

Inflation Forecast & Expense Planning

Select Forecast Horizon (Months) ?

12

6

60

Enter Your Current Monthly Expense (\$) ?

1000.00

-

+

Inflation Expense Visualiser

Welcome to the **Inflation Expense Visualiser**! This application helps you understand the impact of inflation on household expenses. Using historical Consumer Price Index (CPI) data, it calculates inflation rates, forecasts future CPI, and projects how a hypothetical expense might change over time due to inflation.

How to use:

- 1. The application automatically loads the `US_CPI.csv` file you provided.
- 2. Explore the historical CPI trend and inflation rates.
- 3. Use the sidebar to set a **forecast horizon** (how many months into the future you want to project).
- 4. Enter a **hypothetical monthly expense** in the sidebar (e.g., your average monthly grocery bill).
- 5. The app will then show you the forecasted CPI and how your entered expense would change with inflation.

1. CPI Data Overview

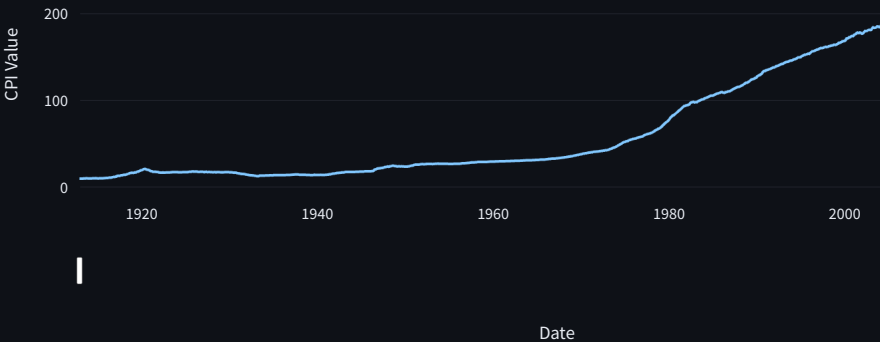
Here's a glimpse of the processed CPI data:

Date	CPI_Value	CPI_MoM_Change	YoY_Inflation_Rate
2021-03-01 00:00:00	264.877	0.7083	2.6198
2021-04-01 00:00:00	267.054	0.8219	4.1597
2021-05-01 00:00:00	269.195	0.8017	4.9927
2021-06-01 00:00:00	271.696	0.9291	5.3915
2021-07-01 00:00:00	273.003	0.4811	5.3655

Data available from 1913-01 to 2021-07.

2. Historical CPI Trend

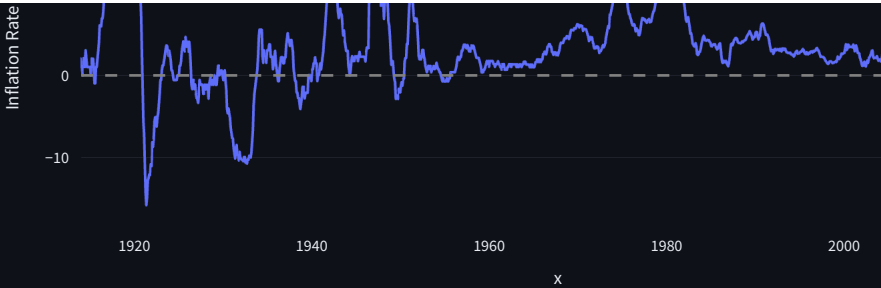
Historical Consumer Price Index (CPI)



3. Historical Year-over-Year (YoY) Inflation Rate

Year-over-Year Inflation Rate (%)

