FEBRUARY 2023

Navigating Market Downturns

A retrospective of factors that contributed to current conditions and an outlook on where we go from here

BY MARK G. ROBERTS

To paraphrase an oft-used quote that has been attributed to Mark Twain, "History doesn't always repeat itself, but it often rhymes." Looking at the current state of the real estate market in the context of the broader economy, we can certainly learn lessons from the past. And by applying analysis of the trends that emerged from previous downturns, we can try to anticipate what to expect in the months and years to come, especially as it relates to real estate valuations and the factors that can influence them.

> ***History doesn't always repeat itself, but it often rhymes.***
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> MARK TWAIN

KEY HIGHLIGHTS

- There are five key indicators to monitor that can "kill a real estate cycle."
- While conditions seem ominous today, the U.S. has yet to enter a recession.
- Compared to stocks and bonds, real estate returns have had the highest correlation to growth in GDP over the last 20 years.
- Households are seemingly well situated to weather a slowdown and can support GDP growth.
- Private real estate performs much better when unemployment is declining.
- The stock and bond markets have largely stabilized. If this continues, the so-called denominator effect on private real estate may be waning.

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Peak-to-Trough Value Losses in Times of Economic Uncertainty

There are five key factors that have typically led to the demise of a real estate cycle in the past, with some interdependencies among them. They are:

1. A recession, which leads to rising unemployment and less tenant demand for real estate.
2. Excess leverage and debt, which eventually lead to…
3. Rich real estate valuations as seen in either cap-rate levels relative to treasury yields and whether public REIT prices reflect a premium or discount to their underlying NAV.
4. Excessive new construction.
5. Wider credit spreads, due to the combination of these factors.

In the last 40 years, we've only had two instances of a massive repricing of real estate: One occurred starting in 1989 and the other during the global financial crisis. In each of those instances, all five "killers of a real estate cycle" were present, namely, a recession, high levels of debt, and excessive new construction, which ultimately led to wider credit spreads and a repricing of real estate risk.

EXHIBIT 1

Prior Economic Events & Factors Which Influenced Real Estate[2]

REAL ESTATE DRIVER	OVERSUPPLY	EXCESS LEVERAGE	RICH VALUATIONS	DEEP RECESSION	PEAK-TO-TROUGH
Early 1980's Double Dip Recession	✗	✗	✗	✗	+ 5.1%
Early 1990's S&L's & Gulf War	✓	✓	✓	✗	- 32.3%
Early 2000's Tech Bubble, 9/11	✗	✗	✗	✗	- 3.5%
2007-'09 GFC	✓	✓	✓	✓	- 31.5%
COVID - 19	✗	✗	✗	✓	- 2.7%

While conditions seem ominous today, there are several reasons for cautious optimism. First, the U.S. has yet to enter a recession. Indeed, despite the rapid increase in interest rates in the last two quarters of 2022, the economy grew 3.2% in the third quarter and 2.9% in the fourth quarter. Second, as evidenced by the NCREIF Open-End Diversified Core Equity Index ("NFI-ODCE"), leverage levels remain low for core real estate (21.5% loan-to-value as of 3Q 2022).

True, construction levels have increased, but the amount of construction spending as a share of GDP is only about 2.2% – still in line with the long-term average – and development is still catching up with tenant demand. Indeed, except for the office sector, occupancy rates are equal to or greater than their long-term average. Third-quarter data from NCREIF shows that occupancy rates are equal to or above their long-term average for apartments (94.1% versus 93.3%), industrial (98.5% versus 93.0%), and retail (92.2% versus 92.4%). Only office is lagging, with a leased rate of 87% versus 87.3%. And while lending rates have risen in lockstep with the Federal Reserve's increase in interest rates, credit spreads have not risen materially.

One issue of concern for investors today is the rapid rise in inflation-adjusted real interest rates and its potential impact on real estate valuations. Since the middle of November 2021, real interest rates have risen nearly 3.5% from their trough, the steepest increase in the last 20 years. The effect of rising real interest rates has been seen in the stock and bond markets, where values declined substantially in 2022. The steep increase in real interest rates and decline in stock and bond values has real estate investors anticipating a similar scenario for private real estate. In 4Q2022, NCREIF reported that real estate values on assets in open-end funds had declined 5.76%.

