**Data Analysis: Personal Income & Homeownership Analysis**

***Background:*** Should you rent or buy? This longstanding question has caused researchers and prospective buyers to examine the affordability and feasibility of buying a home in the 21st century. As home prices steadily rise and individual earnings seemingly not grow at the same rate, many people are opting to remain leasing apartments and renting houses causing many homes for sale to remain on the market of extended periods. This study is aimed at analyzing personal income and homeownership in the U.S. between January 1987 and April 2024, to explore the following questions of interest:

* Are there specific characteristics of the time series representing disposable income that contribute most to the predictability of the time series?
* Is there any relationship between the personal income & the home price index?
* Are there external or exogeneous factors that help in predicting homeownership?

The data was acquired from U.S. Bureau of Economic Analysis, S&P Dow Jones Indices LLC, U.S. Census Bureau, and Board of Governors of the Federal Reserve System (US) and contains roughly 442 records of monthly data and 148 records of quarterly data. The dataset variables are below. The dataset of interest is in the following: Real Disposable Personal Income.csv and Homeownership Rate in the United States.csv.

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| Real Disposable Personal Income  <https://fred.stlouisfed.org/series/DSPIC96> | Billons of Chained 2017 Dollars, Seasonally Adjusted Annual Rate; Monthly |
| Personal Saving Rate  <https://fred.stlouisfed.org/series/PSAVERT> | Percent, Seasonally Adjusted Annual Rate; Monthly  Personal saving as a percentage of disposable personal income (DPI), frequently referred to as "the personal saving rate," is calculated as the ratio of personal saving to DPI. Personal saving is equal to personal income less personal outlays and personal taxes; it may generally be viewed as the portion of personal income that is used either to provide funds to capital markets or to invest in real assets such as residences. |
| S&P CoreLogic Case-Shiller U.S. National Home Price Index  <https://fred.stlouisfed.org/series/CSUSHPINSA> | Index Jan 2000=100, Not Seasonally Adjusted; Monthly |
| Consumer Debt Service Payments as a Percent of Disposable Personal Income  <https://fred.stlouisfed.org/series/CDSP> | Percent, Seasonally Adjusted; Quarterly  The [Household Debt Service Ratio (DSR)](https://fred.stlouisfed.org/series/TDSP) is the ratio of total required household debt payments to total disposable income. The DSR is divided into two parts. The Mortgage DSR [(MDSP)](https://fred.stlouisfed.org/series/MDSP) is total quarterly required mortgage payments divided by total quarterly disposable personal income. The Consumer DSR [(CDSP)](https://fred.stlouisfed.org/series/CDSP) is total quarterly scheduled consumer debt payments divided by total quarterly disposable personal income. The Mortgage DSR and the Consumer DSR sum to the DSR. |
| Household Debt Service Payments as a Percent of Disposable Personal Income  <https://fred.stlouisfed.org/series/TDSP> | Percent, Seasonally Adjusted; Quarterly |
| Homeownership Rate in the United States  <https://fred.stlouisfed.org/series/RHORUSQ156N> | Percent, Not Seasonally Adjusted; Quarterly  The homeownership rate is the proportion of households that is owner-occupied. |
| Mortgage Debt Service Payments as a Percent of Disposable Personal Income  <https://fred.stlouisfed.org/series/MDSP> | Percent, Seasonally Adjusted; Quarterly |
| Homeowner Vacancy Rate in the United States  <https://fred.stlouisfed.org/series/RHVRUSQ156N> | Percent, Not Seasonally Adjusted; Quarterly  The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant for sale. |
| Rental Vacancy Rate in the United States  <https://fred.stlouisfed.org/series/RRVRUSQ156N> | Percent, Not Seasonally Adjusted; Quarterly  The rental vacancy rate is the proportion of the rental inventory that is vacant for rent. |
| 30-Year Fixed Rate Mortgage Average in the United States  <https://fred.stlouisfed.org/series/MORTGAGE30US> | Average Percent, Not Seasonally Adjusted; Aggregated monthly |