Rising Rates & Inflation Impact on Single Family Rental Strategies

Over the past four months we have seen a macro backdrop of runaway inflation prompting the Federal Reserve to accelerate plans to tighten monetary policy, ultimately increasing benchmark interest rates faster than in any comparable period since 2000.[1] These rate hikes, coupled with record Home Price Appreciation ("HPA"), market volatility and general concerns over the economy, have left investors pondering what this means for the housing market, and in particular, Single-Family Rental ("SFR") investment strategies.

Our view is that over time rising rates will likely soften the housing market around the edges. However, given the current macro backdrop – particularly, the inflationary environment and the **largest undersupply of homes historically** – we believe the recent and projected rate increases will not undermine our ability to continue to achieve compelling returns in our SFR strategy.

In our SFR Commentary, we cover several topics, including the relationship between rates and housing, current technicals and fundamentals of the housing market, and the key drivers shaping our views on the housing market in general, and SFR in particular.

Relationship Between Interest Rates and Housing

In analyzing how movements in rates may impact the housing market and SFR, it is essential to understand the correlation between HPA and rate movements. While many believe there is an inverse correlation between rising interest rates and housing prices, we believe the data does not support that conclusion. **Over the past 45+ years** there has been a **low, but positive, correlation between HPA and the 10-year U.S. Treasury** at +11.0% (See **Exhibit I** on the next page). That being said, while there have been times when housing and rates have gone up together, there have also been times when housing was down in a rising rate environment. This is because no two cycles are exactly alike and, therefore, to analyze how housing will perform in this environment it is important to understand the macro backdrop and why rates are rising.

Taking a step back, our analysis begins with the current cycle and how we got here today:

2020

- COVID-19 Pandemic began in March, Fed cuts policy rates to zero bound, Quantitative Easing program rolled out
- CARES Act: Stimulus checks and Paycheck Protection Program (PPP) deployed
- Interest rates hit record lows

2021

- Economic recovery continued: Unemployment trended lower, although labor force participation remained weak as stimulus helped bolster the average consumer
- Post-Q1 inflation steadily rose → CPI +5% YoY in June 2021[2,3]
- Fed maintained inflation was "transitory" all year,[4] CPI hit +7% YoY in December,[2,3] Fed acknowledged that inflation was no longer "transitory" at the December meeting[4]
- Interest rates began to creep higher
- Housing market experienced high demand and low supply, resulting in robust HPA

2022 to date

- Inflation was persistent during Q1, accelerating the timeline for Fed's tapering of asset purchases and the first rate hike
- March FOMC included 25 basis point hike, followed by 50 basis points at the May meeting
- Interest rates rapidly increased and equities plummeted
- CPI peaked at +8.6% YoY for May,[2,3] missing forecasts and reaching fresh 40+ year highs, bringing renewed expectations for further rate hikes

Where Does This Leave Us Today? How Does Housing Fit the Equation?

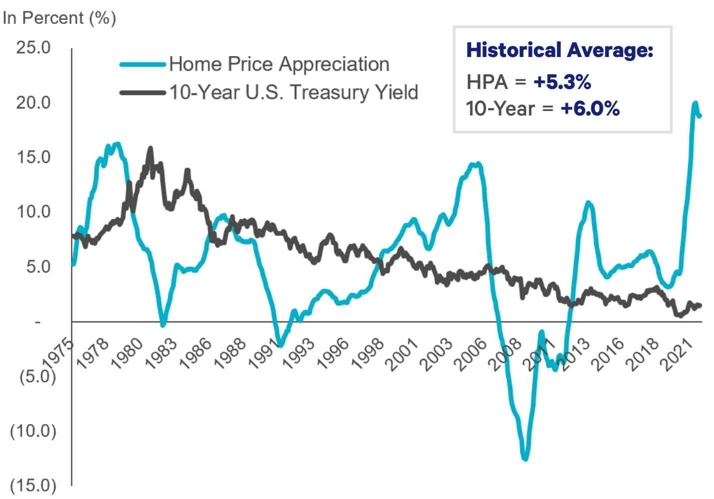
In boiling down the past 2+ years, we believe the key takeaway is the U.S. economy was over-stimulated in response to the pandemic. Too much stimulus, coupled with supply-side constraints, drove inflation, while Fed action has been behind the curve. With inflation running high, the Fed is now rapidly trying to catch up and stabilize prices, a key component of its dual mandate.

