



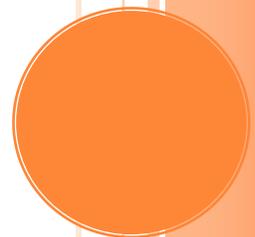
MACROECONOMIC
Analysis & Policy Studies

US Public Debt: Pre- and Post-Covid 19 Analysis

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US PUBLIC DEBT PRE- AND POST-COVID 19 ANALYSES

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ABSTRACT

This paper examines about the evolution of public debt in United States, with a focus on both pre and post Covid analysis. It examines about the monetary and fiscal measures taken to in the times of crisis, focusing on pandemic era and the global financial crisis of 2008, which spiked the government expenditure and debt issuance. Drawing from Modern Money theory perspective, US is the sole issuer of its currency, it can finance its spending through creation of its own currency rather than solely issuing Treasury bonds. It also examines about the long- term risk associated with debt levels, rising interest rates, crowding out effects imposing a burden on the future generation. The paper concludes by recommending policy changes from deficit- targeting to full employment and inflation.

INTRODUCTION

USA is the highest and significant issuer of debt. Debt refers to the total amount of money by the US government that is owed to their lender. Every year USA spends more than it earns resulting in a deficit. Currently, USA's debt is over \$36trillion. It represents 122%of the USA's GDP and keeps on increasing by about \$1trillion every 3 months. The public debt plays a key role in financial the budget deficits and economic crises

Historically, the USA debt has spiked due to major crisis. The debt to GDP ratio is used to measure a country's debt. The major accumulation commenced with the American Revolutionary war by Michael Hillegas after the country's formation in 1766. Between 1941 -1946, the state experienced a significant increase in debt from 42% to 106% due to the increase in government spending as the government was financing for the war. Post

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World war, the debt declined to 23% in the year 1974. The decline was driven by the strong economic growth where the growth rate to GDP exceeded the interest rates on the government debt which reduced the debt burden. The debt spiked during 1980's due the expansionary fiscal policy where there was cut in taxes and increased in government spending towards the military. In contrast, there was a decline in the debt to GDP ratio which was driven by contraction in fiscal policy [increase in tax and decrease in the government spending] followed by an economic boom in the 1990's. The economy took a downturn in the year 2008 marked as the global financial crisis and Covid 19 pandemic in 2020. The US economy entered into recession followed with high unemployment rates. These economic shocks led to the federal government carrying out expansionary fiscal policy to stabilize the aggregate demand, protect job and support the economy for its recovery.

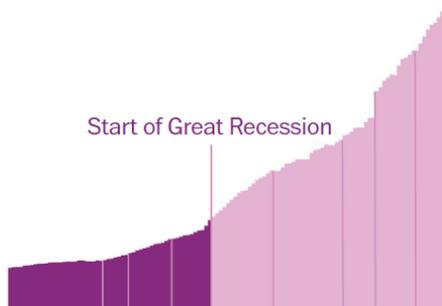
PRE COVID ANALYSIS - TRENDS IN PUBLIC DEBT

From the end of the end of 2008 till the end of the fiscal year 2019, the amount of public debt has almost tripled and doubled as a percentage of GDP. Public debt is measure by which the government borrowings affect the availability of money to the private sector and the other borrowers. During the years of 2007-2009, the US economy experienced a recession. This was marked by the global financial crisis, a severe economic crisis that was triggered by the collapse of the US housing market as well the financial market. The recession dramatically expanded the public debt to \$10.1 trillion due to 2 major reasons. Firstly, a significant drop in taxes because of the reduced economic activity resulting in low income in the private sector. Secondly, this economic shock had led to loss of jobs resulting in high unemployment rate. To address this issue, the federal government increased its spending on the unemployment benefit relied programmes to help the ones who lost their jobs. The Congress and then President Barack Obama enacted a fiscal relief measure including the American Recovery and Reinvestment Act [ARRA]. They enacted about \$2trillion in the emergency measures to respond to the crisis.

In 2009, the federal revenues sharply declined, pushing the deficits to \$1.4 trillion dollars and continued to fall. The debt rose from 39% GDP in the end 2008 to 70 %of GDP in

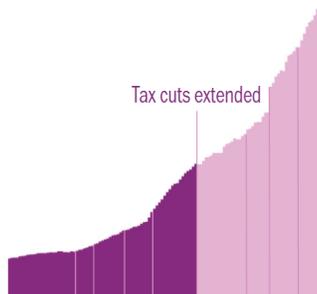
2012. During the 2012-2019, the debt rose by 6%. In the midst of the recovery, the bush tax era was set to expire. President Obama agreed to make the tax cuts permanent by extending the tax to all but the highest income earners leading to a debt of \$16.8 trillion. When the economy was going through the recession in 2008, the debt to GDP ratio was 40%. In order to boost the economy, the federal government adopted a stimulus relief package of \$800 billion along with the existing tax and spending policies that led to 4 years of trillion dollar deficit for the US. This quickly escalated the debt to 78% of GDP which was almost twice the pre- recession level in 2013.

Great Recession and response | Dec. 1, 2008



\$10.1 trillion

Obama-Republican deal to extend Bush tax cuts | Jan. 1, 2013



\$16.8 trillion

FIGURE 1 – SOURCE: Washington Post

In the second quarter of 2015 -16, the debt to GDP ratio has quickly increased 2.9% and the year 2016 recorded the highest debt to GDP ratio since the post-World War II.

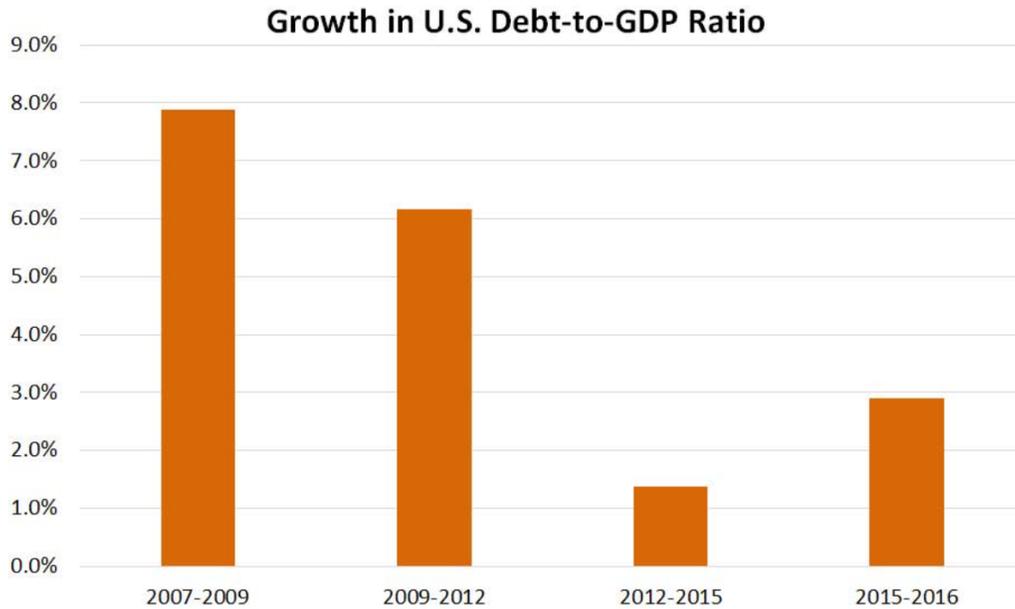


Figure 2 – SOURCE – Federal Reserve Bank of St. Louis

In 2018, the fiscal deficit was around \$782 billion. The primary deficit is the key driver in the growth of the debt to GDP ratio. The ratio increased from 3.5 % in 2017 to 3.9%. This year was the third consecutive year in which the federal budget increased relative of nation’s GDP.

