/20	90090.7	2284300	4230969.8
2020/21	897577	2394800	5154853.2
2021/22	1061398	2529200	5505400.8

Source: Nepal Rastra Bank 2022

Appendix-VI

Composition of Growth Rate of Total debt and Growth GDP

Fiscal year	Growth Rate of Total debt	Growth GDP
1990/91	56.1	16.39
1991/92	17.2	24.19
1992/93	19.9	14.71
1993/94	17.5	16.21
1994/95	9.4	9.99
1995/96	11.9	13.57
1996/97	3.5	12.7
1997/98	18.8	7.25
1998/99	9.8	13.69
1999/00	11.8	10.95
2000/01	6.8	16.35
2001/02	12.3	4.06
2002/03	3.1	7.14
2003/04	5.3	9.04
2004/05	-3.7	9.81
2005/06	5.4	10.97
2006/07	-2.5	11.27
2007/08	14.3	12.07
2008/09	10.2	21.16
2009/10	0.3	20.69
2010/11	10	3.42
2011/12	18.1	12.52
2012/13	4.3	10.86
2013/14	1.5	14.53
2014/15	-1.6	8.56
2015/16	15.3	7.61
2016/17	12	17.98
2017/18	31.3	12.31
2018/19	14.3	11.66
2019/20	36.2	0.77
2020/21	21.5	9.99
2021/22	16	13.43

Source: Nepal Rasra Bank 2022

Appendix-VII

Composition of CPI, Food and Beverage and Non-food and Services

Fiscal year	CPI	Food and beverages	Non-food and services
1990/91	16.1	13.6	18.8
1991/92	19.5	16.9	21.5
1992/93	21.2	18	24.4
1993/94	23.1	19.6	26.7
1994/95	24.9	21	28.8
1995/96	26.9	22.9	30.7
1996/97	29.1	24.8	33.1
1997/98	31.5	26.7	36.1
1998/99	35.1	31	38.2
1999/00	36.3	31.2	40.9
2000/01	37.2	30.5	44.2
2001/02	38.3	31.6	45.2
2002/03	40.1	33	47.4
2003/04	41.7	34.1	49.7
2004/05	43.6	35.4	52.2
2005/06	47.1	38.2	56.4
2006/07	49.8	40.9	59.2
2007/08	53.2	44.7	61.6
2008/09	59.9	52.4	67.2
2009/10	65.6	60.4	70.4
2010/11	71.9	69.3	74.3
2011/12	77.8	74.6	80.9
2012/13	85.5	81.7	89.1
2013/14	93.3	91.2	95.1
2014/15	100	100	100
2015/16	109.9	110.9	109.2
2016/17	114.8	113	116.3
2017/18	119.6	116.1	122.4
2018/19	125.1	119.7	129.6
2019/20	132.8	129.5	135.5
2020/21	137.6	136	138.9
2021/22	144.4	142	146.3

Source: Nepal Rastra Bank 2022

Appendix

Table 8 Result of multiple correlation result

	CPI	DEBT	GDP	M2
CPI	1.000000	0.576930	0.991731	0.944103
DEBT	0.576930	1.000000	0.550535	0.619339
GDP	0.991731	0.550535	1.000000	0.925468
M2	0.944103	0.619339	0.925468	1.000000

Source: Authors Own Calculations

Table 9 Result of Multiples regression analysis.

Dependent Variable: CPI
 Method: Least Squares
 Date: 09/18/23 Time: 11:20
 Sample: 1 32
 Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-24.82514	4.045663	-6.136236	0.0000
DEBT	3.46E-06	5.06E-06	0.683615	0.4998
GDP	5.93E-05	3.85E-06	15.40174	0.0000
M2	4.32E-06	1.45E-06	2.978642	0.0059
R-squared	0.988538	Mean dependent var		64.15313
Adjusted R-squared	0.987309	S.D. dependent var		39.77491
S.E. of regression	4.480749	Akaike info criterion		5.953926
Sum squared resid	562.1592	Schwarz criterion		6.137143
Log likelihood	-91.26282	Hannan-Quinn criter.		6.014658
F-statistic	804.9164	Durbin-Watson stat		0.485959
Prob(F-statistic)	0.000000			

Sources: Authors own calculations