Ultimately, while rising rates can bring headwinds for housing, we view the current inflationary environment as a very positive tailwind given how housing has performed relative to inflation.

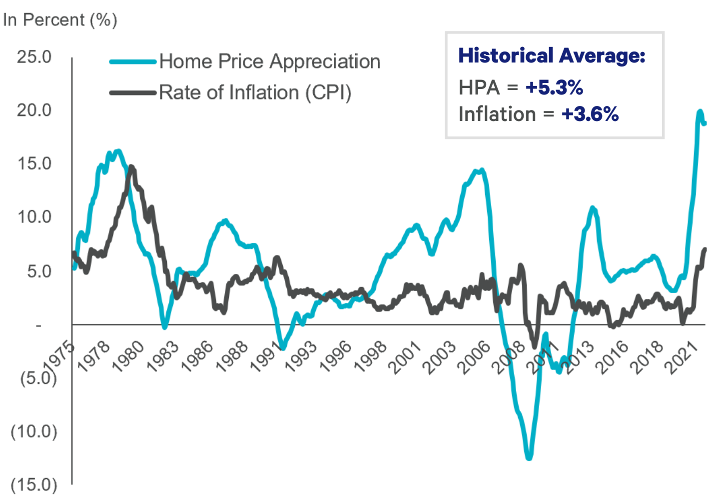
In particular, **HPA and inflation (CPI) exhibit a much higher correlation (than rates and HPA) at +35.0%**. HPA has also historically outpaced inflation, with +5.3% average HPA and +3.6% average inflation during the same time period (**Exhibit I**).[2,3,5,6] For example, during the last hyperinflationary period in the early 1980s, when interest rates reached all-time highs, housing was resilient (**Exhibit III** on page 4).

Exhibit I

HPA vs. 10-year Yields – 1976 to 2021[2,5,6]



HPA vs. Inflation (CPI) – 1976 to 2021[2,3,6]



We believe this is because homes (which represent a **bundle of inflationary goods** (raw materials, appliances, consumer products, etc.)) are a great natural inflation hedge. Of course, high inflation alone, without corresponding wage growth, could soften this correlated relationship, but we believe that the continued wage growth as a product of tight labor markets[7] and lingering supply/demand constraints will support this view.

While inflation may be good for acquiring already built homes, it creates some headwinds for certain SFR strategies like Build-to-Rent "BTR". Rising inflation has made new construction increasingly difficult to execute given **rising input costs**. Together with **labor shortages** and **supply chain issues**, new construction can take longer to complete and has experienced an overall increase in costs. This is one reason we believe our core strategy of buying already built homes on a 1x1 basis is a great investment to be making right now – investors can get long homes (and inflation) now as opposed to potentially long and costly timelines. That being said, we still believe managers can execute BTR strategies at very attractive levels, provided they proceed with caution and ensure they have the right experience and **enter into the right partnerships** to manage these risks. For now, for Cerberus, this means supplementing our 1x1 acquisition strategy by focusing on lower risk development strategies with much shorter lead times (e.g., mainly by buying directly from builders at a discount to retail with the ability to pay at certificate of occupancy, fixed pricing, and small deposits in escrow). With the right arrangements we believe we can take little to no development risk, protect ourselves against rising costs and buy homes at slightly wider cap rates than retail. We believe this approach will provide solid additional flow for our 1x1 acquisition strategy and healthy risk-adjusted returns. We will continue to cautiously assess additional development strategies as the market continues to evolve.

Impact of Rising Rates on Cerberus SFR Strategy's Returns

SFR is a total return strategy composed predominantly of two components: (i) HPA and (ii) rental income. At a high level, HPA is driven by technicals and fundamentals which include supply/demand dynamics, home sales, and affordability, among other factors. Rising rates undoubtedly make owning a home more expensive and can result in fewer homes trading (or homes trading at lower prices). In fact, we have seen home sales recently dip in consecutive months[8,9] along with recently declining mortgage applications (though time will tell if this is seasonal or a new trend). While these factors could affect HPA, our view is that, given the technicals and fundamentals, we do not see housing going negative or "crashing", but rather believe there will eventually be a steady softening in the market over time (e.g., annual HPA will steadily work its way down from ~19% per annum nationally last year to be closer to the historical average of 5.3%).[2,5,10]

Following 2021's impressive HPA, investors often ask if they missed this trade. Unequivocally, our view is – Absolutely Not! A potential softening of the market over time does not mean that it is a bad time to invest in SFR or that investors have "missed the trade". To the contrary, Cerberus initially invested in SFR in 2015 conservatively assuming historic averages on HPA. We thought it was a very compelling investment back then given the ability of the asset class to generate compelling risk-adjusted returns with low correlation and low volatility.