The increase was due to the increase in outlays which was up by 3%. The federal government increased its spending mainly on 3 major programmes which is the social security, Medicare spending and Medicaid. The net interest rate on the public debt also increased by 20% [62 billion] that drove up the inflation. The US Treasury department issues government bonds called as Treasury Inflation protected securities [TIPS]. These bonds automatically adjust their value to keep up the inflation. In order to maintain low and stable inflation rates, the Treasury department increased the face value of these bonds based on the changes in the consumer price index. This adjustment ensures that the investors of TIPS are protected from inflation as both the bond value and interest they earn increase, when the price rises. This adjustment led to an increase from \$33 billion in 2017 to \$60 billion in 2018. The remaining increase was attributed to the increasing interest rates and the large federal debt in 2018. Rest of the spending in the debt for 2018 was attributed to military programmes, activities related to disaster relief, subsidies for

health insurance etc. In the absence of proper policy reform, the debt to GDP ratio is continues to grow as the government expenditures and interest rates grow more rapidly compared to the revenue. A key driver for the growing expenditure is the shift in the demographics. The aging population, coupled with increase in life expectancy is anticipated to put pressure on the Social security and healthcare systems resulting in the increase in the fiscal burden.

DEBT HELD BY SECTORS

The growing national debt was also increasing due to the high levels of leveraging to the financial and household sector. This was seen in the collapse of the Lehman Brothers investment bank that went bankrupt during the critical phase of the global recession. This was mainly triggered due to high levels of leveraging and debt particularly in the financial and household sector.

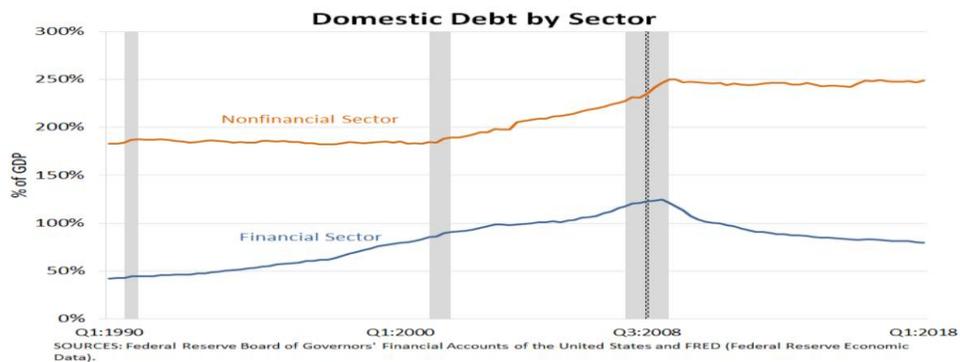


FIGURE 3 – Federal bank of St. Louis

Although, both the financial sector and non-financial sectors increased their debts before the crisis hit, the financial sector deleveraged after the collapse of the Lehman brothers. Given that the crisis was attributed due to the dysfunction of the financial institution, a policy response was taken to tighten the leverage limit of the financial institutions. The large financial institutions should increase their capital buffers and limit the exposure of risk contributing in the reduction of leverage to the private financial sector [firms]. The private sector debt seen more risk prone when compared to public sector debt as the firms and households are the users of currency. The decline in leveraging to the financial sector

can help in stability but it should be followed with sufficient public spending in order to sustain the aggregate demand. The debt to GDP ratio for the non-financial sector have remained constant around 250%.

NON-FINANCIAL SECTOR – Households, Government and Businesses

While the business debt has increased modestly and has remained around 60 %of GDP, we can see striking differences in the household and government. The household debt has drastically declined from 100% during the GFC to 76% due to the fall in mortgage debt and the fall of the housing market. This decline shows that the private sector is deleveraging where the household is reducing their financial liabilities in response to the assets losses, stagnant wages.

On the other hand, the government debt rose from 60% pre-recession to close to 100 %in the Q1 of 2018. Given that the government is the issuer of its own currency, it must spend more [running deficits] to the fill the gap and keep the economy stable.

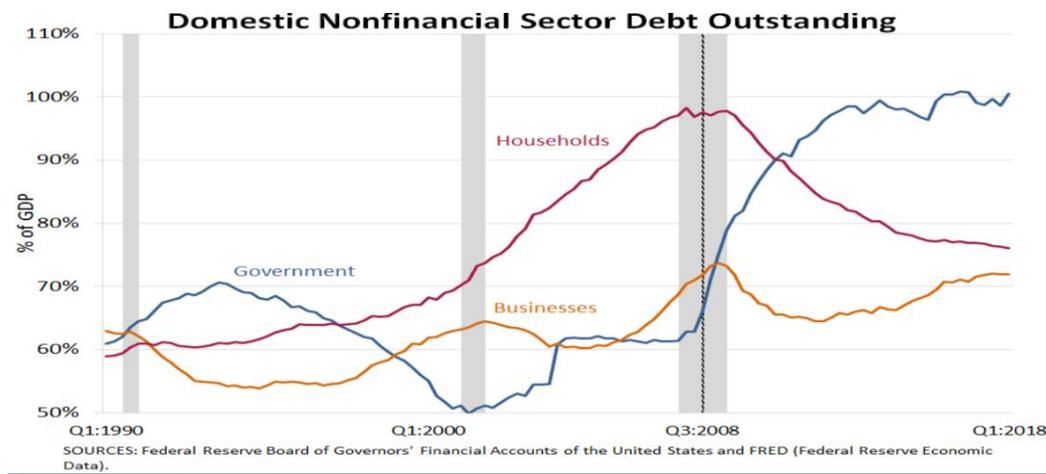


Figure 5 – SOURCE: Federal bank of St. Louis

INTEREST RATES

Projected Interest Rates, 1976–2023

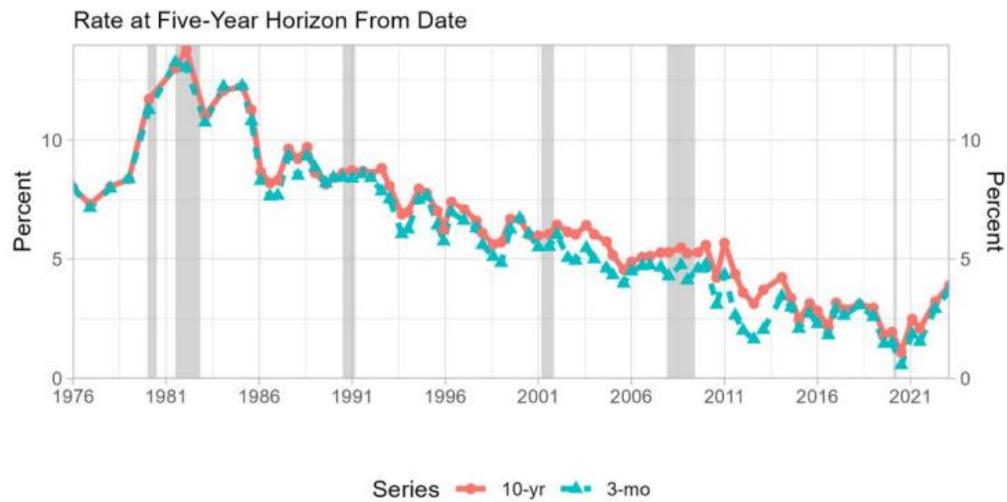


FIGURE 6 - Data Source: Authors' calculations of data from Gurkaynak, Sack, and Wright (2006)

[Shaded area – Recession]

Based on the Congressional budget office [CBO], there has been a consistent relationship between the rising public debt and high-interest rate levels. Over the 2010-2019 year, the interest rate of 10 years Treasury was averaged around 2.4%. As seen in the diagram, there was a decline in the interest rates that was evident in early 1980's. In late 1970's and early 1980's US was facing a very high level of inflation at 14%. In order to combat with the high inflation, the then federal chair Paul Volcker raised the interest rates [tight monetary policy] to 20%. Once the inflation expectation was broken, they were able to bring down the inflation to maintain it low and stable. But somewhere, this period was marked as the beginning of long deflationary area, making the interest rates to gradually fall. The projected interest rates have declined more than 10% in the early 1980's to less than 5% in the past decade. The expected inflation trended downwards in the 1980 and early 1990's before becoming completely flat. The expected inflation declined from 5% in 1980's to 3% in the middle of 1990's. From 1982-2020, there has been a decline in both long term and short-term interest rates. In short run, the Federal

Reserve may adjust the interest rates in response to the changes in the federal borrowing particularly when such changes influence the prices and unemployment gap. Whereas, the fall in the long-term interest rate were due to the changes in both fiscal policies to adjust the aggregate demand and foreign exchange policies for the emerging markets driving the interest rates down. The private sector has accumulated lots of debts before the time of crisis. Post the crisis, the sector has engaged in deleveraging, where the households started to save more especially the ageing population driving the investment and consumption down. The firms reduced their financial liabilities like debt in order to strengthen their balance sheet and lower the risk. It should be noted that the federal government doesn't face any financial constraint as it's the sole issuer of its own currency. After the global financial crisis and Covid 19, the Fed bank kept the interest rates near to zero.