Inverted Yield Curve Suggests Recession, Household Balance Sheets and Unemployment Suggest Not

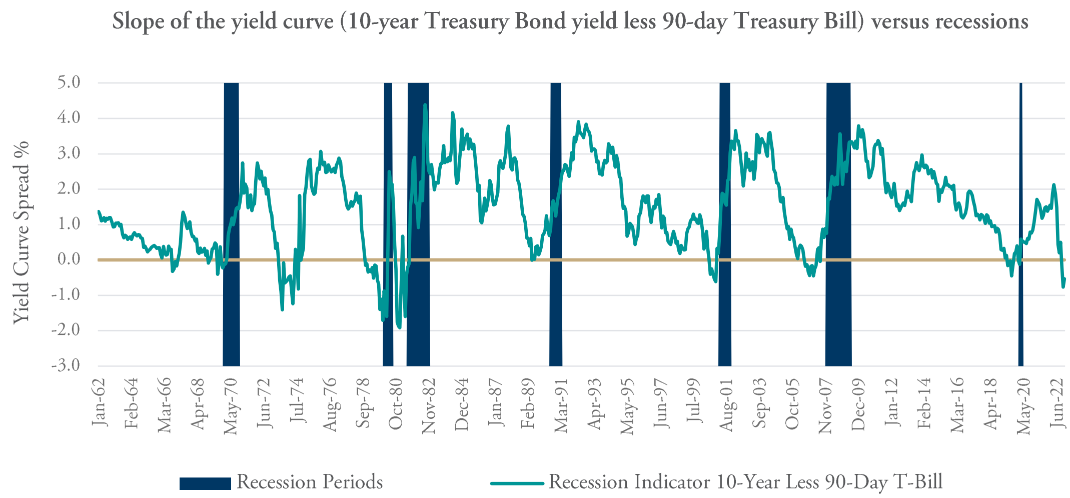
An inverted yield curve has been a good predictor of future recessions, although its track record is not perfect. An inverted yield curve occurs when short-term rates are higher than longer-term interest rates – in this case, when the 90-day Treasury Bill yield is higher than the 10-year Treasury Bond yield. Since the early 1960s, there have been nine instances when the yield curve was inverted, not including the current inversion. In seven of those instances, the U.S. slipped into a recession; there were two instances, in 1966 and 1974, when the U.S. did not.

But other parts of the economy provide reasons to remain optimistic. By and large, households drive the economy. Household spending is responsible for 70% of GDP, which means overleveraged households and rising unemployment can lead to weaker spending, which then leads to less tenant demand for real estate and declining values. Today though, households are in the best shape in nearly 50 years. Their debt-to-assets is only about 11.8%, compared to 19.4% during the GFC. Similarly, their debt-service to disposable income is only about 9.8% as of 3Q2022 compared to the GFC when it reached 13.1%. In turn, household spending grew 2.1% in 4Q2022 while business investment grew 1.4%. The only drawback occurred in certain interest rate sensitive sectors, such as single- and multi-family housing investment, which detracted from growth. Had residential investment not declined, growth in GDP in the fourth quarter would have been 1.3% higher.

EXHIBIT 2

Is the Yield Curve Signaling Challenges Ahead?[3]

The NY Federal Reserve probability of a recession by Dec. 2023 has increased to ~47%.



In addition, household savings heading into COVID was about $1.6 trillion, and ample government stimulus allowed it to increase to $3.1 trillion by the end of 2020. By the end of 2021, it had fallen back to $2.3 trillion, but it remains higher than its pre-COVID level. For the time being, at least, households seemingly have the balance sheets to weather a slowdown and can support GDP growth. If a recession does occur, it will likely be a mild one, thanks to the relative strength and resilience of household balance sheets.

Also, despite the wave of recent layoff announcements, there are still over 10 million job openings, and the unemployment rate remains quite low, which is good news for tenant demand and real estate values. Alongside growth in GDP, unemployment is one of the more important economic indicators for real estate investors to monitor. Significant increases in unemployment drove real estate values lower during the downturns in 1991 and 2009.

EXHIBIT 3

Overleveraged Households Can Drive Cycles[4]

Household balance sheets appear to be resilient: Debt-to-Assets (11.8%) and Debt Service (9.8%) near 45-year lows

