JUNE 2022

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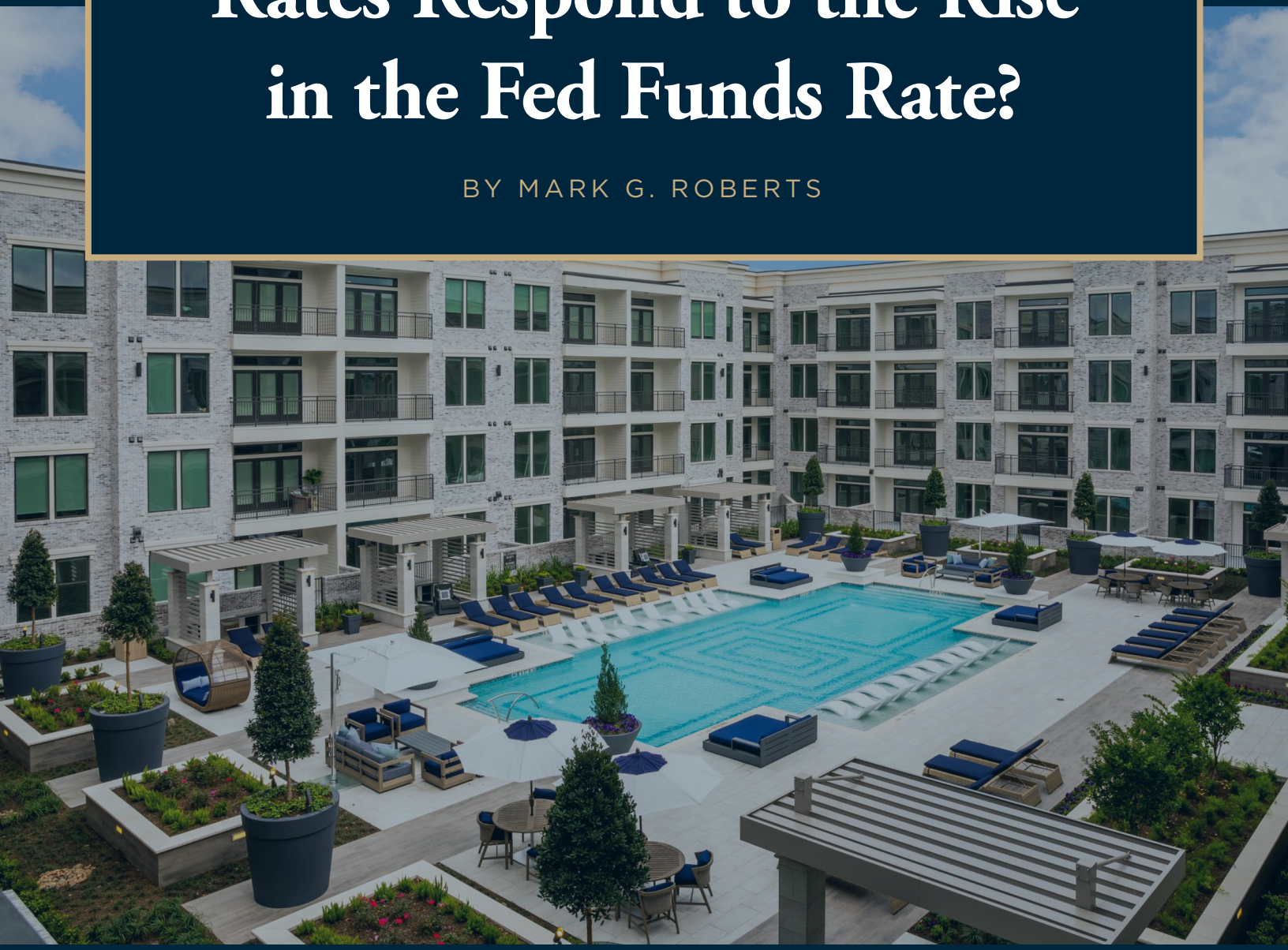
BY MARK G. ROBERTS



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In response to the inflation report released on June 10, the Federal Reserve ("Fed") is moving even more decisively to reduce the pace of inflation and increased the Fed Funds rate ("short-term interest rate") 0.75% on June 15. The Fed's target range for short-term interest rates is now 1.5% to 1.75%. The year-over-year inflation figures released for May 2022 were 8.6% – higher than expected and the highest we've seen since the early 1980s. In turn, the Fed also raised their year-end 2022 target for short-term interest rates from 1.9% to 3.4% to signal their resolve to reduce inflation.