HOLDERS OF DEBT

Since the onset of the 2008 financial crisis, the Federal Reserve holding of US Treasury securities as a share of GDP has significantly risen. During the period of 1998-2008, these securities were 5% of GDP. But pre Covid period, the securities have increase to 12% of GDP and has nearly reached 22.5% of GDP by the end of 2022. This shows the Federal Reserve engaging in monetary policy known as Quantitative easing. In this process, the Federal Reserve purchases securities like bonds from the commercial bank in exchange of deposit in the commercial banking system. This results in the central bank crediting the reserve account [account held by the commercial bank in the central bank]. This approach is followed in order to inject money into the economy leading to increase in the lending activity and maintain the interest rates at its targeted level. This reflects that the government can issue its own fiat currency under a floating exchange rate. The sovereign government doesn't fall in the trap of the fallacy of composition.

Simultaneously, the foreign holding of US Treasury also increased significantly in the beginning of 2008. The foreign investors increased their overall holding from the level below 4% in the early 2000 to 16% in 2008 and peaked to 36% in the beginning of Covid

and slightly declined to 28% of GDP by the late 2022. The exogenous shock of Covid 19, put a downward pressure on interest rate enabling the expansionary fiscal policy.

The debt held by public from 1976 till the early 2000's remained below 30% of the GDP with some fluctuations. Decline occurred in 1995-2001 as US experienced robust growth in the GDP levels during the second half 1990's due to factors like technological innovations, rise in productivity and boom in the stock market. As the nominal GDP grew, the debt to GDP ratio declined, even when the debt levels remained constant or grew slowly. Post 2008 crisis, government borrowed heavily in order to support the economy. As forecasted, the debt levels rose from 35% of GDP in 2007 to 70% of GDP in 2012.

U.S. Treasury Debt Holdings by Entity, 1976–2022, as a Percentage of Nominal GDP

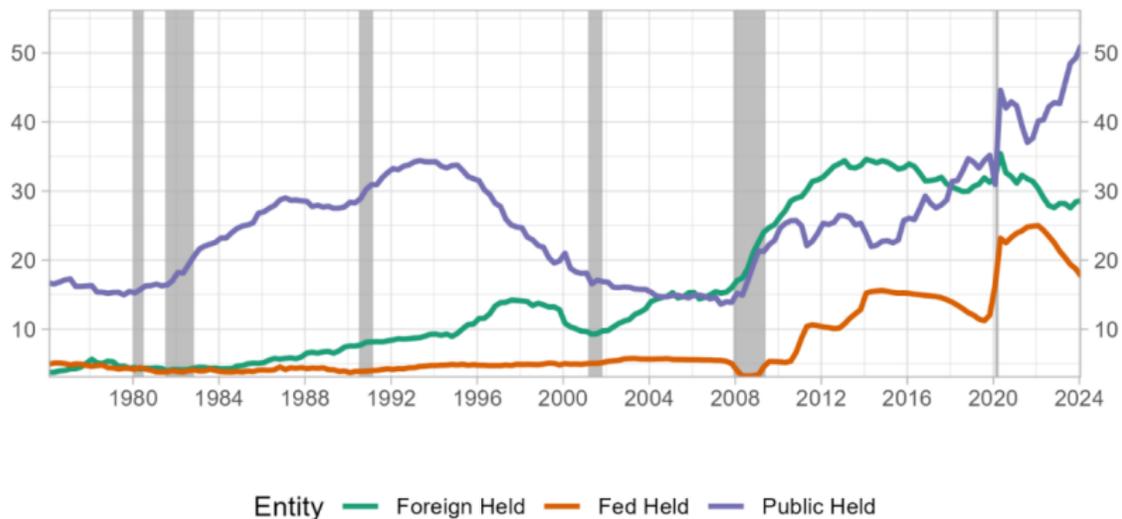


Figure 7 – Source -: Haver Analytics and Gamber and Seliski (GS; 2019). [Shaded Area – Recession]

EXPLOSIVE DEBT GROWTH DURING COVID [2020-2021]

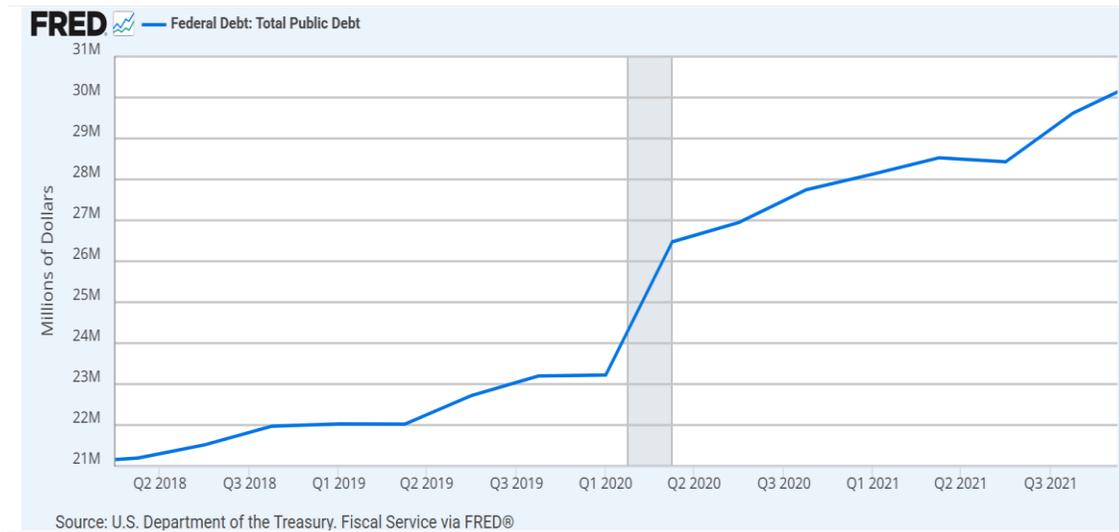


Figure 8- Source - FRED

A period of unprecedented turmoil began in March 2020, when the world's economy began to collapse due to a highly contagious virus called Covid-19. This spread rapidly affecting the public's health as well the global economy. Nations were forced into lockdowns, slowing down production, disrupting the international trade and sending unemployment rates to the high levels. Financial markets experienced historic volatility, consumer demands plummeted, an economic activity contracted sharply. This period for the United States was the onset of extraordinary fiscal intervention with the government deploying massive stimulus relief packages to stabilize the economy. Behind these relief packages, there was huge amount of government borrowing [deficits] that soared up to manage the economy. The Federal debt was relatively stable at 2019 around \$22.7 trillion. However, following the onset of the pandemic, the debt experienced an increase to \$27.7 trillion by the end of 2020 and to \$29.6 trillion by the end of 2021. Overall, the debt grew by \$7 trillion in 2 years – compared to the cumulative increase witnessed over the entire preceding decade. Both money and debt surged in the initial stages of pandemic, continuing to expand at an accelerated rate throughout 2021. The increase in public debt was largely driven by substantial fiscal assistance measures introduced by the federal government in response to the crisis. Notably, this support was financed not through higher taxation, but through the issuance of new debt. As a result, the primary

deficit—which represents the difference between government outlays (excluding interest payments) and revenues—rose sharply from 2.9% of gross domestic product (GDP) in fiscal year 2019 to 13.1% in 2020, before declining to 10.6% in 2021. Concurrently, debt held by the public increased from 79% of GDP at the end of fiscal year 2019 to 97% by the end of 2021.

