

Analysis on the US Housing Market During the Fed's 2022-2023 Rate Hike Cycle

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ABSTRACT

As a result of the stimulating monetary and fiscal policies during the Covid-19 pandemic, the interest rate in the US has reached close to zero and the inflation rate has reached an unprecedentedly high level—seven percent in the year 2021—due to problems of the supply chain. The Fed has announced its plan to increase rates multiple times in the year 2022. This paper aims to analyze and estimate the effects of raised rates on the housing market in the US during the upcoming rate hike cycle. The result shows that the house prices will cool down but are not likely to decrease because firstly, based on historical data mortgage rates do not usually go the same direction with the Fed's rate changes; in addition, there is substantial inertia in house prices and changes in interest rates affect house prices gradually rather than on impact. Finally, unlike previous rate hikes raising interest rates would not solve the supply chain problem which is the primary cause of inflation during the pandemic; therefore, if inflation stays high, house prices will stay high. A thorough analysis on house prices during rate hikes will enable investors to make better decisions on investments, and take acute actions accordingly; for potential buyers who hesitated on the high price in 2021 or are looking for a permanent residency, this paper will provide guidance on mortgage rates fluctuation and projection on house prices.

Keywords: *House price, interest rates, Federal Reserve, rate hikes, monetary policy*

1. INTRODUCTION

The Federal Reserve has signaled that it will begin raising its benchmark interest rate—specifically the federal funds rate—as soon as March. The Federal Reserve believes that with the United States' labor market strong and inflation surging high above the central bank's annual 2% target, now is the time to raise its benchmark rate from near zero. The objective of this paper is to estimate the impact of the upcoming rate hikes in 2022.

The Fed had followed expansionary monetary policies and dramatically reduced its key rate after the pandemic recession erupted in 2019. The objective was to support the economy by encouraging borrowing and spending. The Labor Department [1] reported that consumer prices jumped at a 7.5% annual pace in January 2022, higher than the 7.3% expected. That's the fastest pace since 1982 and put pressure on the Federal Reserve and other central banks to accelerate their withdrawal from the unprecedented stimulus introduced in the early stages of the pandemic. By making loans gradually costlier, the Federal Reserve hopes to contain the surging

CPI increases that have been squeezing consumers and businesses.

Because of Covid-19 safety controls, many workers switched to online working and needed self-isolation. The increased demand for housing and low interest rate fueled house price booms. Limited availability in desired areas also caused people to bid up the price of homes. The median house prices increased nearly 25% compared to pre-Covid period.

By employing historical data, this paper analyzes the relationship between interest rate and house prices, contingent on the rate hikes in 2022. A comprehensive study on the housing market during the rate hike period is significant to companies, consumers, and investors. It enables them to forecast asset prices, the stock market, interest rate futures, and make adjustments to their investment portfolios and investments in durable assets.

2. LITERATURE REVIEW

The projection of house prices during rate hikes are hotly debated. While some believe that house prices will decrease as demand falls and mortgage rates rise with

interest rates, others believe demand for houses and house prices will stay high as many potential buyers were pushed out of the market in 2021.

Previous empirical studies on the housing markets have examined the impact of increased rates, both on rental prices or mortgage rates [2]. Kau and Keenan argue that there is an inverse relationship between interest rates and the immediate demand for durable assets, meaning demand is depressed by higher interest rates and house prices would fall as a result.

However, Aldridge [3] and others have challenged the importance of interest rate in affecting house prices. Low mortgage default rate coupled with a basic supply-and-demand imbalance have created a strong seller's market that could last many years. Aldridge also argued that since the supply of housing is inelastic, there is no interest effect on supply, so rising interest rates must lower house prices. Other studies suggest that interest rate increases could reduce the number of housing starts [4-7], thus decreasing supply and pushing prices even higher. The shortcoming of these studies is that they use nominal interest rate because real interest rate is usually difficult to determine, therefore they do not accurately measure the impact of the real interest rate.

This paper analyzes the housing market without the constraint on whether nominal or real interest rate is used, while taking in consideration of both supply and demand effects.

3. ANALYSIS ON THE US HOUSING MARKET

3.1. Historical Data

There is no direct correlation between increasing rates and the borrowing costs for housing. Mortgage rates do not usually rise together with the Fed's rate increases, contrary to intuition, and sometimes they even move in the opposite direction [2]. Long-term mortgages tend to follow the 10-year treasury rate, which is influenced by various factors. These include investors' expectations for future inflation and the global demand for US treasury bonds. Under this circumstance when inflation is expected to stay high, investors tend to sell treasury bonds because the yields on bonds provide little to no return once accounting for inflation. On one hand, as that happens the selling pressure on the bonds tends to force treasuries to pay higher returns. Yields then rise in response, resulting in higher mortgage rates. On the other hand, even when Treasury yields are comparatively low relative to inflation, as they are now, investors often still purchase enormous amounts especially during times of global turmoil. This is because nervous investors from around the world often invest heavily into Treasuries to ensure a steady and safe return so their cash does not depreciate. The buying pressure could have the effect of keeping mortgage rates relatively low. Thus, the change in long-term mortgage rates is ambiguous.