Fed Chair Jerome Powell also made some important statements in the Fed's news conference on June 15. On several occasions, the Chair indicated the Fed has no control over supply-side issues such as oil, food commodities, or the size of the labor force, all of which are contributing to high inflation. Instead, the Chair indicated the Fed can only focus on the demand side of the economy. As such, the Fed indicated it will focus more on inflation than employment as it seeks to reduce inflation to the Fed's target of 2%. For real estate investors, what does this all mean for valuations and cap rates?

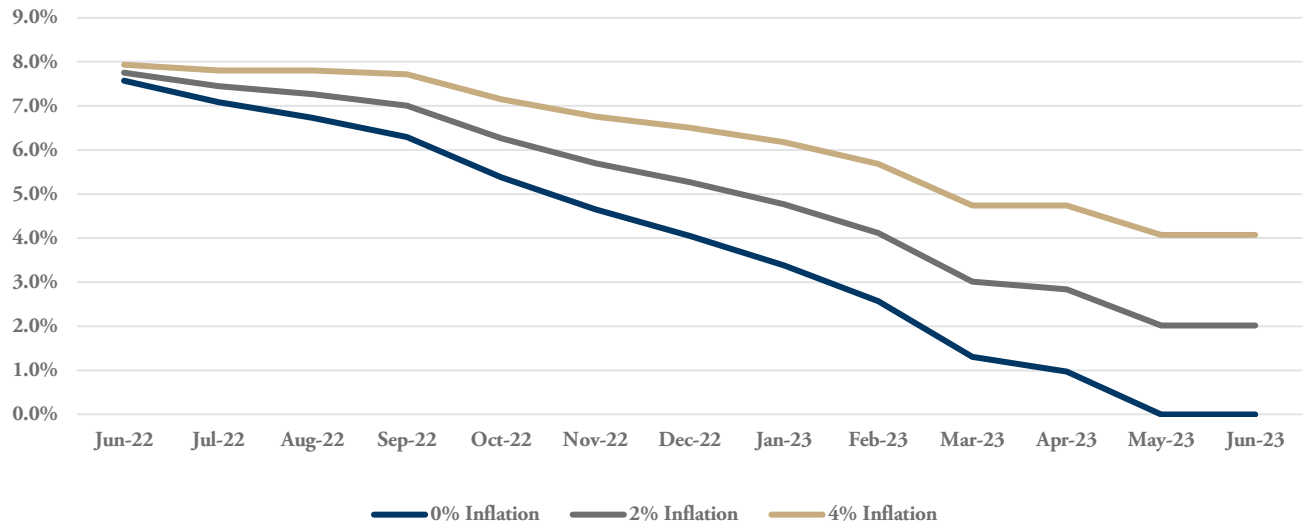
Investors should continue to expect some dismal "year-over-year" inflation reports for the next several months because prices in the second half of 2021 were much lower than they are today. For example, if we assume inflation decelerates immediately and increases only 2% starting today, year-over-year inflation won't reach 2% until a year from now. Exhibit 1 depicts the future path of year-over-year inflation if prices remain flat starting today or rise by 2% or 4%. Thus, year-over-year inflation will remain above the Fed's target of 2% through the first quarter of 2023 at the earliest unless we see significant and large price declines in specific components of the CPI, which currently seems unlikely.

KEY HIGHLIGHTS

- Cap rate-spreads-to-treasury yields have a strong inverse relationship to inflation.
- Assuming 3% - 5% year-on-year inflation for the near term, cap rate spreads to the 10-year Treasury are expected to range between -0.2% and 1.6%.
- The NCREIF Cap rates could end up in the range of 4.4% - 5.3% over the next couple of years, up from 4.1% today.
- Given high occupancy rates and above-average rent growth continuing in some sectors, we may grow into a higher national cap rate of ~4.5%, with the balance coming from value adjustments.
- Repeating past cycles, the Fed believes it will need to reduce interest rates in 2024.

