Article: Analysis of U.S. Government Debt Trends and Projections

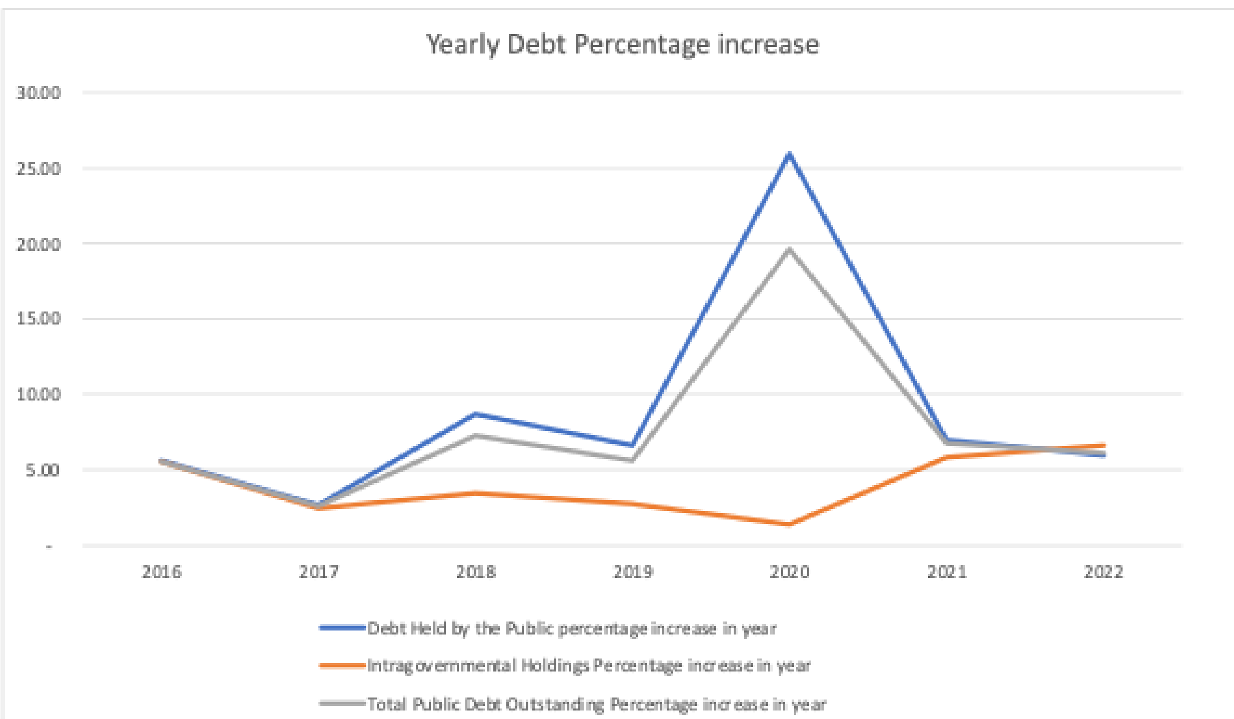
Introduction

The U.S. government has tasked a small debt agency in Washington, DC, with analyzing and forecasting public and governmental debt trends. This article explores key questions regarding the yearly percentage increase in debt, the historical monthly patterns in debt growth, and the projected growth of publicly held debt. The data used for this analysis covers the years 1997 to 2023 and includes "Debt Held by the Public," "Intragovernmental Holdings," and "Total Public Debt Outstanding."