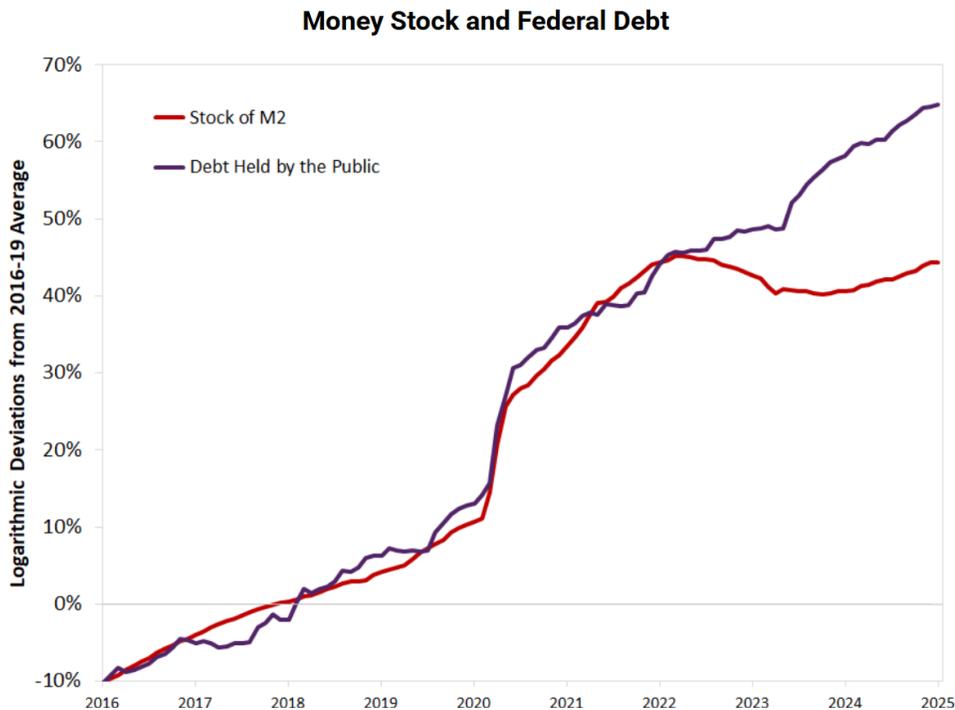


Figure 9 - Source: Federal bank of St. Louis

The above figure shows the growth of M2 and federal debt. M2 includes M1 + Time deposits. During the early stages of the pandemic, both money and debt increased and continued to grow in an accelerated pace through 2021. The increase in debt was primarily contributed to the fiscal assistance provided by the government in response to the crisis. The assistance was not funded by rising taxes but by issuing a new debt. As a result, the primary deficit expanded significantly from 2.9% in 2019 to 13.1% in 2020 and 10.6% in 2021. Public debt also increased from 79% pre pandemic to 97% in 2021.

INTEREST RATES AND FEDERAL RESERVE'S ASSISTANCE

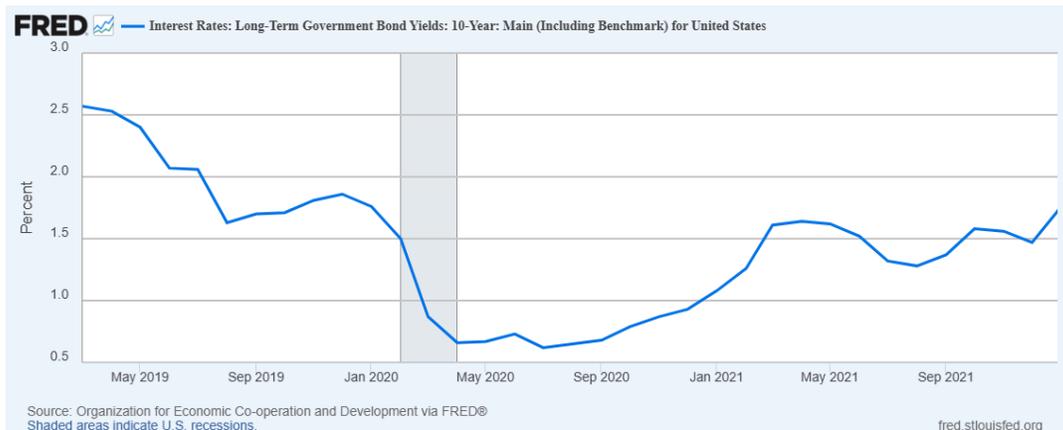


Figure 10- Source: Federal bank of St. Louis

During the time of pandemic, the interest rates of the US bonds particularly the long term securities fell sharply due to the economic uncertainty and central bank intervention surged. Due to the pandemic, US faced a historical contraction. The exogenous shock in the economy pushed the unemployment rate up to 15% and reflecting a sharp downturn in the labour market. Amid the economic uncertainty, private sector consumption spending declined and household sector began to save more as a precautionary response to the worsening economic conditions. Decline in consumption spending put a downward pressure on inflation leading to low interest rates. The private sector had limited investment opportunities, easing the demand for capital. In response to the pandemic, the federal government introduced a large-scale fiscal relief measure, CARES Act, which significantly increased the public spending. The Federal Reserve responded by lowering the federal fund rate near zero, reduced short term interest rate to a range of 0%-0.25% [Zero lower bound], launching aggressive quantitative easing in order to inject liquidity into the markets, purchasing long term securities and mortgage-backed securities for smooth market functioning. One main difference of from previous rounds of QE, is the Feds have purchased securities of different maturities, so that the effect likely won't be concentrating on long term rates. In addition, Feds reduced the reserve requirement, setting it to 0% in March 2020 to ensure the commercial banks had maximum liquidity to encourage lending even during the pandemic to ease credit and support the economy. To

ease the overall liquidity conditions, feds engaged in repurchase transactions [repo]. Feds made \$1 trillion overnight repos available to the auction every day and made an additional 500\$ billion on long term repos available at least once a week. In April 2020, the federal reserve holdings of securities expanded by \$1.2 trillion. To support the pandemic, the fed expanded its balance sheet which surpassed its previous peak in March 2020 and rose by \$7 trillion by May 2020. The Federal Reserve aimed to keep the interest rates near zero until the economy achieves full employment level and a sustained 2% inflation.

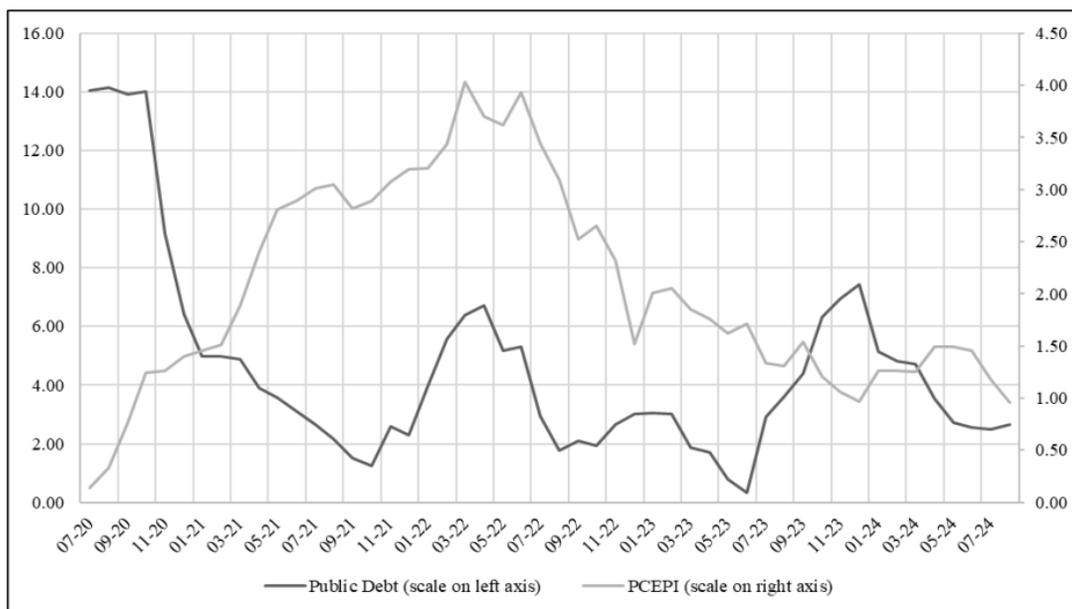


Figure 11 – Source: Data from Fred

The relationship between the public debt and inflation is a key issue in macroeconomics especially during the times of recession, when the government expenditure and fiscal deficits tend to increase. Elevated public debt can influence the inflation in many ways, mainly through fiscal dominance and monetizing the debt. Fiscal dominance was introduced by Thomas Sargent and Neil Wallace, in which the high levels of government debt put pressure on the central banks to adopt accommodative monetary policies such as maintaining low interest rates or expanding the money supply to service the public debt. This kind of setting shifts the central banks focus from inflation targeting towards debt