We believe it is rare to come across an opportunity with these characteristics that can be invested in at scale. While the outsized HPA has been great (and may continue for some time given the current short squeeze on housing), it is not needed to generate a healthy return for investors. Rather, we believe over the long-term investors can achieve compelling risk-adjusted returns utilizing modest leverage and modest assumptions on HPA at the historic average (5.3%).[11]

We are also of the view that while the housing market may soften, Americans are not going to stop buying homes because of rising rates, but rather they may simply "buy down" (e.g., a smaller or more affordable home). Even if fewer people buy homes due to rising rates, we believe this will tip the scale in favor of renting, which will drive demand for SFR and result in positive rental growth. Therefore, if HPA flattens out, we believe we may potentially pick up total return through rental growth. That being said, we acknowledge that state and federal regulators have been focused on rent growth and affordability. While no laws have been passed that could materially affect our strategy in the states we are buying, we will continue to monitor how this could impact our platform in the future. It is important to note that we are very sensitive to these political issues and are a compassionate landlord that is committed to resident experience, utilizing fair policies and implementing various initiatives and economic assistance programs to support residents in all aspects of life. Our commitment to resident experience is evidenced in our resident satisfaction rating, specifically that we have the highest life-to-date rating of 4.1 out of 5.0 across both public and private SFR peers.[12]

For any housing strategy, it is also important to understand how rising rates impacts the cost of funding, which can reduce the cash-on-cash return. Cerberus has utilized securitization in its existing portfolios to lock in non-recourse, non-MTM, long-term financing at attractive rates, in an effort to mitigate exposure to rising rates. We have also purposefully retained bonds from our securitizations which can be sold into the market to manage our effective leverage without issuing a new securitization at higher rates. That being said, as we increase the size of the portfolio, the newly funded homes will be at a higher cost of funds as rates continue to rise. However, our view is that with modest HPA and rent growth, and other ways to drive performance, we can still achieve a compelling total return even if the cash-on-cash return is softer or flattens out. For example, even without rent growth and HPA across the country, there are also many levers to pull to drive returns and alpha within SFR, ranging from (i) investing in markets that have characteristics that should drive housing performance (e.g., buying in affordable areas with above average population growth, employment growth, and income growth) to (ii) driving NOI margins as we continue to gain economies of scale by utilizing our industry-leading technology to drive operational efficiencies and cut costs.

Technicals and Fundamentals

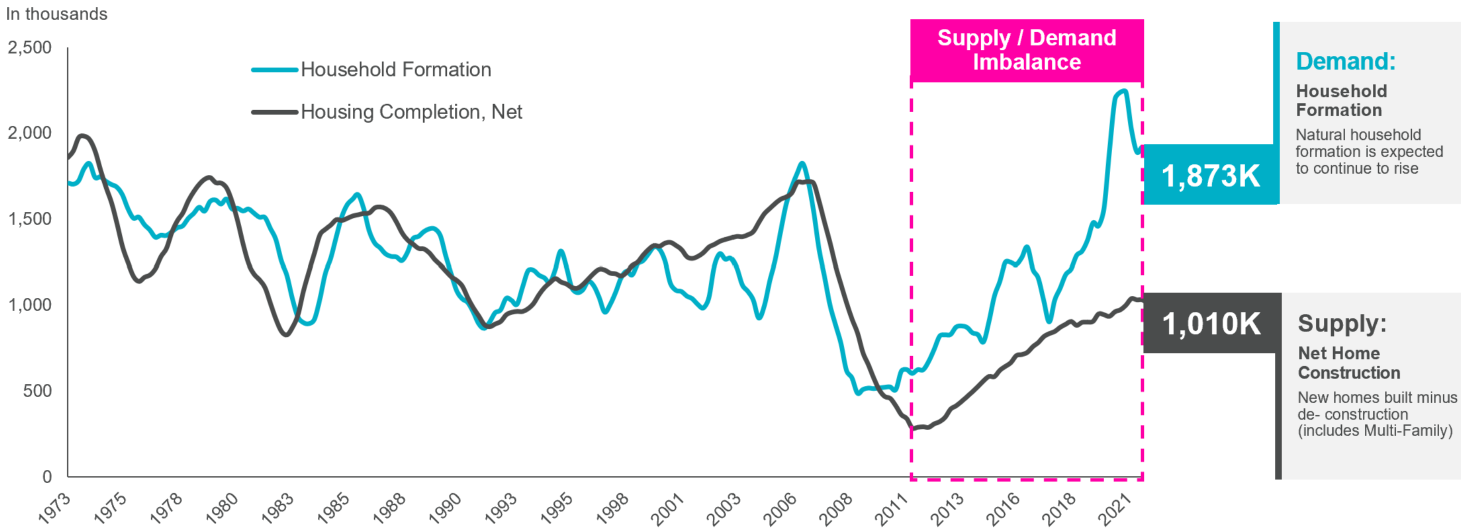
On the technical side, we are still in the **largest housing shortage in history**. The supply/demand imbalance has lasted for over a decade, and we believe it will continue to drive housing prices. Looking back at historical data, household formation has been outpacing new construction; there are ~1.9 million new households formed every year (prior 24-month quarterly moving average) but only ~1.0 million new homes completed each year (net completion rate, subtracting any deconstruction), creating a housing shortage of roughly ~0.9 million net annually (**Exhibit II** on page 4).[12, 13]