Furthermore, in the US, mortgage rates are predominantly fixed rates, as a consequence average borrowing costs for housing are not sensitive to fluctuations in monetary policy rate.

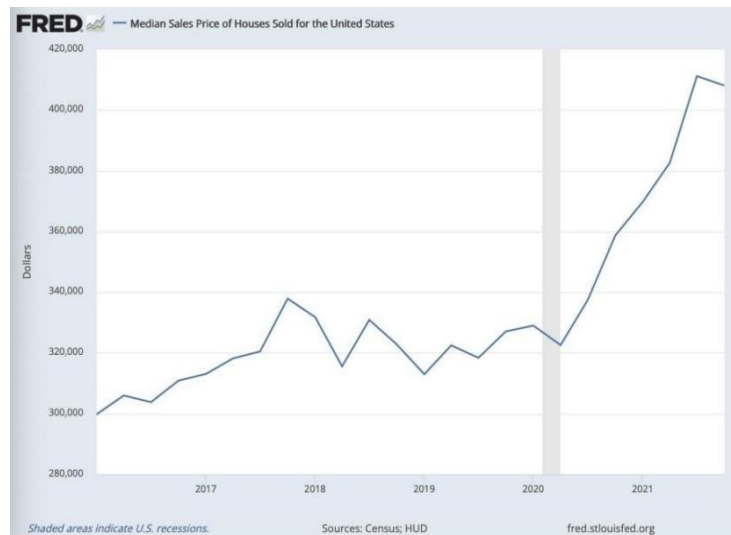


Figure 1. Median Sales Price of Houses Sold for the United States [8]

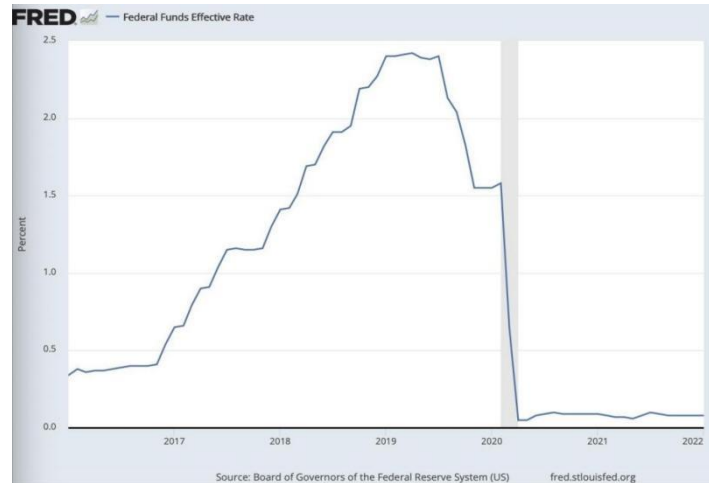


Figure 2. Federal Funds Effective Rate [9]

Based on the Federal Reserve Economic data, the federal funds rate followed an increasing trend from 2017 to 2019, while during the same period the median sales price of houses sold in the US had volatile changes. This suggests many factors could contribute to house price changes, but interest rates do not play a critical role. The ability of a monetary contraction to cool off the housing market is thus relatively weak.

Lastly, the experiment of Jordà and Schularick [10] indicates slowing down a boom in house prices is likely to require a considerable increase in interest rates, probably by an amount close to 8%. The Fed’s most recent dot plot indicates that the median of Fed chairs’ forecasts puts the federal funds rate between 0.75% and 1% in late 2022 and between 1.5% and 1.75% by the end of 2023. From the current federal funds rate target of 0.25%, this increase is far from an increase of 8%.

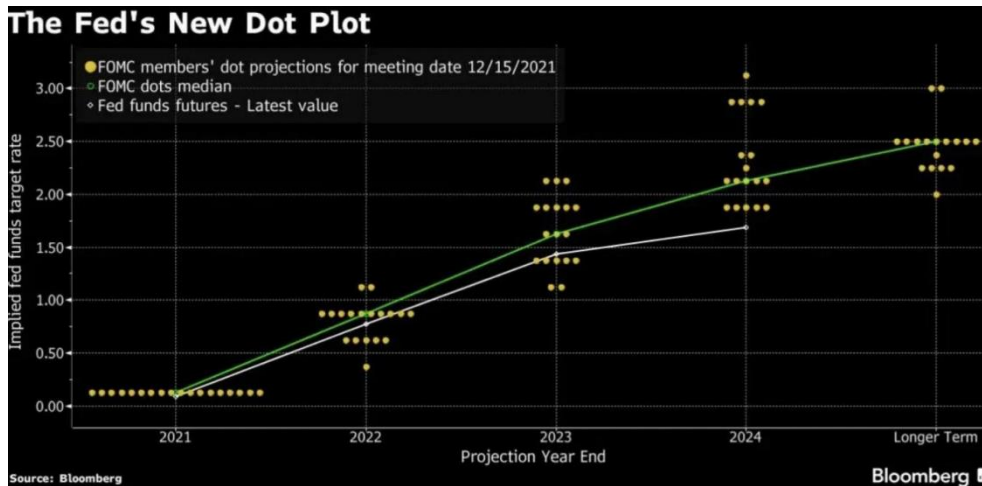


Figure 3. The Fed’s New Dot Plot After Its December Rate Meeting [11]