EXHIBIT 1

Future Path of Year-Over-Year Inflation If Price Increases Decelerate to 0%, 2%, or 4%



Source: Bureau of Labor Statistics for the Consumer Price Index ("CPI") for All Urban Consumers, inflation calculations by Crow Holdings Capital.

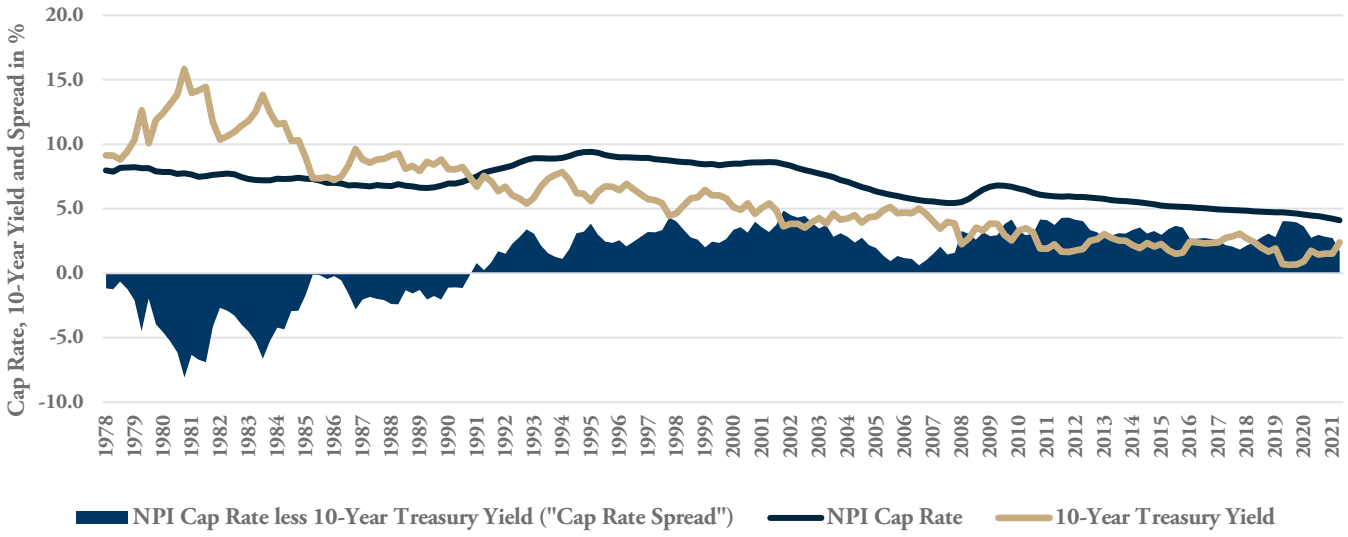
No one knows for certain what will happen with interest rates, let alone real estate cap rates. However, we can utilize the historical relationships of a few indicators to provide some evidence for informed speculation. Those indicators include the real estate cap rate "spread," which is the difference between real estate cap rates and the 10-year Treasury yield. Second is comparing this spread with the variation in inflation. Next is the relationship between the 10-year Treasury yield and short-term interest rates. Combining these components can help frame our view on cap rates.

Will Cap Rates Increase and Spreads Widen Or Are We Reverting to the Inflation Regime of the 1980s?

The last time the U.S. experienced a high level of inflation as seen today was in the 1970s and 1980s. During this time, the cap rate spread was negative as cap rates were lower than the 10-year Treasury yield as seen in Exhibit 2. Despite negative cap rate spreads, investors were rewarded with higher real estate appreciation, which averaged 5.7% annually, versus inflation, which was 6.6% during this time[1].

EXHIBIT 2

Cap Rates, 10-Year Treasury Yields, and Cap Rate Spread 1978-1Q2022



Source: NCREIF Trends Report 1Q2022 for NPI cap rate. St. Louis Federal Reserve for the 10-year Treasury yield. Cap rate spread calculated by Crow Holdings Capital.