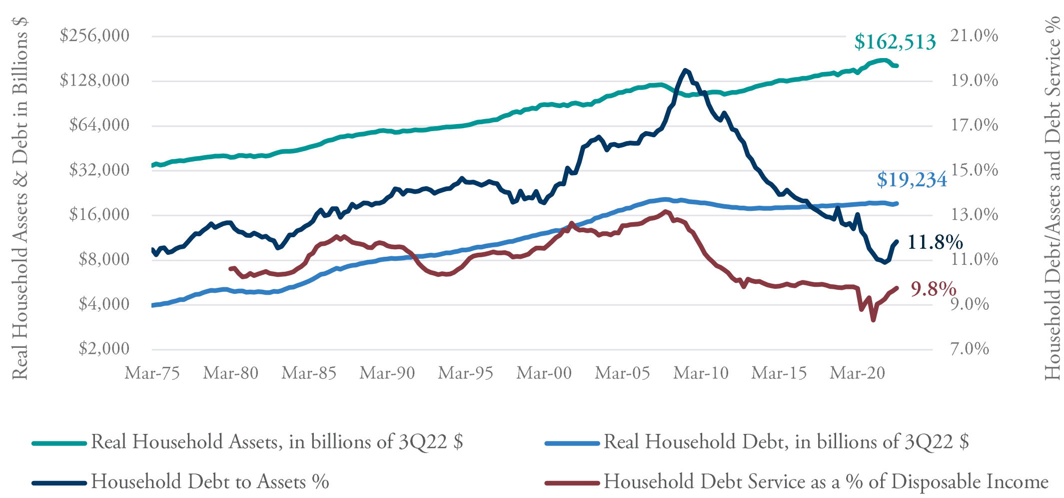
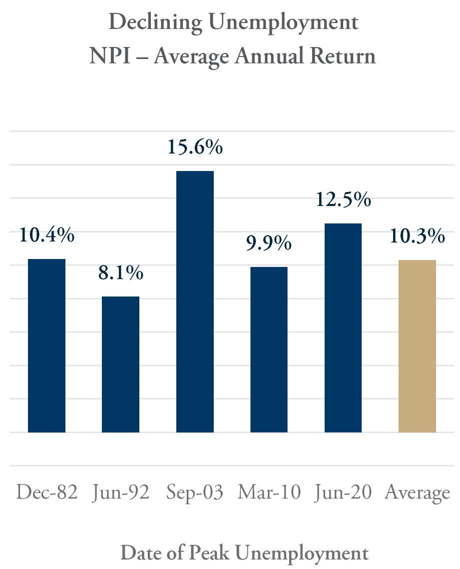
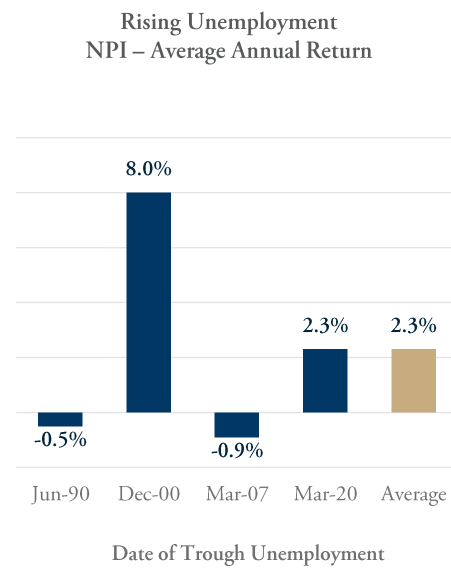


EXHIBIT 4

Real Estate Total Returns Relative to Unemployment Cycles[5]

Declining unemployment cycles last an average of seven years while rising unemployment cycles lasted an average of two years





As Exhibit 4 demonstrates, private real estate as measured by the NCREIF Property Index ("NPI") performs much better when unemployment is declining. Declining unemployment cycles last an average of seven years, and during those years real estate has produced a total return of 10.3% on average per year. Conversely, when unemployment increases, real estate returns are very weak.

Fortunately, rising unemployment cycles last an average of two years and, during that time, unemployment increases an average of 1.25% per year. When unemployment declines, it does so by an average of about 0.5%.

Put simply: Rising unemployment happens quickly. During recoveries, the duration of the recovery is slower but more deliberate, which has led to above-average total returns. At the end of December, employment levels were stable or growing in each of the employment sectors except for the Information Services sector which had a nominal decline of -0.1%, reflecting a loss of 5,000 jobs. We can probably expect some of the recent announcements begin to materialize in 1Q2023. However, the number of job openings could limit the increase in unemployment compared to previous cycles. Indeed, the Federal Reserve expects the unemployment rate could increase less than 1%, as depicted in their most recent summary of economic projections.[6]