sustainability. In such scenario, the debt financing government spending put inflationary pressure, when the debt exceeds 90% of the GDP. The risk of inflation becomes more significant when the Federal Reserve had to repay the debt by converting the fiscal deficits into expansionary monetary policy. This phenomenon became relevant in Covid, when the public debt soared up. Olive Blanchard warns of the persistent inflationary threat due to the increasing public debt. The initial analysis in the evidence revealed the rising public debt was tied with the growth of PCEPI [Personal Consumption Expenditure Price Index] around early 2021. The PCEPI reflects the price changes in the basket of goods and service consumed by the US residents, capturing the shift in their spending patterns. This period was aligned with the fiscal interventions aimed to support the recovery of the economy, including the relief packages. These actions put an upward pressure on the consumer demand translating into more quickly into inflationary effects. The quicker transmission of the inflation through public debt is supported by the fiscal dominance theory. Although, by mid-2021, the rate of debt accumulation stabilized, the rising PCEPI indicated the inflationary pressure persisted even after fiscal stimulus was stabilized.

FISCAL AND MONETARY POLICIES

MONETARY POLICY

The pandemic severely affected the US and global economies. In response, the US government under Trump and Biden administration implemented a series of fiscal stimulus measures with an aim to support the economic recovery, providing relief to the individuals, businesses, states. Alongside, the Federal Reserve also implemented aggressive monetary policy tools to stabilize the economy, lowering the borrowing cost and to provide credit to the public as discussed.

By the end of April, approximately 16 million individuals filed for unemployment insurance, marking a historic surge in the levels of unemployment. The sharp rise in unemployment reduced the tax revenue and triggered the automatic stabilizer expenditure [government spending] such as unemployment benefit as well as nutritional assistance

programmes. These programmes led to the expansion of both federal and state budget deficits.

In March 2020, President Donald Trump signed the Coronavirus Aid, Relief and Economic Security Act [CARES] into law. This law estimated to be \$2.3 trillion, aims to provide loans and grants to the businesses and direct cash payments to the individuals and increase funding on the unemployment insurance. It was considered as necessary step to stop the economic collapse, even though it is predicted to increase the federal budget deficits when compared to CBO's projections. Initially, the businesses had to pay back the loan with interest but majority of these loans were forgiven 2023. As Part of CARES, Fed introduced several temporary lending programmes which at present are discontinued. These programmes were funding using the seed capital provided by the Treasury Departments of Exchange stabilization funds. The Feds also engaged in Repo transactions in order to funnel cash into the system. Under this, firms can borrow and lend cash securities on the repo market for a short period of time, usually overnight. The Fed's repo operations made cash available to the primary dealers in exchange for bonds or government backed securities because the interest rates can be impacted due to the disruptions in the market. Fed offered \$100 billion as overnight repo and \$20 billion in two-week repo before the pandemic and also extended the programme during pandemic in terms of giving loans and duration. Federal Reserve created permanent Standing Repo Facility in July 2021 to support the markets in the time of crisis. The following monetary policy programmes:

1. Pay Protection Program Liquid Facility [PPPLF]

The PPPLF enabled banks and eligible lenders to access liquidity from the Fed by pledging Pay check Protection Program (PPP) loans as collateral. This supported small businesses by encouraging banks to issue more PPP loans. The facility was expanded on April 30, 2020, to include a broader range of lenders and was discontinued on July 30, 2021.

2. Corporate Credit Facilities (PMCCF & SMCCF)

To support corporate credit markets, the Fed created two major bond-buying facilities:

- Primary Market Corporate Credit Facility (PMCCF) – facilitated direct corporate bond purchases from issuers.
- Secondary Market Corporate Credit Facility (SMCCF) - purchased existing corporate bonds and bond ETFs in the secondary market.

These programs, launched on March 23, 2020, aimed to reduce borrowing costs for corporations and increase liquidity in credit markets. The Treasury committed \$75 billion in equity support: \$50 billion for PMCCF and \$25 billion for SMCCF. Purchases ceased on December 31, 2020, with a combined authorized capacity of \$750 billion.

3. Term Asset-Backed Securities Loan Facility (TALF)

Revived from its original use during the 2008 financial crisis, TALF was reintroduced on July 28, 2020. It provided up to \$100 billion in loans secured by asset-backed securities (ABS), including those backed by auto loans, student loans, and commercial mortgages. The Treasury provided \$10 billion in credit support through the ESF.

4. Main Street Lending Program –

Launched on March 23, 2020, the MSLP aimed to support small and medium-sized businesses by purchasing up to \$600 billion in loans through a Fed-established SPV. The Fed acquired 95% of each loan, while lenders retained 5%. Eligible firms had fewer than 10,000 employees or revenues below \$2.5 billion. The program was later extended to non-profits and featured deferred interest for one year and principal for two years. The Treasury provided \$75 billion in equity support under the CARES Act.

5. Municipal Liquidity Facility (MLF):

The MLF aimed to support state and local governments by purchasing up to \$500 billion in short-term notes. Eligible issuers included states, large cities/counties, and multistate entities. The Treasury invested \$35 billion via the CARES Act.

6. Primary Dealer Credit Facility (PDCF) & Money Market Mutual Fund Liquidity Facility (MMLF):

Provided loans to primary dealers using securities as collateral. The MMLF offered liquidity to financial institutions to stabilize money market funds. Both had no set lending limit and expired on March 31, 2021. The Treasury backed MMLF with \$10 billion.

7. Commercial Paper Funding Facility (CPFF):

CPFF purchased short-term corporate debt to ensure market liquidity. It was expanded on March 23 and had no purchase cap. The Treasury invested \$10 billion, and the facility ceased purchases on March 31, 2021, though it remained funded until maturity.

FISCAL POLICY

Throughout March and April 2020, the government passed main 3 relief packages and one supplement package.

1. HEREOS ACT (MAY 2020):

The House of Representatives passed \$3.4 Trillion which aimed to provide extensive aid to individuals, businesses. However, the bill did not advance in the Senate and was ultimately not enacted

2. HEALS ACT (JULY 2020)

The Republican Senate Majority proposed \$1 trillion HEALS act but did not pass.

3. Consolidation Appropriation Act- (CAA)

Included \$900 billion in COVID-19 relief as part of a larger government funding bill.

4. Coronavirus Preparedness and Response Supplemental Appropriations Act:

On March 6, 2020, President Donald Trump signed the Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020, also known as Phase One of the U.S. COVID-19 relief packages, into law. \$8.3 billion in emergency funding was approved by this first relief act. Supporting vaccine research and development, giving state and local governments financial support to stop the virus's domestic spread, and aiding international containment efforts were the main goals of the allocations

5. Families First Coronavirus Response Act (FFCRA)

Phase Two of the federal COVID-19 relief efforts, the Families First Coronavirus Response Act (FFCRA), was signed into law on March 18, 2020. A thorough financial response to the growing public health emergency was offered by this legislation. Important clauses included a requirement that companies with fewer than 500 employees provide paid sick leave to COVID-19-affected employees, as well as emergency food assistance for families that relied on free school meals during widespread school closures. The act included tax credits for employers in order to lessen this burden. Furthermore, the FFCRA authorized federal loans to states to strengthen their unemployment insurance systems and provided nearly \$1 billion in supplemental unemployment insurance funding to support state-level initiatives. Additionally, it guaranteed the free provision of COVID-19 testing.

6. American Rescue Plan Act

President Joe Biden signed the American Rescue Plan Act of 2021 into law on March 11, 2021, authorizing a \$1.9 trillion fiscal stimulus package to aid public institutions, businesses, and households during the COVID-19 pandemic. State and local governments received about \$350 billion to cover pandemic-related costs and revenue shortages.

