

What Rising Inflation Means for CRE Investing

Over the last several weeks, inflation has become a near-constant topic of conversation.

In this report, we look at the factors contributing to rising prices in the U.S., how long elevated inflation rates are likely to continue, the role of the Federal Reserve, which is having to walk a narrower path than in prior economic expansions, as well as the major implications for commercial real estate investors.

Key takeaways

- The U.S. economy is experiencing broad-based inflation at rates not seen since the late 1980s.
- Elevated inflation is being driven by both demand (stimulus, re-opening, excess savings, shifts in spending patterns) and supply-side factors (labor shortages, supply chain disruptions). Our analysis suggests that these factors will keep inflation uncomfortably high in the coming quarters, but the underlying pressures will fade as the pandemic-disruption fades and as the supply-side of the economy rushes to meet demand.
- Monetary conditions are as stimulating as they have ever been. For this reason, the Federal Reserve has scope to reduce accommodation as it recently did by beginning to taper its asset purchases without undue risk to the recovery. The Fed has the tools it needs to tame inflation.
- A tail risk to this outlook would be if wage growth increases substantially and/or if inflation expectations become unmoored. We view this as a low probability scenario, but one to watch.
- If inflation follows the most probable script—higher inflation for a period but not damaging to the economy—then property stands to benefit. Our analysis shows that every 1% increase in inflation is associated with a 1.1% increase in total returns. This environment also results in lower cap rates across property sectors.

- In other words, **commercial real estate not only protects against higher inflation but provides outsize returns specifically in these environments.**

What is driving inflation?

As the U.S. recovery took shape, most economists expected to see an increase in inflation as it took time for various sectors of the economy to catch up with returning demand. Examples include price hikes in energy, food services, hotels and airfare. Further, what demand has persisted throughout the pandemic has shifted towards durable goods—an unusual turn not recorded in prior recessionary periods. Indeed, real spending on durable goods is nearly 20% higher than it was pre-pandemic, while such spending on services is still down about 2%. These are demand side factors influencing prices.

The supply side of the economy is also adjusting to the rapid acceleration in spending on goods, as businesses typically assess the longevity of demand prior to investing in production ramp up. The economy also faced shocks from the lagging effects of cancelled orders on the semiconductor supply chain, which has impacted a wide range of goods prices but most acutely new cars, which led to sharp increases in used car prices. So far, with many expecting supply-

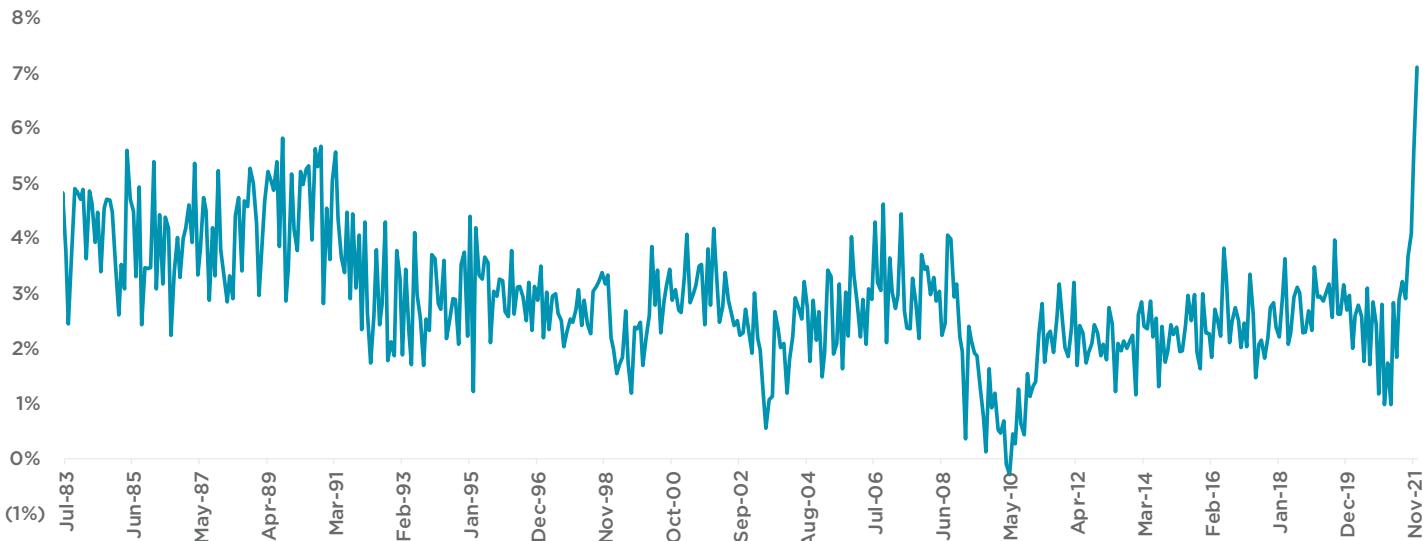
demand imbalances to fade over time, and with some features of inflation being idiosyncratic, economists and policymakers have not been particularly worried. However, it is becoming increasingly clear that these inflationary pressures, once thought to be temporary, are lasting much longer than expected. And more worrisome, they appear to be worsening and are impacting more areas of the U.S. economy.