Yearly Debt Percentage Increase

Methodology: To calculate the yearly debt percentage increase, we focused on the years 2015 to 2023. The data was cleaned and transposed, scientific notation was converted to numeric values, and null values were replaced with zeros for accuracy. A table was created to facilitate filtering, and a pivot table was used for analysis. The yearly debt increase was calculated using the formula:

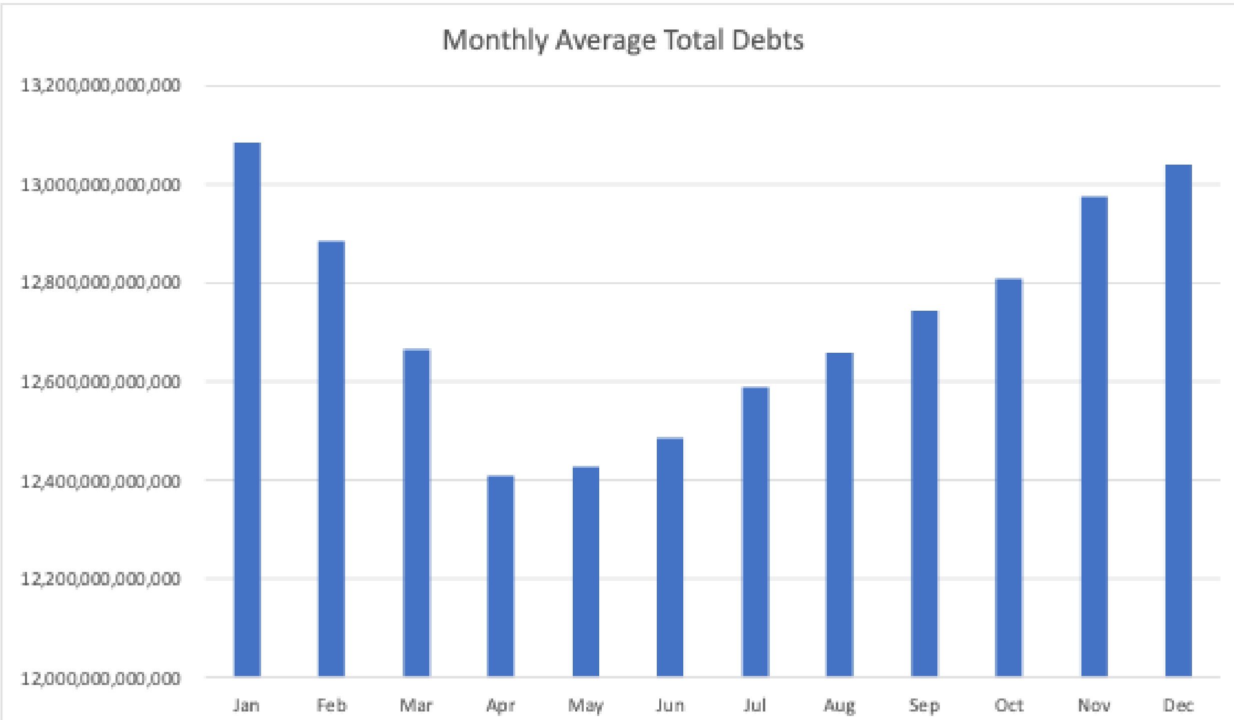
Percentage Increase=Previous Year Debt Value -
Current Year Debt Value−Previous Year Debt Value×100



Summary/Conclusions: Between 2016 and 2019, the Total Public Debt Outstanding showed a consistent average increase of approximately 5% annually. However, 2020 witnessed a significant spike in debt growth, likely driven by economic responses to the COVID-19 pandemic. This spike marked a notable deviation from the previous trend of steady growth.