The origin of the housing supply shortage dates to before the Great Financial Crisis ("GFC"). As discussed later, 2008 was a real housing bubble and very different from today, which created extremely high demand and homebuilders reacted, ultimately delivering a large supply of new homes. Fast forward through the GFC, borrower defaults and foreclosures skyrocketed. As financial institutions took ownership of foreclosed homes and subsequently sold into the market at steep discounts, housing prices sharply declined through 2012, and builders stopped building.

Post-GFC, the demand side of the equation has largely been driven by those of family formation age (20-39), who are a larger population cohort than Baby Boomers, driving household formation by starting families and looking to purchase homes. In fact, this trend started before the pandemic, and has only been perpetuated further. Work-from-home ("WFH") has emerged from the pandemic, with many people looking to relocate from apartments into detached homes, while also relocating from colder, higher taxed areas to warmer, lower tax rate states.

With such low supply today, it is hard to fix an issue that has been exacerbated over the past 10+ years. Builders are producing homes today, which will help bring more supply to market. But

Exhibit II: Household Formation vs. Net New Home Construction – Q1 2022[12, 13]



land shortages, zoning regulations, labor shortages, supply chain and increased cost dynamics are making it more difficult to fix the shortage.

While new development will eventually bring the delta between net new construction and household formation/demand closer together, we also think there are several opposing trends that will put pressure on housing supply and add to the technical tailwinds. First, we believe rising rates will result in "mortgage lock" and reduce the number of homes put up for sale. Specifically, the average homeowner has an existing mortgage with a low rate and may be less inclined to sell their home if they have to enter into a more expensive mortgage for a new home. Second, average length of stay (hold period) for homeowners has steadily increased, reaching 13.2 years in 2021, up from 10.1 years in 2012.[14] "Aging in place" is becoming a more popular trend and people staying in their homes for longer, keeping houses off the market, will further restrict the available supply of homes. For our strategy, which focuses on homes at the average price point in the market, we also have unique supply/demand characteristics because we are seeing a lot of new construction being completed at higher price points (keeping the delta between supply and demand for our homes lower).

On the fundamental side, we believe the consumer is in a strong position given wage growth, low debt and increased savings. In addition, despite the recent rise in mortgage rates, current rates remain on the lower end of history. For example, taking a 30-year fixed rate mortgage, the historical average dating back to 1970 is 7.7% compared to 5.1% currently.[15] There have been many instances where we have seen notable highs in mortgage rates: (i) ahead of the GFC, rates peaked on June 30, 2006 at 6.8% (ii) amidst the Dot-Com bubble, hit 8.2% on March 31, 2000 (iii) during the 1980s, leading up to the Savings & Loan Crisis, rates peaked at 18.4% on September 30, 1981.[15] While these are extreme cases, the takeaway is that current rates remain below historical averages.

That being said, despite the technicals and fundamentals, some investors are worried that a recession is inevitable and how that may impact the housing market and SFR asset class.