There are 101 ways to measure inflation, but in the current environment, we are paying particular attention to the

median consumer price index, which tracks the increase in price of the median goods in the basket thereby reducing the influence of items recording extreme movements. The median CPI is now increasing at over a 6% annual rate, a pace not seen since the late eighties (see Figure 1).

This is why talk of inflation has come roaring back after a brief summer lull. The question remains: what is driving inflation? Causes can be placed into two buckets—demand-driven and supply-driven.

Figure 1
MEDIAN CONSUMER PRICE INDEX (% P.A.)



Source: Federal Reserve Bank of St. Louis

The demand story

The demand narrative is straight forward. Spending is increasing because labor markets are improving, wages are growing and because households have pent-up spending power, partly due to the enormous fiscal stimulus passed by the government. Inflation has been increasing across the developed world, but it has increased more in the U.S. where fiscal stimulus has been largest. Add to that a shift in spending patterns that favor goods over services—a trend that has further exacerbated supply-demand imbalances.

Looking forward, however, many of these demand-side forces should fade rather quickly. The initial burst of activity after re-opening has passed. The effect of higher savings on spending will decrease over time once

households reach their preferred savings levels, and households only need so many hard goods like cars, ovens and furniture. Even with additional infrastructure legislation, the annual fiscal impulse to spending will be nothing like we saw from the various recovery bills. Further, infrastructure spending takes years to enter and impact the economy because it tends to be ‘multi-disbursement’ oriented like traditional structured finance. For all these reasons, the demand outlook does not point to accelerating inflation over the medium-term, which is most important for the economic outlook and policymakers, namely the Federal Reserve.

What could change the landscape is a self-fulfilling wage spiral in which workers demand higher compensation to

offset rising inflation. While it bears monitoring, at this point, a wage-price spiral seems unlikely. Nominal wage growth has increased sharply since the downturn, more so than in the periods following the last two recessions. However, the absolute level of wage growth is not yet about a concern. It stands above pre-pandemic levels but still within the post-2000 range and not near the levels we saw in the late 90s.



DEMAND

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Figure 2

MEDIAN HOURLY WAGE GROWTH (%, 3-MONTH MOVING AVERAGE)



Source: Federal Reserve Bank of Atlanta

The supply story

Inflation also results when supply finds itself chronically unable to adapt to demand, creating scarcity and inevitably price increases. The oil embargos in the 70s are the textbook cases of a sudden shock to supply driving inflation in a wide range of goods. That is the closest comparable period we have to what the economy is experiencing. We can distinguish between two distinct issues facing the supply side of the economy: labor scarcity and supply chain.

Labor Scarcity

U.S. employment is still 4.5 million jobs below its February 2020 level. In theory, there should be hordes of jobseekers, but that is not what companies across a wide range of industries and geographies are reporting. The labor force

has shrunk and its recovery seems to be held back not by a lack of open jobs—there are more open jobs today than there are unemployed—but by pandemic-related factors. In fact, according to the Census Bureau's household pulse survey, in October, nearly 30% of would-be workers are still not working due to pandemic-related factors. For instance, there remain elevated numbers of people who are staying home to care for the sick or for their children. Others may be choosing to postpone their job searches and instead are spending some of their accumulated savings, enhanced by past stimulus measures. The economy also likely experienced an acceleration of retirements and retirees who are not re-entering the labor force at usual rates (possibly due to COVID-19 factors but possibly due to wealth effects from stimulus, the stock market and housing appreciation). The labor force has also been impacted by

the pandemic's mortality rate. Most of these effects will lessen in the coming quarters, diminishing their impact on inflation. Even so, we do not believe they are primary causes of supply-driven inflation.