Monthly Patterns in Debt Growth

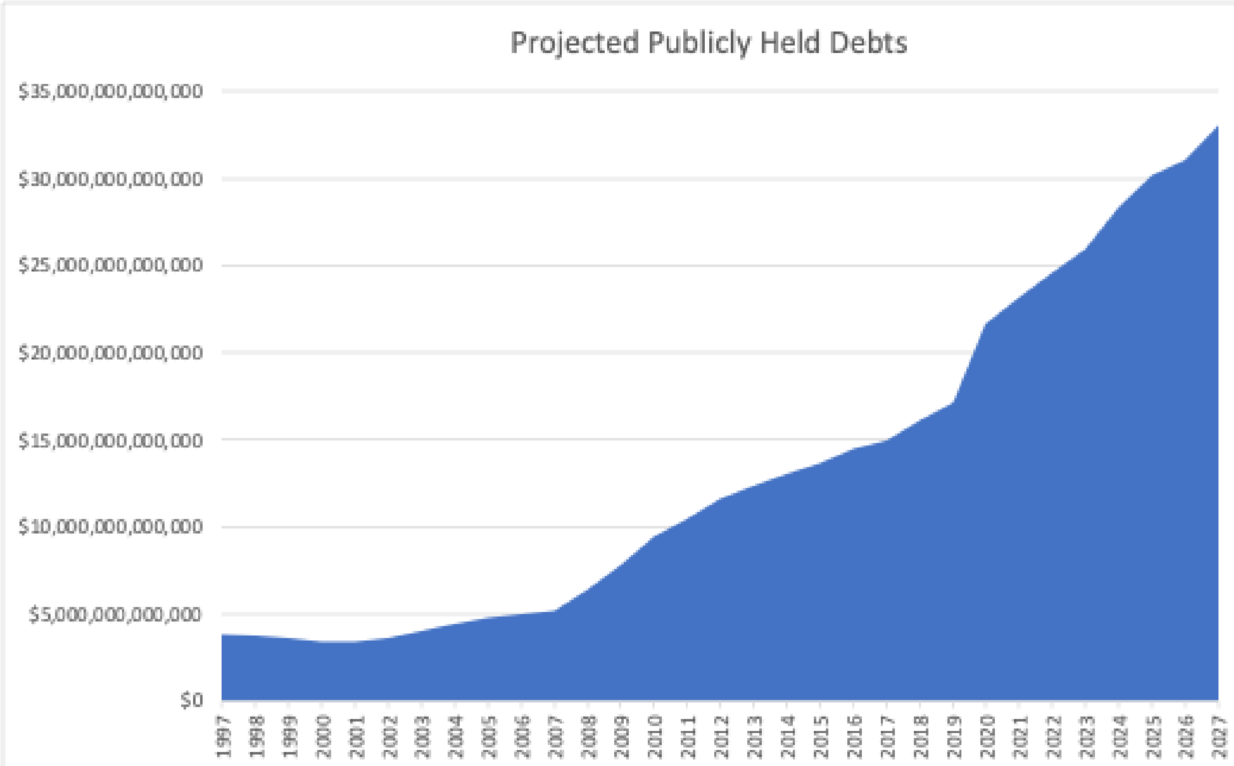
Methodology: To identify which months historically have seen the highest and lowest increases in Total Public Debt Outstanding, we used the record date and filtered the data by month. A pivot table was employed to calculate the average Total Public Debt Outstanding for each month.



Summary/Conclusions: Historically, the months of January, February, November, and December have seen the highest increases in total debt, while April, May, June, and July have shown the lowest increases. This trend suggests a correlation with consumer behavior during the holiday seasons, particularly around Thanksgiving and Christmas. The hypothesis is that people tend to take on more debt during these high-spending months to finance holiday-related expenses, leading to significant spikes in debt.

Projected Growth of Publicly Held Debt

Methodology: For projecting the growth of publicly held debt, we used data from 1997 to 2023, excluding earlier years due to incomplete data and the first few months of 2023 for accuracy. We applied the FORECAST.ETS function in Excel to estimate debt growth from 2023 to 2027.



Summary/Conclusions: Publicly held debt began to rise significantly in 1997, with a sharp increase starting in 2007 due to the financial crisis. The debt surpassed $5 trillion and continued to grow steadily, exceeding $20 trillion by 2019. Based on the projections, publicly held debt is expected to accelerate further, potentially surpassing $35 trillion by 2027.

The analysis reveals a steady increase in the U.S. public debt over the past decades, with significant spikes during economic downturns and high-consumption periods. The projected growth indicates a continued upward trend, emphasizing the need for careful monitoring and management of the nation's debt levels.