Over the last 30 years, inflation has been declining and low in contrast to the 1980s. Since 1991 inflation has averaged 2.3% in contrast to the late 1970s and 1980s when it averaged 5.9%[2]. As inflation decelerated, the 10-year Treasury yield and cap rates declined, but the cap rate spread widened for the reasons noted in the section below. Nevertheless, cap rates as measured by the NCREIF Property Index ("NPI") are now the lowest they've been since NCREIF first reported this data in 1978.

At the end of the first quarter of 2022, cap rates were 4.1%[3]. At the time, the 10-year Treasury yield was 2.4%, reflecting a cap rate spread of 170 bps. Over the last 30 years, this cap rate spread has averaged 270 bps +/- 100 bps. While the cap rate spread was low, it was at the edge of its lower bound.

As of today,[4] the 10-year Treasury yield has risen to more than 3.25% and the cap rate spread has compressed to less than 100 bps, well below its long-term average. In a low inflationary environment, a cap rate spread this low has typically been a harbinger of weaker near-term total returns.

However, we are not in a low inflationary environment today and it's reasonable to expect the U.S. will remain in a higher inflation regime for a time. During the higher inflationary regime of the 1980s, the cap rate spread was negative, averaging -280 bps +/- 200 bps. Yet, what is the appropriate cap rate spread today?

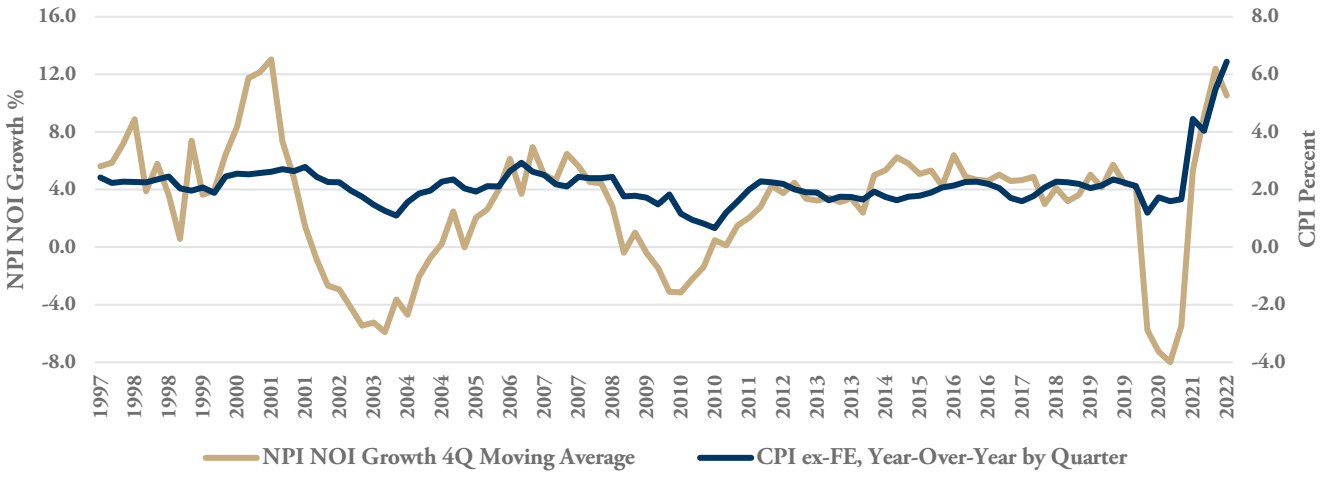
Real Estate Has Been a Hedge to Inflation

It is widely accepted that real estate can provide a hedge to inflation when supply and demand are in balance[5]. Today, at the national level, occupancy rates for apartment and industrial buildings are higher than their long-term average, while rates for office buildings are near their historical average, and those for retail buildings are improving[6].

As a result, for the year ending 1Q2022, net operating income ("NOI") in the NCREIF index grew 10.5% compared to inflation which rose 8.5% over the same period.[7] While we do not have NPI NOI data dating to the inception of the index in 1978, Exhibit 3 depicts the relationship between NOI growth published by NCREIF versus inflation over the last 25 years.