Real Estate Values and Gross Domestic Product (GDP) Correlation

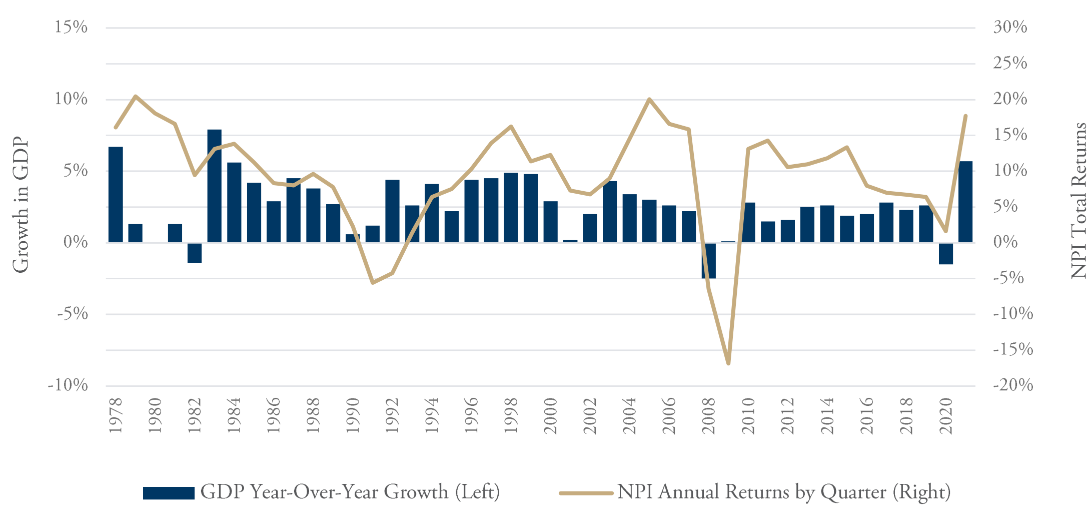
But why should real estate investors be so concerned with economic growth in the first place? Because compared to stocks and bonds, real estate returns have had the highest correlation to growth in GDP over the last 20 years. Except for the 1991 and 2007-2009 recessions, real estate values bent but did not break during other recessionary times. In both downturns, rising unemployment, unsustainable levels of new construction, and rich valuations led to a decline in values.

Over the last 20 years (2001-2021), real estate had a 68% correlation with growth in GDP. Conversely, the S&P 500 was essentially uncorrelated, and the bond market, as reflected in the Bloomberg Barclay's Aggregate Bond Index, had a negative correlation of -14%. The historic correlation of real estate returns to GDP growth provides ample reason for real estate investors to monitor GDP growth.

EXHIBIT 5

Real Estate Returns versus Growth in Real GDP[7]

Real estate total returns as reflected in NCREIF are positively correlated with growth in GDP



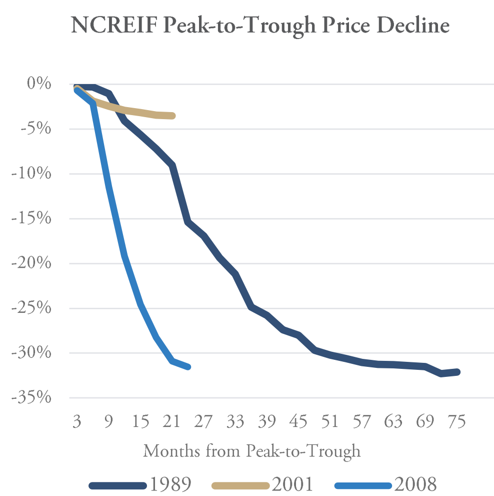
Fortunately, though, real estate returns, as reflected in NCREIF, have rarely been negative. Indeed, 85% of the time over the last 44 years, the NCREIF index delivered a total return of 6% or greater. In four instances, 1991 and 1992 and again in 2008 and 2009, returns were negative. Following the decline in values in 1992, real estate delivered an average annual total return of 7.9% over the ensuing five years (1993-1997). After the GFC, returns were even better: From 2010 to 2014, real estate delivered an average annual return of 12.1%.

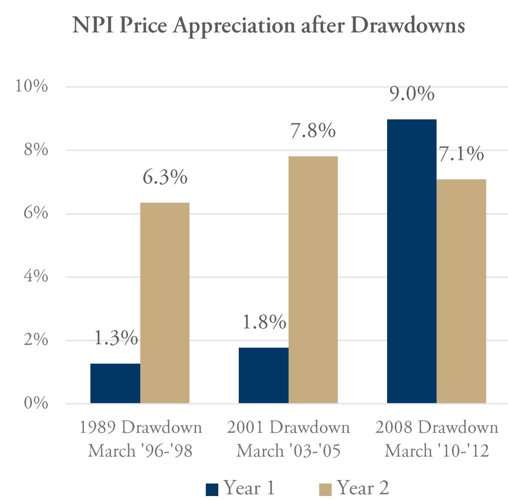
Stepping back, since 1980 there have been three periods when real estate values depreciated noticeably. The briefest and least impactful was the decline in 2001, which lasted a little less than two years and the values subsequently recovered quite well. The most pronounced downturn started in 1989, when real estate values peaked prior to the start of the great real estate depression. Real estate investors faced nearly six years of value declines. Liquidity eventually returned to the market, thanks to the evolution in the public REIT market, and eventually, private real estate values recovered during 1996-1998. During the GFC, the peak in values occurred in 2008. While values declined as much as they did in during the 1989-1995 period, there was a much faster reckoning on valuations. As a result, within two years of the peak, real estate values had bottomed and quickly recovered two years later. While many real estate investors would prefer to forget the 2008 peak-to-trough period, it's worth noting that it also took two years for the stock market to reach its trough. The cycle in the stock market led the real estate market by roughly 9-12 months.