Economic Recession vs. Crisis

With all the previously mentioned macro themes factored in, there has been renewed discussion of economic recession risk over the next 12-18 months. The U.S. has sustained multiple recessions throughout history and similar to rate cycles, each one has its own characteristics. However, it is **important to distinguish between an economic recession and a crisis**, as housing has often performed decently in a recession, but not a crisis (**Exhibit III** on page 5).

Our view is that even if we enter into a recessionary environment, we are not entering into a crisis that would lead to housing going negative in the medium term.

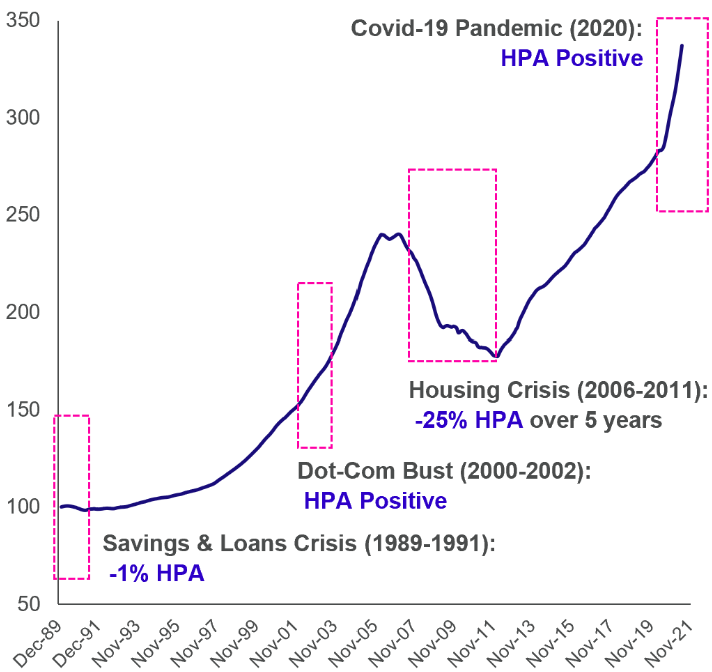
Looking back at various periods in history, there have only been two periods where housing went down. Once during the Savings & Loan crisis (although driven regionally by S&L institution failures and not nationally), and once during the GFC (**Exhibit IV** on page 5), which was a very different period for housing.

While we could dedicate an entire article to the shortcomings of the housing market leading up to the GFC, it is important to understand the backdrop that lead to the GFC (and how the market is completely different today). In 2008, we had a real

Exhibit III

Recession Name	Time Period	Length of Recession	HPA[5] One Year Prior to Recession	HPA[5] During Recession	HPA[5] One Year After Recession
Savings & Loans Crisis	July 1990–Mar 1991	8 months	2.4%	-2.2%	0.9%
Dot-Com Bubble	Mar 2001–Nov 2001	8 months	9.0%	4.9%	9.3%
Great Financial Crisis	Dec 2007–June 2009	1 year 6 months	-4.6%	-15.4%	-1.6%
COVID-19 Pandemic	Mar 2020–[June 2020][16]	4 months	4.3%	1.0%	16.6%[17]

Exhibit IV: HPA Since 1989[18]



housing bubble that was propped up by financial engineering, an increase in the amount of subprime lending, bad lending practices, an over-levered consumer, fraud and poor regulation. Many consumers were able to obtain financing with no money down, no income verification, very little underwriting, and in some cases negative amortization. Meanwhile, banks created complex derivatives backed by sub-prime and other risky mortgages originated in this loose lending environment. Ultimately when mortgage defaults spiked, these risky, synthetic instruments exacerbated the severity of situation and further contributed to the housing crash.

Housing dynamics today are very different from 2008, with a much more stringent regulation of financial institutions and lending practices, a much stronger consumer, and record homeowner equity driving all-time low LTVs (though we note this could spark 2nd lien and home equity loan origination, balancing LTVs). So this is not like the build-up to the GFC at all – the macros behind the housing market today (and regulatory framework governing the market in general) are in sharp contrast to the GFC and today's housing market is more stable and fundamentally sound.

