Idea behind the project:

During the first half of 20th Century, we went through 2 world wars. It destroyed many country’s economies, millions of people died and brought Fascism. The idea behind our project is to understand the psychology of money. We are starting this voyage to understand what actions led United States of America to improve their economy significantly.

Project Description:

Our project aim is to analyze various factors which led to the growth of GDP after World War 2. We are trying to find the correlation between low interest rates and the increase of GDP. Along with that, we also try to deduce how availability of loans led to increase in GDP, and how personal expenditure, income levels, poverty contribute towards making United states from saving economy to spending economy.

Group Members:

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Hypothesis 1:

Low interest rates post World War 2 helped in eventually increasing the GDP for United States of America.

H0 : Low interest rates helped increase the GDP of United States of America.

HA : No effect of GDP on the economy of United states of America.

We plotted the graph with GDP on y axis and years on x axis. The graph trend shows that low interest rates offered in the early years after World War 2 led the GDP to grow. Hence, we can say null hypothesis is satisfied.

In this hypothesis, we have used multiple datasets namely population and GDP. We created 2 functions and one for each. We extracted the United States data and normalized with population. We plotted, the graph to further prove our hypothesis. It showed us, how the GDP has increased with respect to population. We called those functions for United Kingdom as well to compare the increase in GDP.

To further prove our hypothesis, we used the USA loan data from US bureau of Statistics. We plotted the graph and concluded the increase in loan taken by individuals in United States.

Hypothesis 2:

Low interest rates and easy availability of loans post the World War 2 transformed the USA from savings household economy to spending economy.

H0 : Low interest rates and availability of loans helped increase the GDP of United States of America.

HA : No effect of GDP on the economy of United states of America.

To analyze this hypothesis, we worked on multiple factors (i.e.) personal expenditure, income etc. We plotted the graph demonstrating the trend of personal expenditure from 1960 till 2021. After this we repeated the same process with income of people. In both the cases, the graph trend line is increasing.

We made the third graph showing us the trend of income subtracted by personal expenditure. That graph trend line is significantly decreased from 1970 till 2020. It proves that the economy of United States has become a spending economy.

Imposing less interest in the initial years led to the formation of habit of spending more than you earn. This led to people spending more than they earned. This formation of habit of spending so much, led to the building of the GDP in countries like the USA. Since the Difference between the income and personal expenditure has gradually decreased over the years after the passing of the GI bill and introduction of the credit system, the hypothesis 2 holds true. Hence, we can say null hypothesis is satisfied.

This hypothesis led us to think that Americans live a lavish lifestyle, even a person who lies within the 50th percentile of income tries to live a richer lifestyle. This habit of spending can lead to many people towards poverty, as they are spending large portion of their income on their lifestyle.

We further wanted to analyze our 3rd hypothesis based on this assumption.

Hypothesis 3:

Does the habit of taking loans and credit to live a lavish American lifestyle, has led American population below the poverty level over the years

H0 : Loans and Credit has led American people below poverty level over the years.

HA : No effect of poverty on the American population.

To analyze this hypothesis, we decided to work on population below 50th percentile threshold in the USA. The graph trend shows a lot of variation in the poverty level amongst population below 50th percentile. There are many other factors which also affect the percent of population (i.e.) 2008 financial crisis, natural disasters, Covid 19 etc. We can deduce that the number of populations has gradually increased over the years in USA. Hence, null hypothesis is satisfied. Visualizations done in jupyter notebook , doctests added in the .py file and uploaded.