3.2. Inertia in house prices

House prices display inertia and changes in interest rates from previous years may still be affecting house prices in the current period. Sutton and Mihaljek [12] documented this inertia in house price movements in their paper. They find that changes in interest rates lagged by eight quarters in the United States and are negatively correlated with current changes in real house prices; this negative relationship is statistically significant in all their samples. Thus, changes in interest rates and other determinants affect house prices gradually rather than immediately. This suggests that modest raises in policy rates are not likely to rapidly fuel house price increases.

Their finding that a 1% decline in the US short rate leads to a 5% increase in house prices after three years suggests the impact of this coming rate hike will not manifest itself during the cycle.

Similarly, after analyzing data through the first half of 2007, Jarociński and Smets found that America’s real house prices fell by 0.5%, relative to baseline, 10 quarters after a surprise 25 basis-point rise in the federal funds rate [13]. These evidence suggest that inertia plays a crucial role when projecting house prices according to interest rate changes.

One of the explanations is housing is an example of durable consumption that is accompanied by high

transaction costs, implying that the demand for housing adjusts slowly in response to changes in interest rates and other changing variables. Given this prolonged response, mild rises in federal funds rates are not able to rapidly decrease house price.

3.3 Inflation and the supply chain

The goal of monetary policy tools, especially federal funds rate hikes, is to stabilize inflation, promote maximum employment and a healthy economic environment while supporting long-term economic growth. The goal of these coming rate hikes is to suppress the unprecedentedly high inflations, given the labor market is stable and healthy.

However, a pitfall is if the economy is hot and approaching full employment, a full-scale reversal of these inflationary pressures is just unlikely. The overall headline CPI might ease a bit, but consumers are still going to be dealing with overall inflationary pressures well above what they were accustomed to. This will continue until the Fed tightens enough to slow overall aggregate demand in a sustained fashion. Inflation will only return to normal at this point, until that happens, consumers are going to be dealing with persistent above-trend inflation.

Furthermore, the inflationary problem cannot be solved at this point because challenges in the supply chain are the driving forces behind it. Shortage in supply in all sectors of the economy, ranging from essential commodities such as food and medicine to social infrastructure, has been present since the pandemic, and is unlikely to be solved in short terms. In Suzuki's paper [14] which researches the global supply chain post-Covid period, the remedies many countries are seeking to accomplish will not resolve supply chain vulnerabilities overnight, meaning a long-term perspective is necessary. In addition to the unavoidable restrictions on corporate activity caused by Covid-19, companies whose balance sheets have been ruined will also have limited resources for major investments that would significantly enhance their supply chains. Moreover, in some production sectors, the size of the manufacturing base in China is extraordinarily large, making short-term substitution to other markets difficult especially for multinational businesses. For example, China's share of global exports machinery and electrical equipment is over 20%, and China's share in the garment sector is over 40%—a number that is significantly large in global exports (Bangladesh, Vietnam, India, Germany, and Italy)[14].

As a consequence the shortage shifts the supply curve leftwards, thus increasing overall price level for a prolonged period of time. Until finally the emergency of supply chain is eased, the house prices are likely to stay high.

4. CONCLUSION

This paper provides a microeconomic analysis, based on empirical data, of house prices during and immediately after the Fed's 2022-2023 rate hikes. Using multiple approaches, this paper presents a decomposition of the effect of increased interest rates, especially in the housing market. There is no reason for the interest rate to have any direct and significant influence on housing markets in the short run.

Historical data demonstrates that increased rates are not correlated to mortgage rates, and the coming hikes are not enough to significantly impact house prices. Moreover, house prices display inertia and protracted changes due to its durable nature and high transaction costs. Finally, inflation could not return to normal after the hikes this time since the supply chain challenge would be present for years.

Rising interest rates would certainly have a chilling effect on housing prices and housing demand in a short period of time. However, not surprisingly, demand and prices skyrocket as consumers try to move quickly before the interest rate rise actually happens. Consumers and investors are likely to see a rise in prices and a cooling period when hikes kick in. After all, the normal supply-demand mechanisms would bring back the balance.

All the above reasons highlight the immediate result of the rate hikes is possibly a gradual rise in mortgage rates, decelerating house prices, but this will likely happen after the rate hikes and the degree of increase would not necessarily cause house prices to decline.

AUTHORS' CONTRIBUTIONS

This paper is independently completed by Yuxiao Chen.

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