EXHIBIT 6

Peak-to-Trough Declines & Future Price Gains[8]

Since 1980, there have been three prominent price declines of varying durations





Taking our lead from the stock market during the current cycle, equity values declined roughly 22% during the first ten months of 2022. Since then, stock prices have recovered and increased 12%. If private real estate follows a similar pattern as during the GFC crisis, it may be reasonable to expect real estate values stabilize by mid-2023.

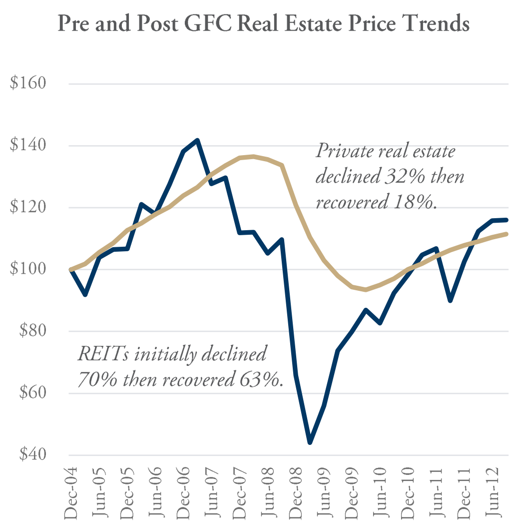
Public Versus Private Real Estate Equity Values – A Closer Look

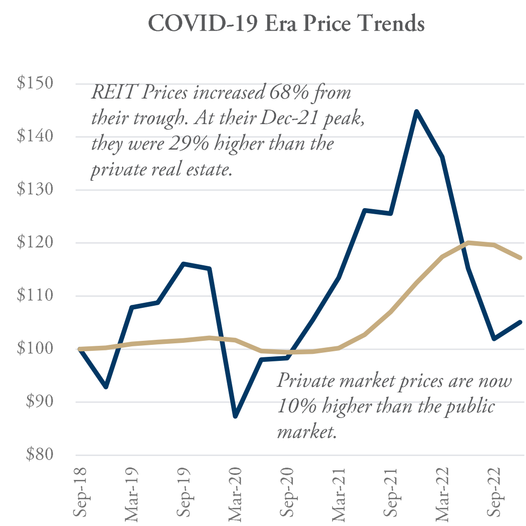
For those investors who monitor the public REIT equity markets to determine the direction of values in the private market, they will no doubt recognize the public market is signaling a correction. However, there are distinct differences between the current cycle and the 2008 cycle. Furthermore, to simply compare the peak-to-trough values in the public market and apply those to the private market would ignore the increase and deviation in values prior to the peak. To provide a fair comparison in valuations, one needs to compare price trends at a starting point when the public and private markets were at parity with one other.

EXHIBIT 7

Public vs Private Real Estate Price Trends[9]

Compared to the GFC, there are distinct differences in relative price trends





Using Green Street's estimate of NAV premium/discount, real estate values were at parity with one another at the end of 2004 and again at the end of 3Q2018. In the earlier period, real estate values rose roughly 40%. At this time, REITs were much more highly leveraged (c. 50% loan-to-value) compared to today and values declined 70%. The private market index was unleveraged, so its values declined about half as much as the public market. The public REIT market led the private market by roughly nine months.

In the current instance, REITs prices increased 45% from when values were at parity with the private market. Conversely, private market values were slow to respond and only increased only 20%. The increase in values in the public REIT market was more than twice of what occurred in the private market. At the end of 3Q2022, the private market was valued roughly 10% more than the public market. But in the fourth quarter, private real estate values declined 5.75% while the REIT market has rallied 6.5%. As it stands at the end of January, the public and private markets are roughly in parity with each other once again.