EXHIBIT 3

Real Estate NOI Growth Is Highly Correlated to Inflation Over the Last 25 Years

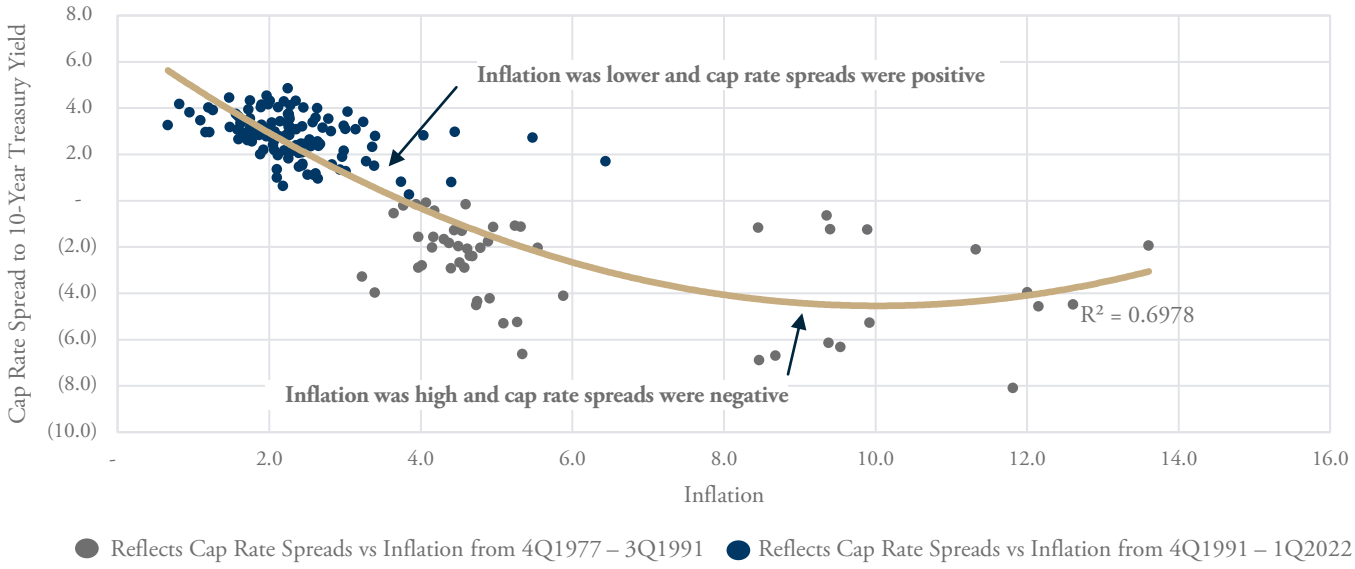


Source: NCREIF Trends Report 1Q2022 for the NPI Net Operating Growth Four-Quarter Moving Average. Bureau of Labor Statistics for the CPI Ex-Food and Energy. Calculations of the cap rate spread by Crow Holdings Capital.

As the exhibit shows, while real estate NOI growth has greater variability than the CPI, they both have cycled together over the last 25 years[8]. Over this time, NOI grew an average of 3% versus inflation of nearly 2.3%. Given this relationship, we can use the CPI as a proxy for NOI growth for longer term periods to provide an estimate of a reasonable cap rate spread during various inflationary regimes as seen in Exhibit 4.

EXHIBIT 4

Real Estate Cap Rate Spreads Versus Inflation 1978-1Q2022[9]



Source: NCREIF Trends Report 1Q2022 for the NPI Equal-Weight Cap Rate. St. Louis Federal Reserve for the 10-year Treasury yield and the Bureau of Labor Statistics for the CPI Ex-Food and Energy for inflation. Calculations by Crow Holdings Capital.

The exhibit shows cap rate spreads and inflation are inversely related to one another. In the past when inflation was low, cap rate spreads were positive. Conversely, when inflation was high, cap rate spreads were negative. The observations in the upper left portion of the chart depict the post-1991 period. During this period, inflation was lower and cap rate spreads were higher. Moving to the right in the chart in the pre-1991 period, as inflation increases cap rate spreads turn negative.