First, as shown above, wage growth has increased but not as much as we would expect, if employers were truly desperate for workers. More concretely, when we look at where inflation pressures are greatest, we find that while the costs of services have increased, those

costs have merely returned to pre-pandemic levels. In contrast, the costs of durable and non-durable goods have increased to levels not seen since the early 80s. Both the services and goods sectors face labor scarcity issues, but the goods side is driving above-trend inflation. This tells us that, rather than labor, something distinct to the goods side of the economy is driving inflation. Namely, the shift in consumer spending directed at goods and the lack of the supply to meet that demand.

Figure 3
GOODS VS. SERVICES INFLATION (YOY PERCENT CHANGE)



Source: Federal Reserve Bank of St. Louis

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labor scarcity and supply chain.

Supply Chain Issues

Problems in global supply chains are the primary culprits in driving inflation in the U.S. and globally. Moody's Analytics' supply chain stress index is nearly 40% above its Q4 2019 level and significantly higher than any period since 2010. The ISM manufacturing sub-index for delivery times shows more stress than has been recorded since the mid-70s. Past increases in supply chain pressure have been sorted out over time. Indeed, in periods of scarcity, supply chains have often overcorrected, an equal and opposite reaction. One potential current example might be the massive increase in planned semiconductor production investment. More generally, there is broad evidence of a recovery in capital expenditures.

The concern now is that supply chains are far more extended and run with smaller margins of error than in the past, which means that the bullwhip effect is worse. There will likely be permanent or semi-permanent changes to supply chains with companies simplifying their supplier relationships and/or maintaining higher inventory levels. Competitive pressures in a normal operating environment would tend to push against these behavior adaptations over time, but higher inventory is likely to result for at least a few years. Further, as consumer spending gradually shifts back towards services (even if not back to pre-COVID-19 trends), this will further remove a source of pressure on supply chains.

Figure 4
MOODY'S SUPPLY CHAIN STRESS INDEX (Q4 2019 = 100)



Source: Moody's Analytics

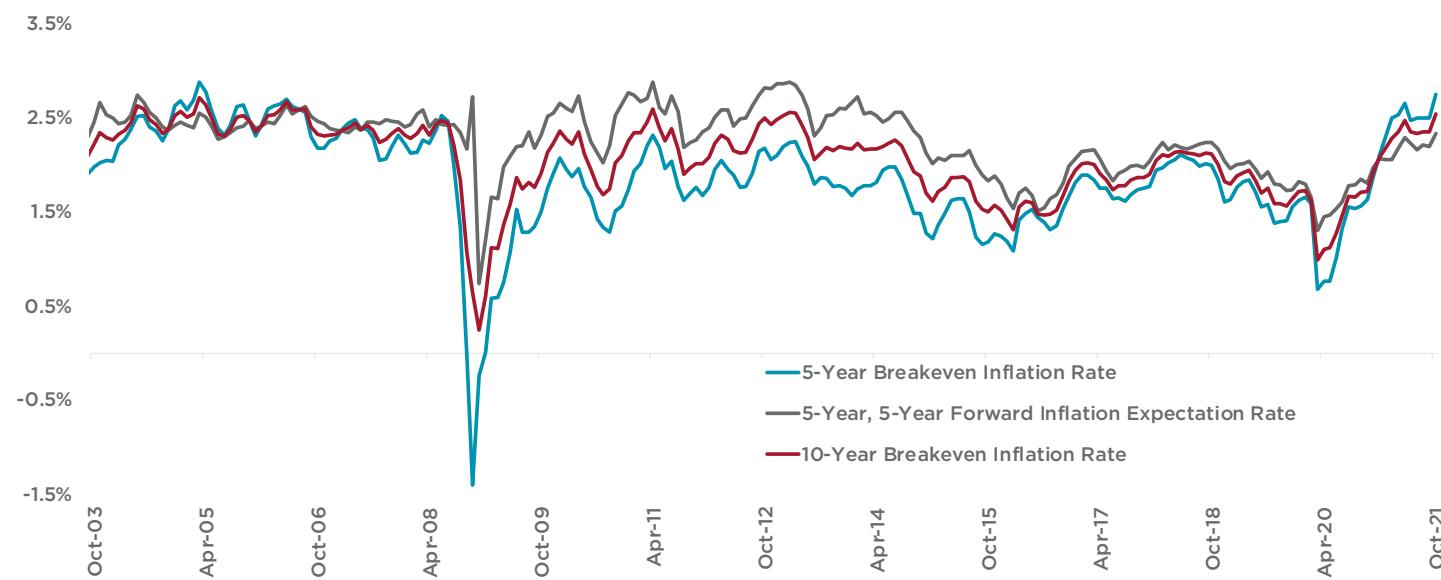
The key takeaway is that the factors contributing to inflation are unlikely to be permanent, but will persist in driving above-trend inflation in the coming quarters and likely into 2023. Thereafter, they will normalize. While this narrative is far from contrarian, we hope that our analysis enhances comfort with the conventional forecast.