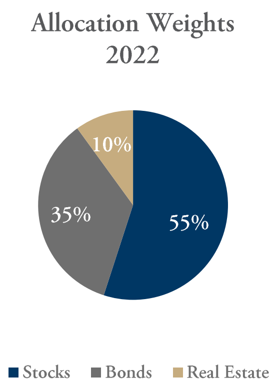
The Denominator Effect, Portfolio Rebalancing, and Entry and Redemption Queue

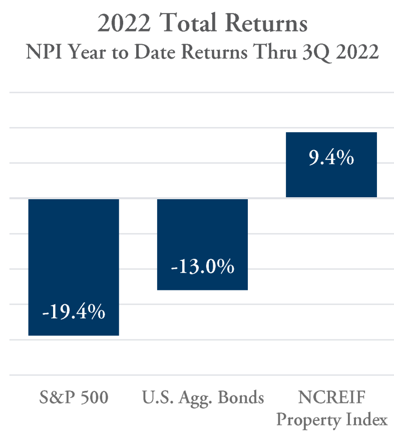
With the backdrop of the previously discussed economic factors – inverted yield curve, household balance sheets, unemployment rates – and a snapshot view of public versus private real estate valuations, what does it mean for investment portfolios?

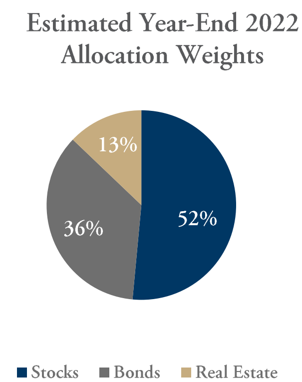
EXHIBIT 8

Weak Stock and Bond Returns May Lead to Rebalancing[10]

Over the last 15 years, a portfolio of stocks (55%), bonds (35%), and real estate (10%) delivered an average annual return of 7.7%.





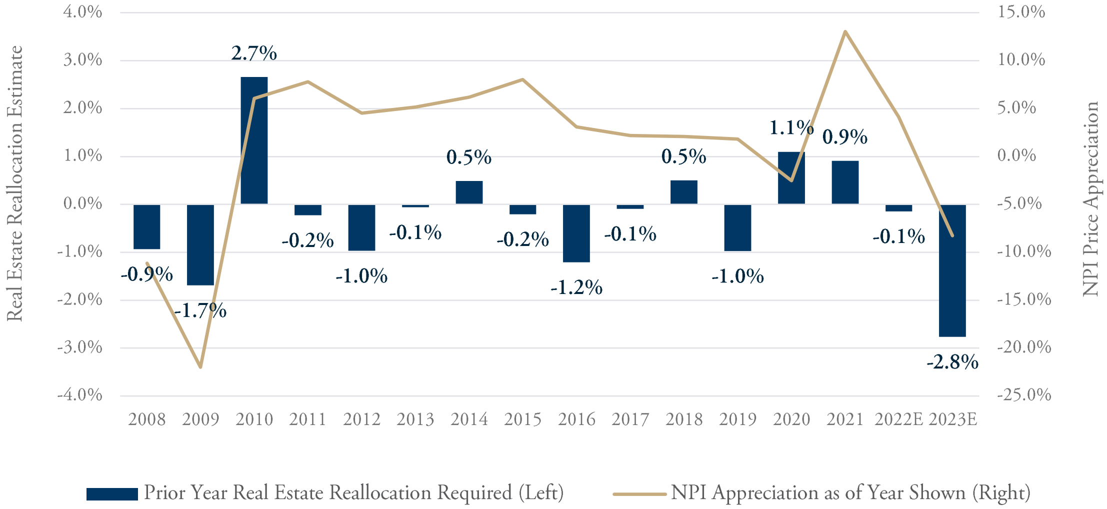


Over the last 15 years, a portfolio that allocated 55% of its assets to equities, 35% to bonds, and 10% to real estate delivered an average annual return of 7.7%. Last year was unique, as rising real interest rates caused discount rates to increase and equity and bond values to decline. At the same time, real estate has a positive correlation to inflation. The preliminary estimate from NCREIF is that real estate generated a total return of 7.5% for the year. Combining these trends suggests investors could be overallocated to real estate by about 2.5% to 3% on average, which suggests the amount of portfolio rebalancing required amongst institutional investors is arguably greater today than it was during the GFC.