Closing Thoughts

While some may believe that rising rates will cause HPA to halt or turn negative in the near term, our view is that the inflationary environment, coupled with the current technicals and fundamentals, will provide strong tailwinds to offset certain negative effects of rising rates. We believe housing performance will eventually normalize over time and have a soft landing where we will see HPA perform closer to historic averages. We also believe that rising rates may tip the affordability scale in favor of renting vs. owning, which will drive rental growth and offset the effects of a potentially softer housing market. For these reasons we believe SFR will continue to be an attractive opportunity over the long term, and that investors should be allocating a portion of their real estate portfolios to this massive (and under-invested in) asset class as a long-term hold.

End Notes

[1] Federal Reserve, Board of Governors of the Federal Reserve System, Open Market Operations Archive. https://www.federalreserve.gov/monetarypolicy/openmarket_archive.htm

[2] Past performance is not indicative, or a guarantee, of future results. There is no guarantee that the market trends will continue.

[3] Bloomberg, Inflation / Consumer Price Index (CPI YoY) for period starting 1976, as of April 30, 2022. Housing costs comprise nearly a third of CPI basket weights.

[4] Federal Reserve, Minutes of the Federal Open Market Committee December 14-15, 2021.

[5] Bloomberg: Case-Schiller U.S. National Home Price Index, reference period as of December 31, 1975 - December 31, 2021.

[6] Bloomberg, U.S. 10-Year Treasury Yield for the period starting 1976, as of December 31, 2021.

[7] Federal Reserve Board of Governors, Christopher Waller, May, 30, 2022. https://www.federalreserve.gov/newsevents/speech/waller20220530a.htm

[8] U.S. Census Bureau, US New One Family Houses Sold SAAR, as of April 30, 2022.

[9] National Association of Realtors, US Existing Home Sales SAAR, as of April 30, 2022.

[10] HPA is only one component of calculating gross returns. As a result, the stated HPA of the commingled portfolio for this period does not represent the performance or return (even gross return) of the commingled portfolio or any specific Cerberus fund or account for any period of time. It should not be assumed that the commingled portfolio or any specific Cerberus fund or account experienced or will experience returns similar to the stated HPA. In addition, gross returns do not account for the effects of leverage or reductions for fund expenses, management fees, or performance compensation. Accordingly, net returns to investors will be lower than any gross investment-level returns.

[11] The assumptions used in calculating the illustrative gross asset-level returns are only one set of many different potential assumptions that could have been made or used. If different assumptions were made or used, the results could be materially different from those shown above. Cerberus makes no guarantee or representation that any of the assumptions used herein will be realized. The returns set forth herein do not purport to represent the returns of any Cerberus fund or group of Cerberus funds. Rather, this illustrative example is being provided to demonstrate how various assumptions may affect the total return of the Cerberus SFR strategy. Actual returns will be dependent on market conditions and SFR asset realizations and will likely be materially different from the returns set forth herein. All returns are gross investment-level returns and do not include reductions for fund expenses, management fees, or performance compensation. Net returns to investors will be lower than the gross investment-level returns shown herein.

[12] A third-party service provider aggregates online public reviews from Google, Trustpilot, BBB, and Yelp to generate a consolidated review score (1-5). Demonstrates lifetime cumulative score of FirstKey Homes compared to SFR Peers, as of Q1 2022. Does not account for internal surveys from FKH or SFR Peers.

[13] U.S. Census, Household Formation – Housing Vacancies and Homeownership Historical Tables; based on 2-year quarterly moving averages, as of Q1 2022 , with Cerberus estimates as of Q4 2021.

[14] Bloomberg (Ticker: PHUCTOT), New Home Construction, as of Q1 2022. “Net Home Construction” is defined as new homes built subtracted by deconstructed homes, and includes multi-family. Certain information contained herein is based on Cerberus’ proprietary residential housing models. Such models were created by Cerberus based on historical data and certain assumptions based on Cerberus’ investment experience. Projections based on such models may not materialize. Cerberus estimates as of Q4 2021.

[15] Redfin Analysis of Homeowner Tenure, March 2022. https://www.redfin.com/news/2021-homeowner-tenure/

[16] Bloomberg, Freddie Mac US Mortgage Market Survey 30 Year Homeowner Commitment National. (Ticker: NMCMFUS), as of April 30, 2022.

[17] Center for Business and Economic Research did not officially call off the recession, June 2020 is a most accepted estimate, as of March 31, 2021.

[18] 16.6% “HPA one year after recession” is May 2020 to May 2021, based on the most recent data available, as of June 30, 2021.

[19] Bloomberg: Case Schiller Home Price Index, reference period as of December 31, 1989– June 30, 2020.

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