Among the Act's main provisions were:

- Individuals may receive direct payments of up to \$1,400, with phase outs based on income.
- 2021 increase in the Child Tax Credit to between \$3,000 and \$3,600 per child.

- An extra \$300 in weekly federal unemployment insurance through September 5, 2021.
- For qualified households, \$10,200 in unemployment benefits are free from federal taxes.

Major funding was allocated towards K-12 education, CDC vaccines, public transit, child support, emergency rental assistance, support to airline industry etc.

MONETIZING THE DEBT

Government has introduced several stimulus packages to support the economy and help it recover from the damage caused by Covid-19. These reliefs allocated billions of dollars in direct payments, tax breaks, and business subsidies. The unprecedented scale of these fiscal interventions expanded the government's budget deficits. A key question arises, is how these deficits will be financed. The answer is the monetization of debt. In general, government has two ways to finance their deficits. Either by borrowing [issuing debt] or by raising taxes. In both of these cases, the government being the sole issuer of its own currency has to spend its money into existence before collecting it back from the private sector. Another way is through monetizing.

Debt Monetization or printing money refers to the Federal Reserve (Fed) purchasing government securities like Treasury bonds to finance the government spending, effectively turning debt into money. When the government issues bonds to the central bank, the central bank credits the reserve accounts of the commercial banks leading to reserve add in the system. During Covid, the most significant portion of public debt was financed through the Fed Reserve expansionary monetary interventions. This process was carried out through the purchase of large scale of assets by the Fed called as Quantitative Easing. In the beginning of March 2020, the Federal Reserve committed to purchasing substantial amount of U.S Treasury securities and mortgage backed securities eventually obtaining up to \$80 billion in Treasury and \$40 billion/per month in Mortgage-Backed Security.

These purchases were financed by reserves that were credited by the central bank, thereby expanding the money supply and increasing the government borrowing. As previously stated, the Feds lowered the federal fund rate to near zero, making the cost of borrowing for the government very low. With interest rate at zero lower bound, the feds had to rely on balance sheet expansion to support fiscal stimulus. Congress passed fiscal stimulus bills like CARES act, to support the economy. The Treasury issued a debt to the private markets and the Fed then bought much of this debt in the secondary market.

NAVIGATING THE AFTERMATH – POST COVID

	<i>FY 2022</i>	<i>FY 2023</i>	<i>Change</i>
Official Deficit	-5.4	-6.3	-0.8
Deficit Adjusted for Student Loans	-3.9	-7.5	-3.6
Revenues	19.4	16.5	-2.9
Non-Interest Outlays (adjusted)	21.2	21.3	0.2
Major Mandatory Programs	10.1	10.4	0.3
Pandemic-Era Spending	1.9	0.7	-1.2
One-Time Outlays	-0.4	0.5	0.9
Other Non-Interest Spending (adjusted for student loans)	9.6	9.7	0.1
Interest on the Debt	2.1	2.6	0.5

Figure 12: Source – CBO

The public debt continued to grow post Covid from \$29.6 trillion in 2021 up to \$34 trillion in 2024. This trend reflects a continuous mismatch between the growing government expenditures and revenues, driven by interest payments, demographics pressure and structural deficits. The federal budget deficit grew from 5.4% in the year 2022 to 6.3% in 2023. Upon the announcement of President Biden’s student loan forgiveness, which inflated the deficits in 2022 and reduced in 2023, following its cancellation, the actual increase was more noticeably rising from 3.9% of GDP in 2022 to 7.5% in 2023. A decline in revenues explains most of the increase in the deficits. From

the above diagram, revenues increased in 2022 to 19.4% of GDP when compared to 16.3% of GDP in 2018-19. The increase in revenue was mostly due to the individual's income tax collections driven by capital gains amid the strong stock market and delayed inflation adjustment in tax brackets which temporarily pushed the tax payers to a high bracket. In 2023, the revenues as discussed declined to 16.5% of GDP and there were several temporary factors that led to the decline. Firstly, the Internal Revenue service [IRS delayed income tax fillings for both individuals and corporation in California residents in response to the storms and the postponement shifted a substantial portion of the tax revenues into 2024, thereby suppressing the federal receipts of 2023. Secondly, the pandemic era employee retention tax credit refunds rose sharply as the business began to demand for return further driving the revenue down by 0.3% of GDP. Lastly, the higher interest rates lowered the Federal Reserve profits, leading to a decline in Fed remittance to the Treasury from 0.4% in 2022 to 0 in 2023.

The Federal budget is divided into mandatory and discretionary spending and interest payment on debt. CBO identified a major chunk of the debt growth was driven by mandatory spending program particularly, social security, Medicare and Medicaid [these projections are based on the assumption that the current revenue and spending laws remain the same]. The Social Security programmes remained to be the largest federal spending that is projected to rise steadily as a share of GDP. This trend shows the ageing population and the rising cost on healthcare is expected to rise even in the absence of any major changes in the existing fiscal policy. The remaining goes towards discretionary spending which Congress must authorize every year through the appropriation process and debt services. In 2022, 27% of federal spending was directed towards the discretionary programmes. Out of this, the largest share about \$750 billion was allocated to the defence agencies and programmes. Lastly, the rising interest rates have significantly increased the debt servicing costs, increasing the federal outlays by 0.5% of GDP in 2023. By the end of 2024, debt held by public amounted to \$28.2 trillion which represents the 98% of GDP. Under the current laws, the debt held by public is expected to reach an all-time high of 106% of GDP in 4 years and grow by half by 2025.

RIISING INFLATION AND TIGHTENING MONETARY POLICY

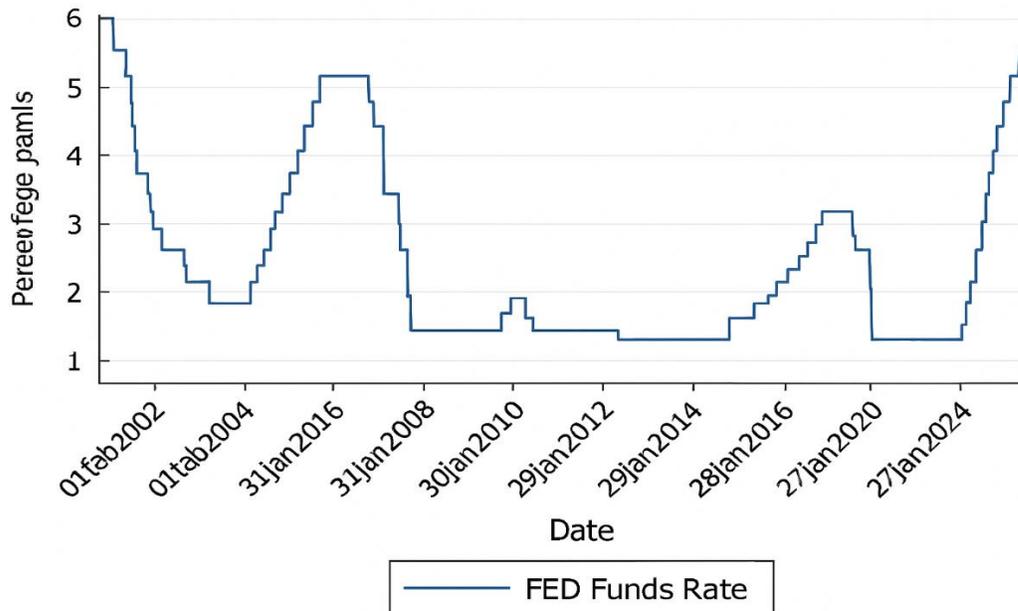


FIGURE 13 – Data from FRED

Following the recovery from the pandemic, the United States experienced a notable acceleration in the inflation which rose gradually from 2021 to sharply rising in 2022. The inflation was mainly driven by a combination of demand and supply side constraints. On the demand side, the massive fiscal stimulus like direct cash transfers, expanded unemployment benefits increased the purchasing power of the households when spending was limited during lockdown. Once the lockdown restrictions eased up, it drove the demand up placing a pressure on the supply chain as they were recovering from global supply chain disruptions. Supply side issues like factories shutting down, labour shortages, shipping delays created roadblocks especially in the goods producing sector. Additionally, there was increase global energy, commodity and food prices which were initially driven by pandemic but later due to the Russia and Ukraine war. US wage growth remained relatively moderate but failed to keep pace with the inflation, resulting in the real loss of wages for the workers. The Feds initially characterized the inflationary pressure as transitory expecting the price levels to become normal as the disruptions ended. Over time, inflation proved to be persistent, prompting the Federal Reserve to

significantly adjust its policy stance. In the beginning of March 2020, the Federal Reserve implemented aggressive monetary tightening cycle, raising the interest rate from near levels during the pandemic to 5.5% by July 2023, and the highest over two decades. This monetary policy aimed to curb inflation but did put an implication on the federal government's debt burden. As the interest rates rose, the cost of servicing the public debt rose substantially. The net interest payments on federal debt rose by \$659 billion, equivalent to 2.5% of GDP in the year 2023 and it is expected to increase till 7.5% over the next 3 decades if the current fiscal and monetary policy continue to exist. The growing burden of interest rates raises a concern on the long-term sustainability on US long-term public finances. According to CBO, the interest rates are going to rise up to 3.2% of GDP in 2026, exceeding the previous peak in relation to the size of the economy.