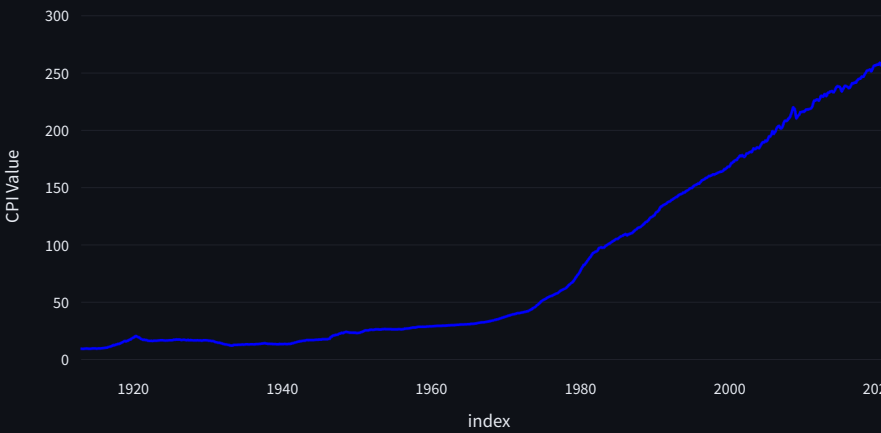




Latest Year-over-Year Inflation Rate: 5.37% (as of July 2021)

4. CPI Forecast for the Next 12 Months

Historical and Forecasted CPI



5. Impact of Inflation on Your \$1,000.00 Monthly Expense

Your initial monthly expense of \$1,000.00 would change as follows:

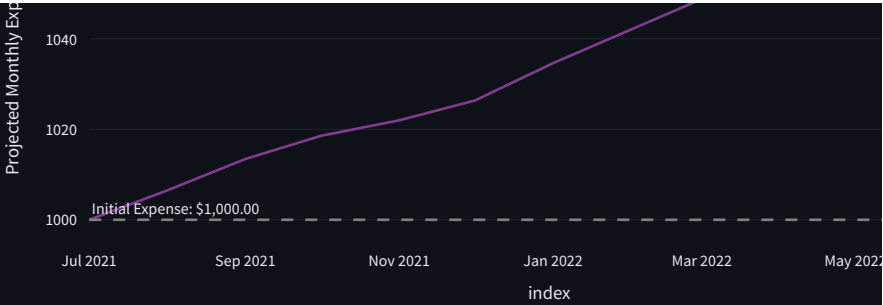
	Projected Monthly Expense
2021-07-01 00:00:00	\$1,000.00
2021-08-01 00:00:00	\$1,006.50
2021-09-01 00:00:00	\$1,013.46
2021-10-01 00:00:00	\$1,018.58
2021-11-01 00:00:00	\$1,022.00
2021-12-01 00:00:00	\$1,026.38
2022-01-01 00:00:00	\$1,034.64
2022-02-01 00:00:00	\$1,042.17
2022-03-01 00:00:00	\$1,048.83
2022-04-01 00:00:00	\$1,054.48

Projected Monthly Expense (\$1,000.00 initial) with Inflation

Expense (\$)

1060





6. Actionable Insights

- Based on the forecast, your 1,000.00 * *monthly expense could increase to approximately 1,071.68 in 12 months*. This represents a 7.17% increase.
- Understanding these trends can help you adjust your budget and financial planning to account for inflation changes.
- Consider reviewing your spending habits and exploring ways to save or invest to mitigate the impact of inflation.

7. Power BI Integration (Guidance)

While this Streamlit app provides interactive visualizations, you can also leverage the processed data in advanced dashboards in Power BI.

Steps to integrate with Power BI:

- Export Processed Data:** You can export the `cpi_data` DataFrame (which includes historical CPI, YoY inflation) and the `full_expense_projection` DataFrame (which includes forecasted CPI and expenses) to CSV files.
- Import into Power BI:** In Power BI Desktop, use "Get Data" -> "Text/CSV" to import these exported files.
- Build Dashboards:** Use Power BI's powerful visualization tools to create custom charts, tables, and reports based on the imported data. You can combine the historical and forecasted data to create comprehensive dashboards.
- Relationships:** If you export multiple related tables (e.g., historical CPI and forecasted expenses), establish proper relationships between them in Power BI based on common date columns.

8. Export Data for Power BI

Click the buttons below to download the processed dataframes as CSV files, ready for import into Power BI.

Download Processed CPI Data as CSV

Download Projected Expenses Data as CSV