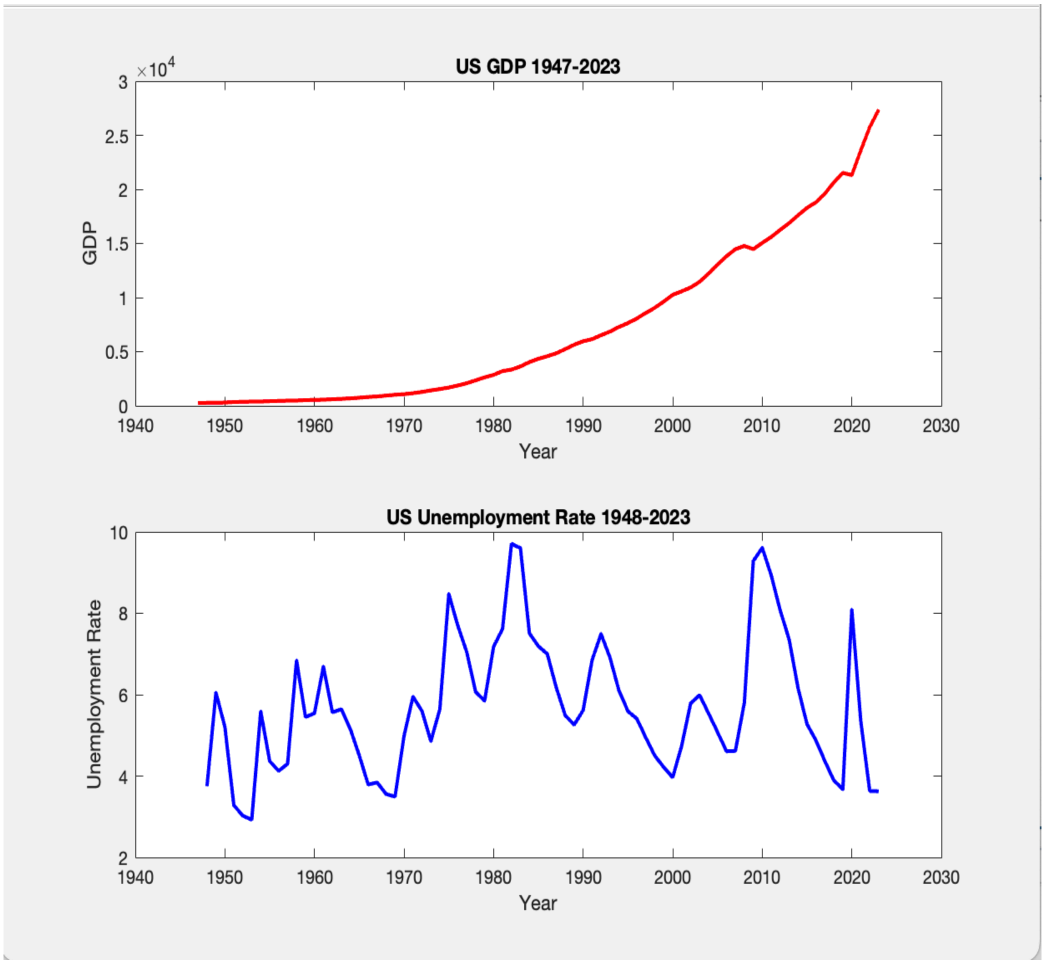
Data Set(s) #1

The first two data sets I have are from the St. Louis Fed website for economic research, or the FRED Economic Data database: https://fred.stlouisfed.org/
This is a highly renowned website in the economic community and it is highly trustable and reliable as it has been working with the United States government since 1991, and has data for both of the data sets I am using since 1947/1948, all abstracted directly from the St. Louis Federal Reserve Bank of America files – Though I may abstract more data sets from this site because they have really good CSV format data files.

The first data file from this website I am using is the United States GDP (Gross Domestic Product) since 1947 (https://fred.stlouisfed.org/series/GDP). It is a CSV file and it is in a 309 row by 2 column format. It is easily uploadable to MATLAB either using the readtable('USGDP19482023.csv'), or the import data function at the top of the home page section. I am going to use the readtable function because it has two great headers already, one being "DATE" and the other being "GDP". This makes it super easy to deal with. This file contains data from every third month from January 1, 1947 to October 1, 2023. By this I mean it has data from every year from the months of January(1), April(4), July(7), and October(10) – Essentially the end and beginning of each fiscal quarter. This file is easy and quite up to date so I see no issues with it.

The second data file from this website I am using is data on the Unemployment Rate since 1948 (https://fred.stlouisfed.org/series/UNRATE). It is a CSV file and it is in a 916 row by 2 column format. It is easily uploadable to MATLAB either using the readtable('UnemploymentRate1948Present.csv'), or the import data function at the top of the home page section. I am going to use the readtable function because it has two great headers already, one being "DATE" and the other being "UNRATE". This makes it super easy to deal with. This CSV file contains data by month (I mean every month) from January 1, 1948 to March 1, 2024. This file is also super easy and VERY up to date.