What about the Fed?

The Federal Reserve will begin tapering its asset purchase program later this month (November 2021). This move was well telegraphed and fully priced into the market. The Federal Reserve believes that inflation will moderate as the various demand and supply drivers attenuate, but they remain very much attuned to the potential expectations channel in driving inflation. Inflation expectations have broadly risen but only to levels last seen in 2011-2014. More complex analytics, which seek to separate the market's inflation

expectations and the yield premiums it charges for uncertainty about inflation, show that much of the increase is actually through this uncertainty channel.¹ The Fed likely believes that it can contain both of these factors by signaling the resolve to fight inflation today. The Fed's recent actions are already bearing fruit. The market believes the Fed will hike rates more and sooner (2Y yield up), and this belief has reduced uncertainty around the longer path of inflation (lower 10Y and 30Y yields).

Figure 5
MARKET-IMPLIED INFLATION EXPECTATIONS



Source: Federal Reserve Bank of St. Louis

The Fed has room to tighten monetary policy without placing stress on the recovery. By any measure, financial conditions are as stimulating as they have been in decades—the economy clearly does not need additional accelerant. The balance of risks therefore favors a more hawkish Fed. It's certainly what the market believes as several rate hikes have been priced into 2022, even though the Fed's own statements haven't reflected a hawkish stance.

As always, the risk is that if the Fed is too aggressive, then the economy may slow more than intended, potentially instigating a recession. The Fed will have to walk a narrower path than was available during the last, long expansion because of even higher government debt levels, which increase interest rate risk, and the ongoing supply chain issues over the next one-to-two years.

1 <https://econbrowser.com/archives/2021/10/long-term-market-based-inflation-expectations>

Implications for CRE Investors

It goes without saying that if the Fed instigates a recession as it seeks to contain inflation, it would put assets at negative risk, including commercial real estate (CRE) assets. In the more likely case that elevated inflationary pressures subside over the next one-to-two years, then the CRE market would face a broadly supportive macroeconomic backdrop. Additionally, investor focus would shift back to fundamentals and long-term trends influencing the various property sector markets—work from home, e-commerce, renter demographics, etc. These latter factors will be central in any macroeconomic scenario.

If on the other hand, the economy is in for not just an inflationary phase but a movement to a higher inflation regime, then it bears asking how the CRE market might respond. It is widely believed that real estate investment acts as an inflation hedge, but more seldom is this proved out.

We investigated the relationship between inflation and CRE total returns and cap rates for both public and private markets across multiple property types. Specifically, we ran linear regressions with the following parameters:

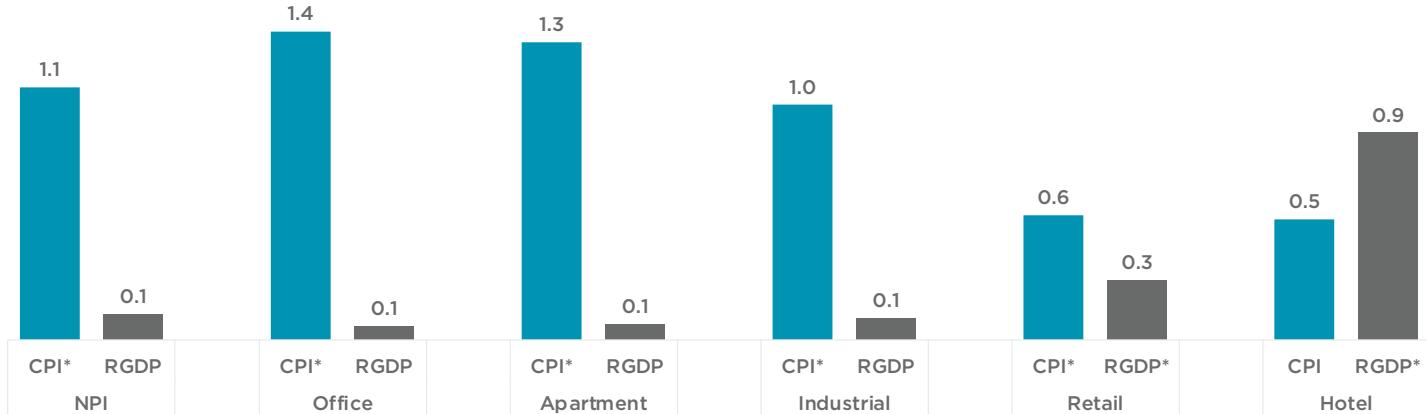
Dependent Variable	NCREIF Total Return	Dow Jones REIT Index Total Return	Change in REIT Implied Cap Rate
Independent Variables	Change in real gross domestic product (RGDP) Change in consumer price index (CPI) Recession dummy variable ² (RDV)		
Data Frequency	Quarterly		
Time Period	Q1 1978 – Q3 2021	Q2 2003 – Q3 2021	Q2 1998 – Q3 2021