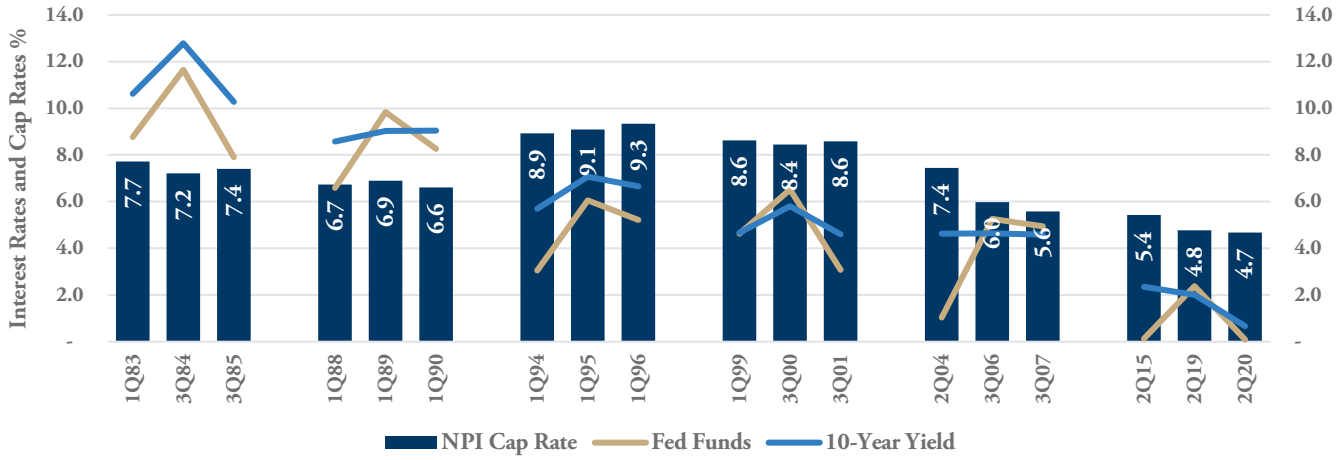
These historical relationships provide an estimate of the appropriate cap rate spread for a given level of inflation. With 2% inflation, history suggests an appropriate spread to the 10-year Treasury yield is 250 bps, or roughly equal to the post-1991 period. When inflation was higher at 3%, the cap rate spread narrowed to 1.2% on average. If we are entering a new inflation regime of, say, 4%-5% and supply and demand remain in balance, then history suggests a more appropriate cap rate spread could range from -20 bps to 70 bps. The last question though is, what's the path for the 10-year Treasury yield?

How Did Cap Rates and the 10 -Year Treasury Respond to Prior Fed Rate Increases?

No one can predict with certainty what will happen with the 10-year Treasury yield. However, we can combine the Fed's expectations for short-term interest rates and evaluate how the 10-year Treasury rates responded when the Fed raised interest rates during previous rate-hiking cycles as highlighted in Exhibit 5.

EXHIBIT 5

Changes to Real Estate Cap Rates and the 10-Year Treasury Yield During Prior Fed Rate Increases



Source: St. Louis Federal Reserve for Fed Funds Rate and 10-year Treasury yield as of March 30, 2022. Cap Rates reflect the four-quarter moving average of the NCREIF Equal-Weight Current Value Cap Rates from the NCREIF Trends Report, March 2022. Calculations by Crow Holdings Capital.