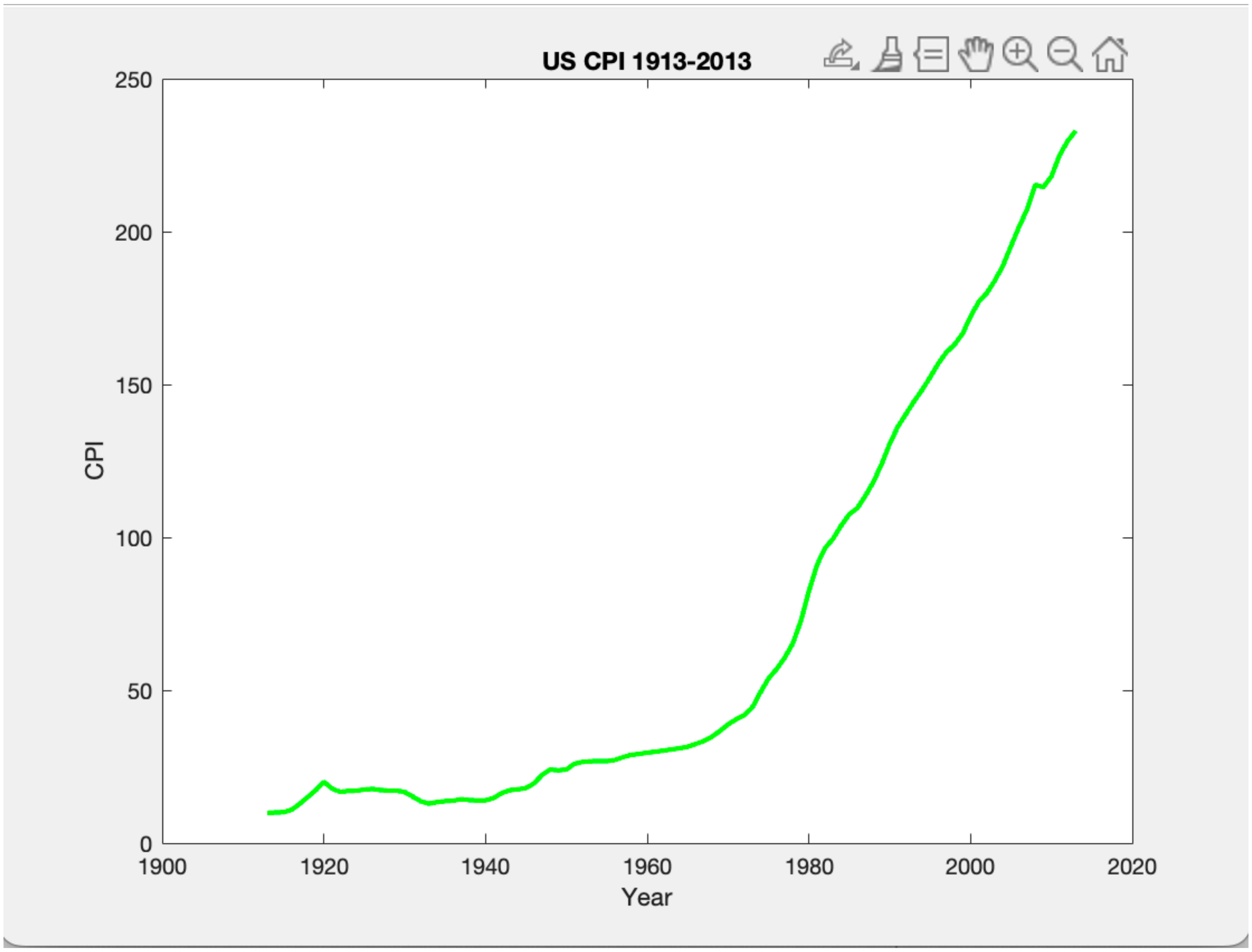
One thing I would like to do for each file is to get a yearly average so there are not as many data points. This is partly because it will be easier to deal with, but also because there is no data for every month in each of the files I will be using. I think this will add cleanliness to the data as well as clarity in the graphs so it is just by year and not monthly. I am going to use some vector tricks and the reshape function and a little bit of matrix math to do this so I do not have to go through every single bit and make a new vector and then divide by 4 or 12 and then make a new table. I also am going to remove the rows past December 2023 in the second file so that it can be put into a new table because some of the matrix tricks I am doing require same size vectors.
****Plot is below. I will also upload the code file I made.**



Data Set #2

The second data set I will be using is from kaggle.com. Kaggle is a very common data repository and website for data projects, analysis, files, and pretty much anything in terms of data you could possibly want. I mean it even has data sets on average coffee prices and drinking times! Kaggle is used by software engineers and data scientists all over the world and it was highly recommended on YouTube and Twitter for this project.

The data file I am abstracting from Kaggle is a CSV file containing the monthly CPI(consumer price index) from 1913 to 2013 (https://www.kaggle.com/datasets/tunguz/us-consumer-price-index-and-inflation-cpi). It is in a 1213 row by 2 column format. It is easily uploadable to MATLAB using the readtable function or the import data header at the top of the homepage. I will use the readtable function for this file because it already has great column headers: “Date” and “CPI”. Since this file is monthly, I am going to do the same thing as above, and average it out using vector and matrix math, and some useful MATLAB functions so I get annual CPI. This will make it cleaner, and also easier to compare and do computations with. I am going to use some vector tricks, the reshape function, and some matrix math to make the new yearly CPI table. Plot will be below.