NCREIF Total Return. As expected, total returns tend to be higher when CPI and/or RGDP are growing, while recessions negatively impact returns. What was more surprising is that CPI and recession relationships are statistically significant while the RGDP relationship is not. This means that outside of a recession, total returns are far more sensitive to inflation than to growth. Moreover, the CPI coefficient for the NCREIF index is 1.1, meaning that for every 1% increase in

inflation, total returns are expected to increase by 1.1%. In other words, CRE not only protects against higher inflation but provides outsize returns in specifically these environments. These relationships hold true for the major property sectors except for hotels, which are driven more by RGDP. Retail has statistically significant relationships with all three variables and is more evenly impacted by changes in growth and inflation.

Figure 6

NCREIF TOTAL RETURN REGRESSION COEFFICIENTS : Q1 1978 - Q3 2021



Source: NCREIF, U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics , Cushman & Wakefield Research

Note: Coefficients marked with an (*) are statistically significant at the 5% level

2 Recessions can disrupt the typical relationship between variables and have outsize effects on the overall analysis. We introduce this dummy variable to correct for this tendency. Another way of thinking of it is that our regression then captures the relationships for the other variables in non-recessionary conditions.



Dow Jones REIT Index Total Return. Public market real estate behaves similarly but with much greater volatility. REIT returns are far more sensitive to recessions, as being in a recession alone produces a 14% negative return over the sample period. Like the private market, CPI is statistically significant both for the overall REIT index and for each property subtype. The coefficients, however, are much larger. For a 1% increase in CPI, our model estimates a 4.5% return—a superb inflation hedge at the cost of greater volatility. In contrast to the private markets, retail and industrial REITs have the greatest inflation sensitivity, though this quality is still strong among the other property types. RGDP meanwhile is in no instance statistically significant, letting us discount the apparent paradox of negative RGDP coefficients.