EXHIBIT 9

Potential Rebalancing Required & Impact on Real Estate Values[11]

Rebalancing required is greater than post Global Financial Crisis because of weak bond returns in 2022

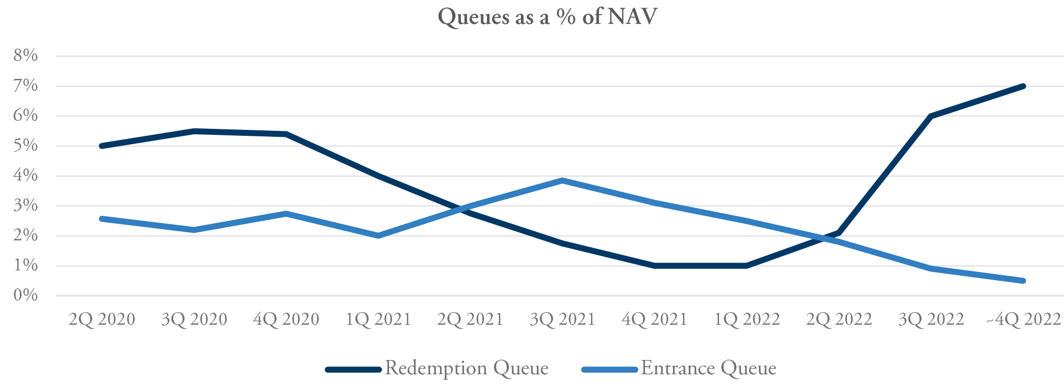


At least during the GFC, the bond market produced positive performance, so the amount of rebalancing required was lower. Looking back to 2007 and 2008, investors were overallocated to real estate by 0.9% and 1.7% respectively. In turn, real estate values declined in 2008-09. By 2009 though, the stock market recovered in dramatic fashion and investors found themselves under allocated to real estate by 2.7%. As liquidity returned to real estate, prices appreciated by more than 5% for the next few years.

If one were to follow this pattern over time, real estate liquidity is subject to the volatility in the equity and bond markets, and today is no different. However, the lesson learned is values in the equity market typically adjust and liquidity returns to the real estate market. In the last quarter, prices in the stock and bond markets seem to have stabilized while prices on private real estate have started to adjust. As a result, the so-called denominator effect on private real estate may be waning.

EXHIBIT 10

NFI – ODCE: Entry & Redemption Queue[12]



Until the denominator effect dissipates, and liquidity returns to the private real estate market, investors are under pressure to rebalance their portfolios. Today it is estimated that redemption queues minus the entrance queues is roughly 9% of net asset value of the NFI-ODCE core funds. The net asset value of all the funds in the NFI-ODCE index stood at ~$300 billion at the end of 3Q2022. Thus, a 9% net redemption queue amounts to roughly $27 billion. It's estimated the redemption queue in percentage terms is about half of what it was during the GFC, and many speculate that redemptions are more concentrated in fewer funds today.

To summarize, the prospect for a recession is real, but not certain. After all, the yield curve has been inverted for more than three months and a recession hasn't occurred yet. And if a recession does occur, it may be brief and mild, thanks to the strength of household balance sheets, low unemployment coupled with a high level of job openings, above-average real estate occupancy rates, and more. Importantly, real estate values have proven their resiliency in a few previous downturns. Thus, while certain "Killers of a Real Estate Cycle" are flashing a warning sign, others are not. As a result, real estate may bend but not break during this current cycle compared to prior ones.

ABOUT THE AUTHOR

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Mark G. Roberts is Director of Research at Crow Holdings, where his primary responsibilities include the development of insights, market research, and commentary on real estate topics of interest to investors, developers, operators, and other industry participants. Mark's position is shared with the Robert and Margaret Folsom Institute for Real Estate at SMU Cox School of Business, where he extends his expertise into the classroom, teaching market analysis and strategy to undergraduate and graduate students.

Mark, a fellow at the Real Estate Research Institute, a regular contributor to the National Council of Real Estate Investment Fiduciaries, and a registered architect, has over 30 years of real estate experience. He recently served as Executive Director of the Real Estate Center at the UT Austin's McCombs School of Business, and he previously served as a Managing Director at DWS Real Estate, where he held several senior leadership positions including Head of Research & Strategy, Alternatives and Real Assets, Head of U.S. Multi-asset & Solutions, and Co-Head of Research.

Prior to joining DWS's Real Estate in 2011, he served as Global Head of Research at Invesco Real Estate, a division of Invesco Asset Management Limited. Mark was the Chairman of the Board of NCREIF, President of RERI, Chairman of the NCREIF Research Committee, and a member of the NCREIF Fund-Index Subcommittee, which developed the NFI-ODCE Index. He initiated and served on the Leadership Committee of the Global Real Estate Fund Index, which is a joint effort of NCREIF (US), INREV (Europe), and ANREV (Asia-Pacific).

Mark holds a Master of Science in Real Estate from the Massachusetts Institute of Technology and a Bachelor of Arts in Architecture from the University of Illinois at Urbana.