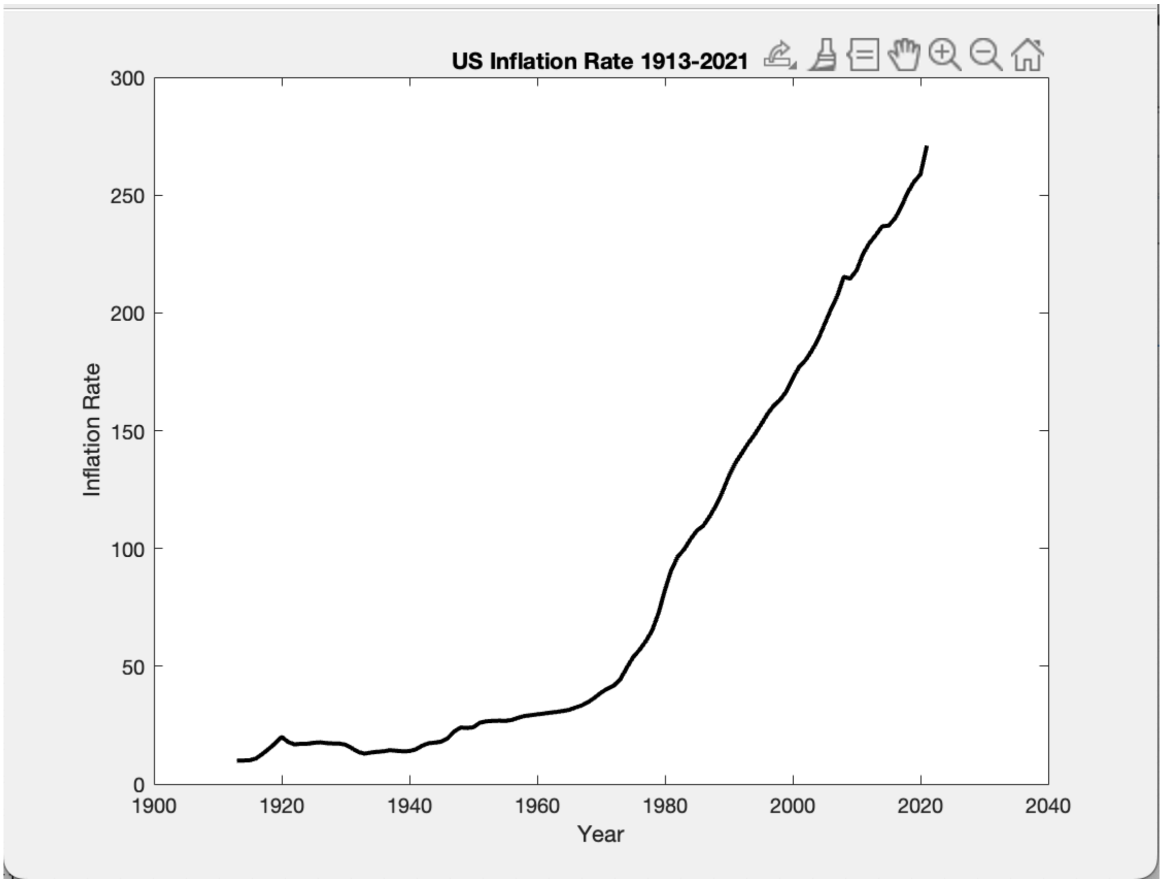


Data Set #3

The third data set I am going to use is directly from the Bureau of Labor Statistics (https://data.bls.gov/pdq/SurveyOutputServlet). This is a US Government data site and is highly trustable and reliable.

The data file I am abstracting from this site is a file that contains the monthly inflation rate from 1913 to 2021. This file is in a CSV format. This file is a bit different from the others I have used and is in a 110 row by 14 column format. The first column header is the year, and then the next 12 are the months of the year, and then each box in the table corresponds to the inflation rate of the year and month. Since I am not completely sure how to deal with this in MATLAB because of the odd format, I am going to go into sheets and get the average myself and then make a new column for the average and then delete the rest in MATLAB. It is very easy to upload using the

readtable function. Again, the same reason as the above sets for why I am doing the annual average.
Plot is below.



Small Project Proposal/Why These data sets

For my final project I want to use all of these data sets to look at economic activity in order to analyze and discuss the relationships between these different data points(As you can already see CPI and Inflation line up quite nicely…). I want to discuss broader economic implications, historical and economic causes, and patterns. I want to include some kind of application to the impacts different economic time periods have had on people and discuss some of the historical background to those different periods. I am currently pursuing an economic minor that is why I am interested in this.

**The code file I uploaded with this will display all of these plots and you can see the code I used. Hopefully my explanations make sense and my code is sufficient.

Thanks – Isaac