In response to the Covid, Federal Reserve engaged in quantitative easing in order to inject reserves into the system and expand the balance sheet. The balance sheet grew from \$4trillion in 2020 to \$8-\$9 trillion by March 2022. By 2022, US had high inflation, prompting the Fed to shift from accommodative to tightening monetary policy to control inflation. Fed ended QE by March 2022 and implemented QT by June 2022 alongside the interest rate hikes in order to drain the excess liquidity/reserves in the system and cool down the economy. Quantitative tightening involves shrinking the central bank's balance sheet either by selling the assets into the market or by allowing the government bonds to mature without reinvesting. In this case, the bank allowed up to \$95 billion in securities per month in which \$60 billion in treasuries and \$35 billion in Mortgage-Backed Security to mature without reinvestment. The initial effect of Quantitative tightening was going steady but several complications and financial events took place in 2023 that complicated this process. Firstly, during the U.S. debt ceiling standoff in mid-2023, the Treasury General Account (TGA) fell drastically, injecting short-term liquidity into the banking system. After the ceiling was resolved, Treasury rebuilt the TGA that withdrew liquidity and caused a drop in both bank reserves and the Fed's overnight reverse repo facility usage. In March 2023, the country experienced a banking crisis as it came to light that many US banks were holding large amounts of longer duration Treasury bonds. These bonds lost 30% of their value as the prices drastically dropped due to the Fed no longer

being the buyer of the last resort. When this crisis began, the Fed had to revert back to a form of Quantitative easing by opening Bank Term Funding Program [BTF] which almost brought \$500 billion of bonds from distressed banks. Once the stability was restored, Quantitative tightening resumed at a normal pace. On May 1st 2024, Federal Reserve announced a reduction in the amount of bonds they were allowing to roll off from \$35 billion to \$25 billion per month. By August 2023, the Federal Reserve's balance sheet had declined to approximately \$8.19 trillion, reflecting the ongoing process of Quantitative Tightening. By mid-2025, Fed's balance sheet reduced from the peak of 35% of GDP in 2022 to 28%. Majority of reduction came from the Treasury securities, which had more successful runoff than Mortgage-backed securities as shown in figure 14a. The elevated mortgage rates have reduced the demand for new mortgage loans, which in turn depressed the market for Mortgage-backed securities that drove the prices down. A sharp decline in Mortgage-backed securities, has put an upward pressure on the yield, making it a problem in the existing complicated environment. In order to prevent volatility, Fed has slowed the pace of Mortgage-backed securities reduction as shown in fig 14b. By allowing Treasury securities to mature and roll off its balance sheet, the Fed is effectively reducing its holdings of government debt, shifting more of the financing burden back to the private market.

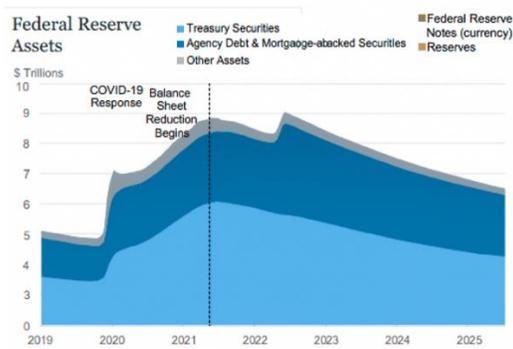


FIGURE 14A

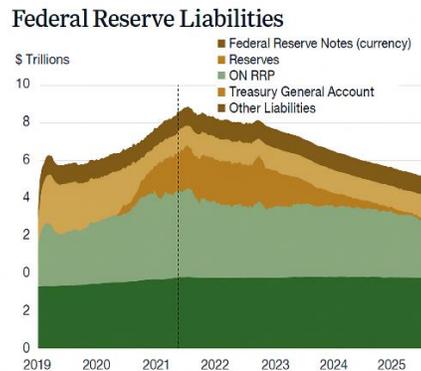


FIG 14B

Source - Board of Governors of Federal reserve system.

CROWDING OUT EFFECT

The national debt will exceed its historic peak in the upcoming decade

Debt Held by the Public (% of GDP)

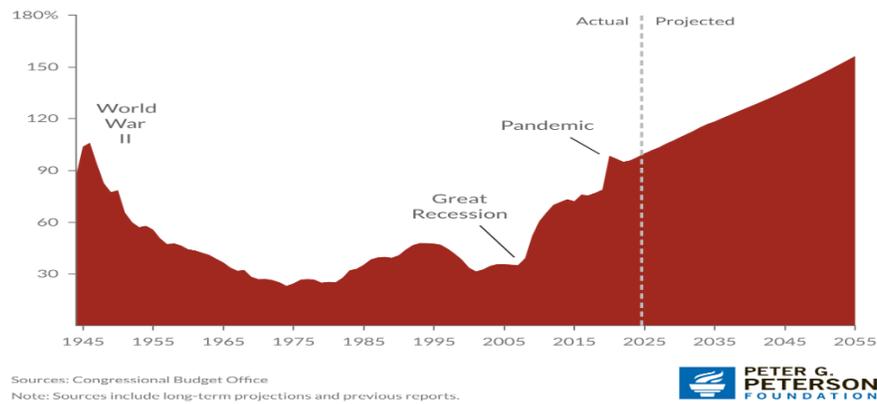


FIG 15: SOURCE – PETER G. PETERSON FOUNDATION

The federal government is expected to borrow \$1.9 trillion in 2025 and the annual deficits are projected to grow around \$2.5 trillion by 2035. One of the major consequences of issuing large amounts of debt is, it leads to crowding out of investment in the private sector making the economy less productive and hindering the wage growth. In order to cover the deficits, the government is issuing debts in the form of Treasury securities. The debt when taken from banks, investment funds, foreign government and individuals are considered to be safe investments. When the government borrowings increase, it absorbs a large share of financial resources in the economy, resulting in fewer funds available to the private sector and thereby weakening the economic growth. When the government borrows, it puts an upward pressure on the interest rates, making borrowing expensive for the private sector. According to the CBO study, each percentage point in the debt to GDP ratio, rises the inflation- adjusted 10-year interest rates by 2 basis point or 0.2% points. Currently, the economy's debt to GDP ratio at 98% and is expected to grow to 119% in the next decade. This implies the interest rates would be half a percentage point higher than they otherwise would be due to the country's rising debt. According to CBO, each addition dollar added to the federal deficit is associated with a 33 cents decline in the private investments. A decline investment in capital and

workers leads to lower productivity ultimately lowering the wages and compensation of the workers.