ABOUT CROW HOLDINGS

Crow Holdings is a leading national real estate investment and development firm with nearly 75 years of history, $30 billion of assets under management, and an established platform with a vision for continued success. Crow Holdings pursues compelling investment opportunities through a range of strategies, product types, and ventures, consistently seeking to create value for its investors, partners, and communities. Operating from 21 offices in key markets across the U.S., Crow Holdings has extensive industry reach and expertise in multifamily, industrial, office, and specialty sectors. The firm's ongoing legacy is rooted in its founding principles: partnership, collaboration, and alignment of interests.

ABOUT SMU FOLSOM INSTITUTE FOR REAL ESTATE

The Margaret and Robert Folsom Institute was established at the SMU Cox School of Business in 1984 through a generous gift from former Dallas mayor and real estate developer Robert Folsom. It has been the backbone of real estate activity at SMU, supporting research and the real estate academic programs at both the BBA and MBA levels. The Institute is cultivating tomorrow's real estate leaders through its dedication to academic excellence, applied learning, thought leadership, and career development.

Disclaimer & Footnotes

Disclaimer

The commentary reflects the thoughts of the author as of Dec. 31, 2021. This information has been provided by Crow Holdings. All material presented is compiled from sources believed to be reliable and current, but accuracy cannot be guaranteed. This is not to be construed as an offer to buy or sell any financial instruments and should not be relied upon as the sole factor in an investment-making decision. The views and opinions expressed are those of the author at the time of publication and are subject to change. There is no guarantee that these views will come to pass.

Footnotes

1. A version of this report and the accompanying slides were presented at the January 2023 IREI VIP Americas Conference. The panel discussion was moderated by John McClelland and additional panelists included Sonny Kalsi from Bentall Green Oak, Jack Koch from Park Madison Partners, and Soultana Reigle from PGIM. The author is grateful for their thoughtful suggestions and input on the presentation as well as the support from the team at IREI.
2. Crow Holdings research views informed by analyzing data from CoStar, NCREIF, the Bureau of Economic Analysis and the Federal Reserve as of September 2022. Opinions are subject to change.
3. St. Louis Federal Reserve FRED Database for 10-Year Treasury Yield and 90-Treasury Bill. Chart reflects the difference between the two. Recession dates shown in grey as reported by the National Bureau of Economic Research. Data as of December 31, 2022. Recession probability from the NY Federal Reserve as of November 2022, the latest available. At the time, the yield curve spread was negative (-36 bps). Since then, the yield curve has inverted further to c. -100 bps.
4. Crow Holdings research and Laffer and Associates using data from Bloomberg which comes from the Federal Reserve's flow of funds data. Timeframe used is from March 1975 – September 2022, the latest data available. The flow of funds data is provided in nominal terms. The author deflated those from 3Q2022 using the consumer price index ("CPI") from the Bureau of Labor Statistics for the time shown. Notably, deflating the asset and debt figures does not change the debt-to-assets ratio.
5. Crow Holdings research, Bloomberg for U-3 unemployment data as of June 2022 and NCREIF data for total returns. Overall time series starts in December 1982 – June 2022. Total returns reflect the average of annual total returns by quarter for the time periods shown.
6. Source: Federal Reserve Summary of Economic Projections, December 14, 2022.
7. Crow Holdings research using data from the St. Louis Federal Reserve FRED Database for growth in Gross Domestic Product (GDP) and NCREIF Property Index. Data reflects the timeframe from 1Q1978-4Q2021 reflecting the latest calendar year annual data.
8. Crow Holdings research using NCREIF Property Index Price Appreciation Index. Data reflect the price appreciation index as of the data shown. COVID-19 March 2020 drawdown of c. 2% not shown as it lasted 6 months.
9. Crow Holdings research, using NAREIT Equity price returns and NCREIF Property Appreciation indices for the time periods shown. The starting date for the comparison reflect those periods when the net asset values of the public and private markets were equal based on the NAV premium/discount analysis published by Greenstreet..
10. Crow Holdings research, Bloomberg with data as of 4Q2022 for the S&P 500 and Bloomberg Aggregate Bond Index. NCREIF Property Index as of September 30, 2022. Rebalancing analysis assumes an allocation to equities (55%), bonds (35%) and 10% (real estate) are maintained on an annual basis
11. Crow Holdings research, Bloomberg with data as of 4Q2022 for the S&P 500 and Bloomberg Aggregate Bond Index. NCREIF Property Index as of September 30, 2022. Rebalancing analysis assumes an allocation to equities (55%), bonds (35%) and 10% (real estate) are maintained on an annual basis. Correlation between rebalancing required in on year and NPI price appreciation in the following year was 49% for the period 2007 – 3Q2022.
12. IDR. Component Funds. Graph excluded redemptions that formed prior to COVID-19. Entrance and redemption queues show as a percentage of net assets total. Data shown for $Q 2022 is a preliminary estimate and is subject to change pending final data.