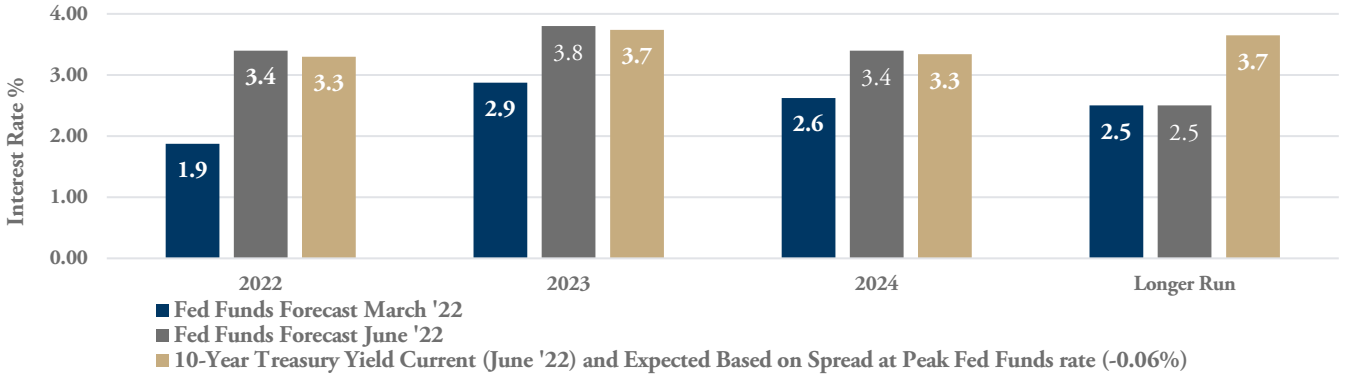
Since 1983, there have been six rate-hiking cycles. During these cycles, the Fed has increased short-term rates an average of 3%. Coincidentally, in March 2022, the Fed signaled its intent to increase short-term rates a similar amount. However, the Fed's June 2022 projections indicate a more aggressive stance, and they expect to increase short-term rates 3.8%[10] over the course of this rate-hiking cycle. Though, what is striking from history, within one year after the peak in the Fed's rate hike cycle, they lowered interest rates an average of 2%. One exception was at the start of the global financial crisis, but within 17 months of reaching the peak in that tightening cycle, the Fed had reduced short-term rates 200 bps.

In the past, once the Fed started raising interest rates, the 10-year Treasury increased slightly, but then drifted lower. During those periods when the U.S. avoided a recession, the 10-year Treasury yield was 100 bps higher on average compared to short-term rates. When the yield curve inverted, the 10-year Treasury yield was 63 bps lower on average compared to short term rates. The average of all periods combined was -6 bps. As for real estate cap rates, they did not increase much over the course of the interest rate cycle except for '94-'95 when real estate cap rates increased about 40 bps. In the other periods, cap rates either held steady or declined.

Exhibit 6 highlights the Fed's expected path of future short-term interest rates as they describe in their June 15, 2022, Summary of Economic Projections. They expect to increase short-term rates to 3.4% by year-end 2022, which is 1.50% higher than what they expected in March 2022. This is a massive shift and a reaction to the current inflation regime. By the end of 2023, they expect to increase them a further 40 bps. Beyond 2023 though, the Fed itself expects they will *lower* short-term interest rates. If we assume the 10-year Treasury yield follows its historical path, then the spread between the 10-year Treasury yield and short-term interest rates will narrow and the yield curve could flatten.

EXHIBIT 6

Fed's Estimate of Future Short-Term Rates and Implications for the 10-Year Treasury Yield



Source: FOMC Meeting Minutes as of June 15, 2022 for the Fed Funds rate. Estimates of the 10-year Treasury Yield reflects the median spread between the 10-year Treasury yield and the Fed funds rate which occurred at the peak of the rate increase cycles in 1983, 1988, 1994, 1999, 2004, 2015. For the longer-run estimate of the 10-year Treasury yield, 1.15% was used which was the upper end of the rate-hiking cycle.

Given the Fed's estimate for short-term interest rates, the 10-year Treasury yield could range from -63 bps lower than short-term rates to 100 bps higher with an average of -6 bps. While I use -6 bps as the average estimate of the difference between the 10-year Treasury yield compared with short-term interest rates, practically speaking, the range could be +/-50 bps and is heavily dependent on political and economic uncertainty. Finally, since the beginning of the year, the bond market has had an inflation expectation of roughly 2.75% over the next ten years and 3% over the next five years[11]. Combining these components leads to an estimate of real estate cap rate for the asset class as reflected in the NPI and shown in Exhibit 7.

EXHIBIT 7

Sensitivity of NPI Cap Rate Trends Considering Short-Term Rate Increases and Inflation Expectations

	2% Inflation - Fed's Target	2.75% Breakeven Inflation from the Bond Market	3% Breakeven Inflation from the Bond Market	4% Inflation Regime?
2022	5.8	5.1	4.9	4.0
2023	6.2	5.5	5.3	4.4
2024	5.8	5.1	4.9	4.0
LONGER TERM	6.1	5.4	5.2	4.3

Source: Crow Capital Holdings calculations as described in this report. It utilizes short-term interest rates from the FOMC Meeting Minutes as of June 15, 2022, the 10-year Treasury yield as provided by the St. Louis Federal Reserve, and the NCREIF Trends report 1Q2022 for cap rates and derivation of the cap rate spread.