DEBT CEILING – A SELF-IMPOSED CONSTRAINT

Over the past decade, the congress has authorized trillions of dollars in spending leading to a near tripling of the US debt since 2009. During this time, the Treasury Department has repeatedly encountered debt ceiling. The debt ceiling was established by congress in 1917, a statutory limit on the total amount of outstanding national debt the US Federal government can have. In January 2023, the Treasury department reached a limit of \$31.4 trillion. In June 2023, after lots of political negotiations and discussions, the lawmakers decided to suspend the debt ceiling until January 2025. Since 1960, Congress has raised, suspended or changed the terms of the debt ceiling 78 times, allowing the US to borrow more money. Since 2021, the federal government had annual deficits of almost \$1 trillion. It implies that the federal spending is exceeding the revenues from taxes and other revenue receipts. The Treasury must borrow funds in order to cover the spending commitments that the Congress has authorized in order to close the fiscal gap. The national debt as of June 2023 was exceeding \$32 trillion. It must be noted that, increasing or suspending the ceiling doesn't encourage the government for additional spending. Instead, it makes it possible for the government to meet its existing financial obligations. Disagreements between President Obama and congressional republicans resulted in prolonged standoff in 2011, a more hostile phase of debt ceilings negotiation began. Two days before the Treasury announced that it would run out of borrowing options, the congress came to an agreement. S&P global downgraded the US credit rating for the first time in history as result of last-minute resolution which created volatility in the financial markets since 2008. According to the GAO, it led to increase in the federal borrowing cost by \$1.3 billion in that year. The Federal government ability to fund its operations like social security, Medicare, Defence would be severely compromised if the debt ceiling were not raised or suspended. A default or anticipation could trigger lots of consequences like:

1. Credit rating agencies downgrades
2. Increased borrowing cost for the businesses, household and the federal government.
3. Consumer confidence declines
4. Financial market disruptions can lead to recession.

The Government is the sole issuer of currency and is not financially constrained like households. The Treasury collects tax revenue and makes payments ranging from the Social security to the federal units as well as interest on government securities. The main motive of collecting taxes is not to fund spending but to regulate the aggregate demand and control the inflation. When the expenditure exceeds the revenues and the debt ceiling restricts the government from further borrowing, the Treasury appears to be in a self-imposed constraint. Even when government falls short of revenue, it can continue to meet its obligation unless it chooses not to through failure or by raising and suspending the debt ceiling. The US dollars position as the world's currency has been supported by the US Treasury securities which have been viewed as safe financial instruments. A volatile environment could impact the US creditworthiness, which would lead to the investors selling their Treasury bonds causing decline in the dollar value. Economist brad Setster warns a 'default of the choice' would undermine dollars role in the international finance and payments. Since US dollars hold more than half of the world's foreign exchange, a decline in the value will result in the decline in the value of reserves and jeopardize the stability of the economy.

POLICY OPTIONS TO DEAL WITH THR RISING DEBT

The policymakers have put forth a number of proposals over the years to lower the national debt and balance the federal budget. The policies mainly involved combination of significant reduction in spending and revenue enhancements to change the course of the debt accumulation.

- Spending cuts

Majority of debt reduction plans require significant reductions in federal spending, especially in the area of defence and entitlement programs. For example, enacting significant spending cuts in the 2010 bipartisan Simpson-Bowles plan, put the nation's debt in a downward trajectory. This included reducing military spending, restructuring social security by raising the retirement age and making benefit adjustments, cutting Medicare and Medicaid spending.

- Increase in Revenues

Along with spending cuts, the government, majority of the fiscal plans aim to raise tax revenue. Taxes are known as destroyer of money. Taxes are collected not to fund spending but to drain excess money in the wallets of the private sector in order to control inflation. When the inflationary pressure rises, government should raise taxes for high income households as well as businesses earning excess profits in order to reduce their purchasing power.

- Risk of Delays

“The debt doesn't matter until it does. By exploiting our privileged position in the global economy, we risk losing it altogether” – Maya MacGuineas, President of the Committee for a Responsible Federal Budget.

The rising debt levels in US pose a long-term risk, even though many remain optimistic that country can sustain the high level of debt due to strong international investor confidence in the economy. According to Penn Wharton Budget Model analysts, financial markets might only be able to withstand ongoing deficits for roughly twenty more years. After that, neither spending reductions nor tax increases would be enough to avert a serious fiscal crisis or even a sovereign default.

- Ending the use of Treasury bonds as a funding necessity.

Throughout our discussion, we have observed a recurring pattern in US fiscal policy – When the country faces crisis or recession, the government responds to it by issuing debt through selling Treasury bonds to finance its spending. That said, this approach calls for re-evaluation. Given that it is a sole issuer of currency, during the periods of economic downturn, rather than heavily relying on debt issuance, government can use the money it has created to fund its spending needs.

WILL THE FUTURE GENERATION FACE THE BURDEN OF DEBT?

We have a duty to preserve the future generations the conditions necessary for growth and opportunity. But we have risked it and buried them in mountains of debt. In the wake of pandemic and Global financial crisis, the government borrowed extensively, to the extent that it has become normal for the government to spend trillions of dollars on bail outs and stimulus. Unlike the previous year, the consequences of the current fiscal trajectory and the outlines of potential future crisis have become evident, presenting tangible costs and risks not only to the present generation but also the future generation. The spike in inflation experienced in 2021 offers a concrete preview of the possible repercussions of the America's fiscal profligacy. At the same time, the rising interest rates has an impact on the growing debt - as interest rates rise, the cost of servicing the existing debt increases significantly, compounding federal spending, expanding budget deficits, and accelerating the accumulation of debt. US could face a fiscal crisis that could jeopardize the future generation's economic prospects and threaten nation's stability if reforms are not made into entitlement programmes like Social Security, Medicare that are structurally unsustainable.

The GFC triggered surge in the federal spending that was unprecedented in the recent history. Even before the crisis hit, the federal expenditure was increasing due to a global war terror, averaging \$2.7trillion during the year 2005-2008. Post crisis, the spending ballooned to \$3.5 trillion from 2009-2012. During this time, U.S marked the annual

deficits exceeding \$1 trillion for the first time with a peak deficit of \$1.4 trillion in 2009. Subsequent explosion in federal spending happened during Covid. Deficits surged over \$3 trillion in the year 2020 and outlays peaked at \$6.8 trillion. Many analysts argued the pandemic era response was excessive. Treasury Secretary Lawrence Summers criticized the American Rescue Plan Act implemented in March 2021 as least responsible and warned about the spark in inflation. His warning came true as CPI sharply rose from 1.8% between 2017-2020 to 4.6% in between 2020 and 2023 and reaching its peak of 8% in 2022. Even outside the context of pandemic, the spending momentum persisted worsening the fiscal outlook.

The consequences of rising debt is no longer seen as hypothetical. As witnessed in 2023, the net interest payments on the federal debt surged to \$659 billion, nearly double of what they were just 2 years prior. Interest payments rose from 1.3% to 2.4% over the past decade. This explosive growth in debt has started to crowd out other areas of the federal budget. According to CBO's projections, the deficits will continue to rise from \$1.7 trillion to \$2.9 trillion by 2034 and during this period US is going to accumulate a debt of \$24 trillion... In the next 75 years, social security and Medicare are expected to generate \$75 Trillion funding shortfall. In absence of the structural reforms, these programmes will feed off federal revenues, leaving a threat for the future generations. Studies have shown that a nation with excessive debt can suffer slower economic growth, high inflation and debt crisis. If US faces this crisis, the global economy would get affected. Given the historic upward trajectory of U.S debt accumulation, the greatest burden will fall on the future generation. Unfortunately, Young Americans have inherited a legacy marked by delayed accountability, constrained opportunities and significantly weakened fiscal position.

CONCLUSION

The analysis shows that US uses debt to fund its spending through issuance of Treasury bonds to respond to crises. Even though this approach has helped the economy

temporarily to overcome the crisis, it has contributed to the increased interest costs and the amount of public debt. Drawing from the MMT perspective that, the federal government is the sole issuer of currency and is not financially constrained, the policy makers should rethink about the fiscal strategies in order to align with the public spending with long term productivity. Government should spend in order to fully utilize then nation's productive capacity. Rising debt levels won't pose a threat, if the economy is functioning at full employment level. In such conditions, targeting public investment will boost the long-term growth, stimulate demand and avoid inflationary pressure. Moreover, quality of spending matters than the quantity of spending. So, Government should allocate its spending towards infrastructure, education and green evolution that has high economic and social return without needlessly increasing the debt levels. US can reduce its reliance on borrowing, better control inflation and protect the future generations from mountains of debt.

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