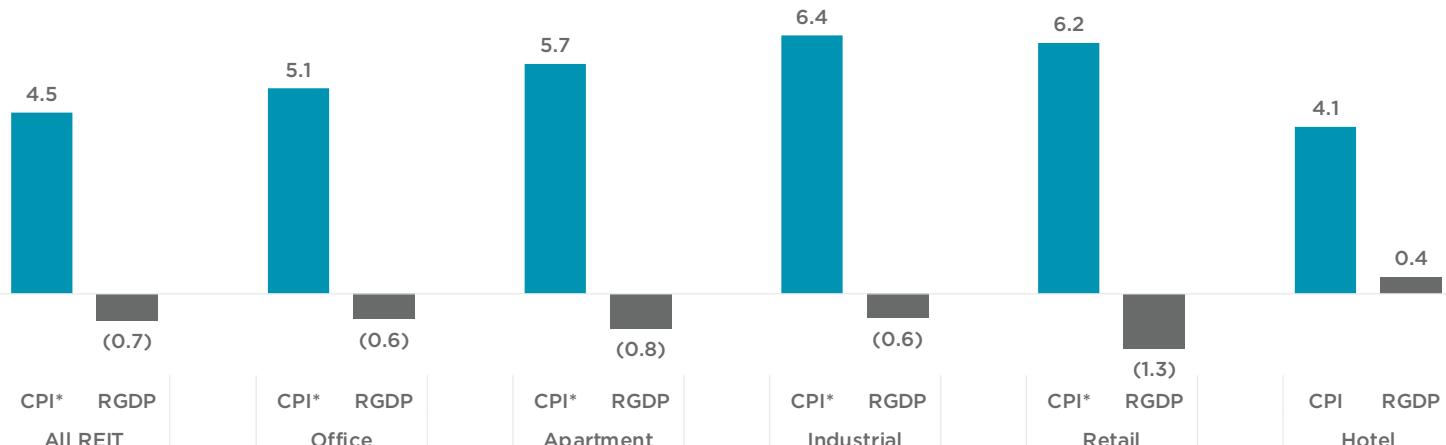


REIT

Every 1% increase in inflation is associated with a 1.1% return in private CRE or 4.5% in the REIT market.

Figure 7

DOW JONES REIT INDEX TOTAL RETURN REGRESSION COEFFICIENTS : Q2 2003 - Q3 2021



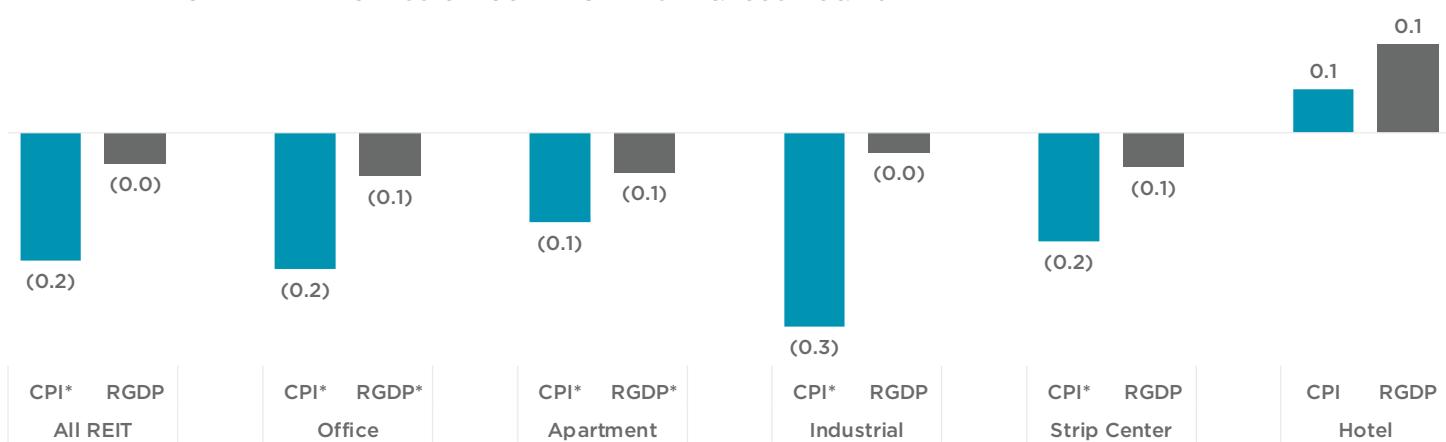
Source: S&P Dow Jones Indices LLC, U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, Cushman & Wakefield Research
Note: Coefficients marked with an (*) are statistically significant at the 5% level

REIT Implied Cap Rate. Cap rates are far less sensitive to changes in growth and inflation compared to either private or public market total returns. As with the total return indices, CPI is consistently statistically significant while RGDP is significant in only a few instances (office and apartment). The sign of the coefficients in either case is negative, meaning that for a 1% increase in inflation, major sector cap rates are expected to fall by 0.2%. While our analysis does not explicitly incorporate the effect of interest rates, these results suggest to the extent that greater inflation tends to correspond with higher interest rates, spread compression more than compensates for such increases on average.

It is important to stress that real estate markets are complex, driven by a wide range of factors beyond those in our study. The bottom line is that runaway inflation would be damaging to the economy and therefore damaging to the property markets. But for the reasons we've outlined in our paper we see that as a low probability scenario. The most probable scenario is that inflation will remain elevated for a period before settling back down. As our study shows, some inflation, even elevated inflation, can often have a net positive impact on property values.

Figure 8

REIT IMPLIED CAP RATE REGRESSION COEFFICIENTS : 2Q 1998 - 3Q 2021



Source: Green Street, U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, Cushman & Wakefield Research

Note: Coefficients marked with an (*) are statistically significant at the 5% level

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