# Does the Stock Market Value Affect Housing Prices

Data

Monthly stock market index data was obtained through the yahoo finance API using the python api https://pypi.org/project/yfinance/ Three CSV files were created. These files were named djii\_1m.csv, nasdaq\_1m.csv, and sp500\_1m.csv. Each of these files contained the following columns:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Open** | **High** | **Low** | **Close** | **Adj Close** | **Volume** |
| YYYY-MM-DD | Float | Float | Float | Float | Float | Int |

Where **Date** is the year month and day of the stock market readings in four-digit year, two-digit month and two-digit day format. **Close** is the closing price of the market is the actual cash value of the last transacted price before the market closes. **Adj Close** is the closing price adjusted by various corporate actions which include but are not limited to stock splits, dividends, and rights offerings. For the purposes of examining market index trends of long periods of time. We chose to use the adjusted closing price. For the purposes of correlations, we can see that we may use either Close or Adj Close to compare these values by looking at the correlations between Closing price and Adjusted Closing price for each index.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **IXIC\_CLOSE** | **IXIC\_ADJCLOSE** | **DJI\_CLOSE** | **DJI\_ADJCLOSE** | **GSPC\_CLOSE** | **GSPC\_ADJCLOSE** |
| **IXIC\_CLOSE** | 1.0000 | 1.0000 | 0.9726 | 0.9726 | 0.9820 | 0.9820 |
| **IXIC\_ADJCLOSE** | 1.0000 | 1.0000 | 0.9726 | 0.9726 | 0.9820 | 0.9820 |
| **DJI\_CLOSE** | 0.9726 | 0.9726 | 1.0000 | 1.0000 | 0.9937 | 0.9937 |
| **DJI\_ADJCLOSE** | 0.9726 | 0.9726 | 1.0000 | 1.0000 | 0.9937 | 0.9937 |
| **GSPC\_CLOSE** | 0.9820 | 0.9820 | 0.9937 | 0.9937 | 1.0000 | 1.0000 |
| **GSPC\_ADJCLOSE** | 0.9820 | 0.9820 | 0.9937 | 0.9937 | 1.0000 | 1.0000 |

Yahoo Finance data for Down Jones Industrial Averages (DJI) data starts on Feb 01 1999 and are reported monthly on the first day of each month through Jan 01, 2021. The two other datasets Nasdaq (IXIC) and Standard and Poor’s 500 (GSPC) are reported starting Jan 01, 1987 and are reported on the first day of the month though Jan 01, 2021

Home Price Index data is obtained from the Federal Reserve bank of St. Louis FRED database. [Federal Reserve Economic Data | FRED | St. Louis Fed](https://fred.stlouisfed.org/). We choose to use the Case-Shiller 10 City Composite Home Price Index

|  |  |
| --- | --- |
| **DATE** | **SPCS10RSA** |
| YYYY-MM-DD | float |

This is an index of home prices in the 10 largest US metro areas. The index data is set to be 100 on Jan 2000 and is Seasonally Adjusted. This data is reported on the first day of the month starting in Jan 01, 1987 through Jan 01, 2021. The following cities are represented by the 10 city composite, Boston, MA; Chicago, IL; Denver, CO; Las Vegas, NV; Los Angeles, CA; South Florida; New York, NY, San Diego, CA; San Francisco, CA; and Washington DC;