

## FACTORS INFLUENCE U.S RESIDENTIAL HOUSE PRICES

Variables	Units	Data Source
Residence Development Investment	\$	<a href="https://www.census.gov/construction/c30/c30index.html">https://www.census.gov/construction/c30/c30index.html</a>
Interest Rates	%	<a href="https://home.treasury.gov/policy-issues/financing-the-government/interest-rate-statistics">https://home.treasury.gov/policy-issues/financing-the-government/interest-rate-statistics</a>
Population per sq km	per km <sup>2</sup>	<a href="https://tradingeconomics.com/united-states/population-density-people-per-sq-km-wb-data.html#:~:text=km%20of%20land%20area)%20in,com%20from%20officially%20recognized%20sources.">https://tradingeconomics.com/united-states/population-density-people-per-sq-km-wb-data.html#:~:text=km%20of%20land%20area)%20in,com%20from%20officially%20recognized%20sources.</a>
Average Income	\$	<a href="#">United States Census Bureau</a>
Gross Value Added	\$ per capita	<a href="#">Gross value added to the Gross Domestic Product (GDP) of the United States of America from 1990 to 2019, by sector</a>
Gross Disposable Household Income	\$ per capita	<a href="#">US mean disposable household income by age 2019</a>
Permanent Dwelling Started	Counts/year	<a href="#">Permanent Dwelling Converted (28-210.3)</a>
Permanent Dwelling Completed	Counts /year	<a href="#">Permanent Dwelling Converted (28-210.3)</a>
Consumer Price Index	%	<a href="#">U.S. Bureau of Labor Statistics</a>
Unemployment Rate	%	<a href="#">United States Unemployment Rate 1948-2020</a>
Consumer Confidence Index	%	<a href="#">United States Consumer Confidence Index</a>
House Price to Income Ratio	In points	<a href="#">House price to income ratio in the United States from 1st quarter 2015 to 2nd quarter 2020)</a>

## Residence Development Investment (in \$):

As for the residence development investment (REI), the more funds the government invests, the larger the building-scale is (Murialdo., 2013). Studies of residential investment over the business cycle, in particular its recession prediction properties (Leamer (2007) and (2015); IMF (2008)). For instance, Leamer (2015) showed how nine out of eleven recessions in the United States after the Second World War were preceded by large declines in residential investment.

Information source: [\*Residential investment and economic activity: evidence from the past five decades\*](#)  
(data source: <https://www.census.gov/construction/c30/c30index.html>)

## Interest Rates (in %):

People usually purchase real estate through mortgage loans. Therefore, interest rate (IR) is bound to be the factor affecting price fluctuations. Himmelberg et al (2005) provide an example of such an analysis and calculate that a 1 percentage point decline in real interest rates could raise house prices by as much as 19–33% in US cities with persistently high house price growth.

Information source: [\*Interest rates and house prices in the United States and around the world\*](#)  
(Data source: <https://home.treasury.gov/policy-issues/financing-the-government/interest-rate-statistics>)

## Population per square kilometer (per km<sup>2</sup>):

For the demand factors, the population density (PD) is strongly correlated with the demands of housing purchasing. As per the research done by “**David Miles**, *Scottish Economic Society*”, With growing population, the real prices of a unit of housing tends to be higher in more densely populated countries.

Information source: [\*Population Density, House Prices and Mortgage Design\*](#)  
(Data source: [https://tradingeconomics.com/united-states/population-density-people-per-sq-km-wb-data.html#:~:text=km%20of%20land%20area\)%20in,compiled%20from%20officially%20recognized%20sources.](https://tradingeconomics.com/united-states/population-density-people-per-sq-km-wb-data.html#:~:text=km%20of%20land%20area)%20in,compiled%20from%20officially%20recognized%20sources.))

## Average Income (in \$):

In a general manner, if there is rise in Average Income, there must be rise in house prices as theoretically, there maybe chances of rising demand in residential houses. As per the research done by “**Joshua Gallin**, *Federal Reserve Board*”, there exist a positive correlation between house pricing and Real Average Income.

Information source: [\*The Long-Run Relationship between House Prices and Income: Evidence from Local Housing Markets Joshua Gallin, Federal Reserve Board\*](#)  
(Data source: [\*United States Census Bureau\*](#) )

### **Gross Value Added (\$ per capita):**

Generally speaking, the larger the variable is, the stronger the resident's purchasing ability which it is bound to the housing price.

Information source: *self-consideration*

(Data source: [Gross value added to the Gross Domestic Product \(GDP\) of the United States of America from 1990 to 2019, by sector](#) )

### **Gross Disposable Household Income (\$ per capita):**

The average disposable income (GDHI) determines the purchasing ability which is positively correlated with housing price (Mishkin., 2007).

Information source: *self-consideration*

(Data source: [US mean disposable household income by age 2019](#) )

### **Started and Completed Permanent Dwellings (counts per year):**

Started and completed permanent dwellings (PDS) (PDC) are also chosen because of their importance in the housing market. Constructed area and completed dwellings numbers can best reflect the real estate supply. Usually in the case of constant elasticity of demand stability, as the supply area increases, the house price will decrease.

Information source: *self-consideration*

(Data source: [Permanent Dwelling Converted \(28-210.3\)](#))

### **Consumer Price Inflation/ Consumer Price Index (in %):**

CPI is introduced because it is normally considered as an indicator of Inflation or deflation which can lead to rising costs of workers or construction materials, indirectly affecting housing costs.

Information source: [Mishkin, F.S. and Schmidt-Hebbel, K., 2001. One decade of inflation targeting in the world: what do we know and what do we need to know? \(No. w8397\). National bureau of economic research.](#)

(Data source: [U.S. Bureau of Labor Statistics](#))

## Unemployment Rate (in %):

As unemployment rates and housing prices are state specific they may be interrelated and/or they may capture unobserved state-specific effects rather than the intended time varying effects. As cited in research, there is a moderately strong negative correlation between the unemployment rate and housing prices.

Information source: [\*Housing Prices, Unemployment Rates, Disadvantage, and Progress toward a Degree, Leslie S. Stratton\*](#)

(Data source: [\*United States Unemployment Rate 1948-2020\*](#))

## Consumer Confidence Index (in points):

Confidence is important for determining whether people want to take the risk of taking out a mortgage. In particular expectations towards the housing market is important; if people fear house prices could fall, people will defer buying.

Information source: [\*The Role Of Consumer Confidence In The Property Market: One Step Further In The Cointegrated House Price Series Model\*](#)

(Data source: [\*United States Consumer Confidence Index\*](#))

## House Price to Income Ratio (in points):

The ratio of house prices to earnings influences the demand. As house prices rise relative to income, you would expect fewer people to be able to afford. For example, in the 2007 boom, the ratio of house prices to income rose to 5. At this level, house prices were relatively expensive, and we saw a correction with house prices falling.

Information source: *self consideration*

(Data source: [\*House price to income ratio in the United States from 1st quarter 2015 to 2nd quarter 2020\*](#))