**CPI** <https://fred.stlouisfed.org/series/MEDCPIM094SFRBCLE#0>

Index Dec 1982=100,Seasonally Adjusted

**Fed Funds Effective Rate (FEDFUNDS)** <https://fred.stlouisfed.org/series/FEDFUNDS#0>

**POPULATION -** <https://fred.stlouisfed.org/series/POPTHM#0>

**Employment Rates-** <https://fred.stlouisfed.org/series/LREM64TTUSM156S>

**Mortgage Rates-** <https://fred.stlouisfed.org/series/MORTGAGE30US#0>

**Houses Bought and Sold at the end of every year**

<https://www.census.gov/construction/nrs/historical_data/index.html>

**Unemployment Rates** <https://fred.stlouisfed.org/series/LNS14000024>

**Median CPI** <https://fred.stlouisfed.org/series/MEDCPIM158SFRBCLE>

**Disposable Income** <https://fred.stlouisfed.org/series/DSPI>

Execution Summary

|  |  |  |
| --- | --- | --- |
| Input  Parameters | Intervals | Frequency |
| Mortgage Rates | Feb’71- Nov’23 | Monthly |
| Fed. Funds rates | Jan’54-Nov’23 | Monthly |
| Employment Rates | Jan’77-Oct’23 | Monthly |
| Unemp. Rate | Jan’48-Oct’23 | Monthly |
| Median CPI | Jan’83-Oct’23 | Monthly |
| Personal Income | Jan’59-Sep’23 | Monthly |
| Houses Sold at EOM | Jan’63-Oct’23 | Monthly |
| Houses for Sale at EOM | Jan’63-Oct’23 | Monthly |
| Population | Jan’59-Oct’23 | Monthly |
| Real GDP per Capita | Jan’47-July’23 | Annual |

Dependent Variable- CASE-SCHILLER Home Price Index. It spans from Jan’87-Sep’23.

Initially, a data frame (df1) is constructed, encompassing all variables with the exception of 'Real GDP per Capita,' which requires interpolation. Due to the absence of data in consistent time intervals, the time period selected for analysis spans from January 1983 to July 2023.

1. **Interpolation:**
   * Integrate 'Real GDP per capita' and with df1 to create the comprehensive set of input features (df2).
2. **Analysis:**
   * Conduct variable analysis using df2.
3. **Data Selection:**
   * Extract data from df2 for the period Jan’87 to Sep’23 to study input-output variable relationships.
4. **Model Construction and Evaluation:**
   * Utilize data from 2003 to 2023, as specified, for constructing the model.
   * For comparison, I’ve also built a model using all data available

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