The table summarizes a path for real estate cap rates at year-end based on what we know today. Anchoring on the bond market's estimate of 3% inflation over the next five years, cap rates as reflected in the NPI could increase from their current level of 4.1% to 4.9% by year-end if they follow the Fed's action on short-term interest rates. The increase could be driven by both an increase in NOI as well as an adjustment in values.

It is hard to justify low cap rates if we view the market through the lens of the low inflation regime of the last 30 years. However, if we consider evidence from history and the U.S. remains in a 4% inflation regime, then cap rates may not increase much at all. That said, given the turmoil in the markets, the chance of cap rates rising seems greater than the chance of them falling. If inflation in the U.S. reverts to the Fed's target of 2%, then 10-year Treasury yields would likely decline and cap rate spreads would widen. In the short-term, inflation is likely to remain elevated which could result in lower cap rate spreads.

In addition, there have been significant price increases across a range of building materials not to mention higher energy costs, higher wages for construction workers and higher financing costs. These higher input costs are driving replacement costs higher, which, in turn, may hinder the ability of developers to construct the buildings needed to help reduce occupancy rates. Lower occupancy rates would help reduce the pace of rent growth and slow the pace of inflation.

In the interim, with occupancy rates expected to remain higher than their long-term average across certain property sectors, rents are likely to grow more than their long-term average as well. This situation is like the late 1970s and early 1980s and we might need to consider looking through a different lens as it relates to valuing property. It seems reasonable to expect slightly higher cap rates with lower cap rate spreads as the Fed tries to engineer a soft landing.

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 more than 70 years of history, $24 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 17 offices in key markets across the U.S., Crow Holdings has extensive industry reach and expertise in multifamily, industrial, office, and specialty sectors, having developed or acquired more than 225 million square feet of real estate. 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 June 20, 2022. This information has been provided by Crow Holdings Capital. 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] The appreciation and inflation indicated reflect the annual average from 1978 to 1986. This was during a time when cap rate spreads were consistently negative. The author's calculations are developed using data from the NCREIF Property Index for appreciation and the Census Bureau for the Consumer Price Index (CPI).

[2] Using data from the Census Bureau and the St. Louis Federal Reserve, the Consumer Price Index ("CPI") Ex-Food and Energy was 2.3% annually for the time 3Q1991 – 1Q2022. From 4Q1978 when the NPI was launched through 3Q1991, inflation averaged 5.9% per year. 3Q1991 was used as the breakpoint. Prior to this time, NPI cap rates less the 10-year Treasury yield produced a negative yield spread. After 3Q1991 and during the lower inflation regime, cap rate spreads have generally been positive.

[3] The 4.1% cap rate represents the trailing four quarter cap rate for the equal-value weighted NPI as reported in the 1Q2022 NCREIF Trends Report released in April 2022.

[4] June 15, 2022. Source: Bloomberg

[5] Please see our May 2022 article, "Is Real Estate a Good Hedge to Inflation Today?"

[6] NCREIF Trends Report, 1Q2022

[7] NCREIF Trends Report, 1Q2022 for NOI growth and the Census Bureau for the CPI ex-Food and Energy.

[8] From 2Q1997 to 2Q2022, the correlation between NPI's NOI growth and the CPI Ex-Food and Energy was high at 57%. Data used are those sourced in the footnote above.

[9] The author's calculations using the year-over-year CPI Ex-Food and Energy from the Census Bureau versus the NCREIF current value cap rate from the 1Q2022 NCREIF Trends Report less the 10-year Treasury yield from the FRED database. The model used indicates inflation explains nearly 60% of the variation in cap rate spreads since 1978. Such a high reading provides some confidence in the comparison.

[10] Summary of Economic Projections, June 15, 2022. The figures refer to Table 1. https://www.federalreserve.gov/monetarypolicy/fomccalendars.htm

[11] Bloomberg as of June 13, 2022. The information is also available from the St. Louis Federal Reserve Database ("FRED" database).