

Is Commercial Real Estate an Inflation Hedge?

BY MARTHA S. PEYTON, PH.D., CRE

INTRODUCTION AND FINDINGS

Inflation is among the worst nightmares depriving investors of peaceful sleep. Inflation erodes the value of corporate earnings and roils stock investors; inflation favors borrowers as debt repayments are made in lower value dollars, and inflation pummels consumers—especially those on fixed incomes—by depressing the purchasing power of their incomes. With the trough of the last recession now almost three years past and with the recovery characterized by a peculiar set of circumstances, inflation nightmares appear to be on the rise.

In an effort to quiet their uneasiness, investors are re-examining the capacity of various asset types to offer inflation protection, should inflation become problematic. Conventional wisdom and some solid historical research show that commercial real estate does indeed offer inflation protection, albeit imperfect. This article examines both inflation potential for the United States economy over the next few years and the capacity of commercial real estate to provide inflation protection.

FINDINGS

The findings presented in this article can be summarized in four main points:

- First, analysis of current economic conditions and of the drivers of inflation identified in up-to-date models does not justify inflation fears at this point in time, despite conventional wisdom's contrary view.
- Second, U.S. commercial real estate investment performance history is more strongly correlated with inflation history than is performance of Treasuries, stocks, bonds or REITs. Additionally and perhaps more

important, commercial real estate performance for five-year holding periods has beaten inflation over those periods with 84 percent probability.

- Third, the average basis point outperformance of commercial real estate versus inflation has beaten Treasuries and bonds, but not stocks.
- Fourth, with inflation likely to cycle at approximately a two percent average, the absolute performance of investments is a more advantageous focus for investors than inflation protection, which is a low hurdle.

INFLATION OVERVIEW

Fear of inflation is a natural reflex in today's economy because the aggressive monetary ease, now underway to support economic recovery, has historically been difficult



About the Author

Martha S. Peyton, Ph.D., CRE, is managing director and head of Global Real Estate Strategy and Research for TIAA-CREF. Peyton and her team are responsible for providing investment research and portfolio strategy analysis for the Global Real Estate investment management team and for related businesses of the organization.

Peyton joined TIAA-CREF in 1993 and has 30 years of financial industry experience. Her prior experience includes financial executive positions with Marine Midland Bank's Credit Policy division and Domestic Economics group. Peyton also formerly taught economics at Fordham University and Manhattanville College. She is a Counselor of Real Estate and a member of the American Real Estate Society, the Urban Land Institute and the International Council of Shopping Centers. Peyton earned a doctorate degree in economics from Fordham University, as well as a bachelor of arts and a master's degree.

Is Commercial Real Estate an Inflation Hedge?

to unwind. In the past, when easy money remained in place too long, it contributed to inflation. Similarly, fiscal policy in the form of excessive deficit spending has also contributed to inflation at different times in the past. This history is the foundation of the famous “Phillips Curve” relationship, which shows higher inflation associated with lower unemployment rates. Within the context of the business cycle, those lower unemployment rates can be the result of either excessive easy money or deficit spending, or both. With the federal funds rate holding at essentially zero since December 2008, and with the federal deficit hitting a historically high 10.1 percent of GDP in fiscal year 2009, concern about inflation would appear to be rational. Conventional wisdom suggests that the combined fiscal and monetary stimulus eventually will boost demand beyond the economy’s capacity and thereby ignite inflation.

History also shows that commercial real estate investment can offer protection from the ravages of inflation. This history is the foundation of the uptick in investor interest in commercial real estate when inflation fears flare up. Researchers have thoroughly examined the question of whether commercial real estate investment offers inflation protection; the unanimous conclusion is “it depends.”

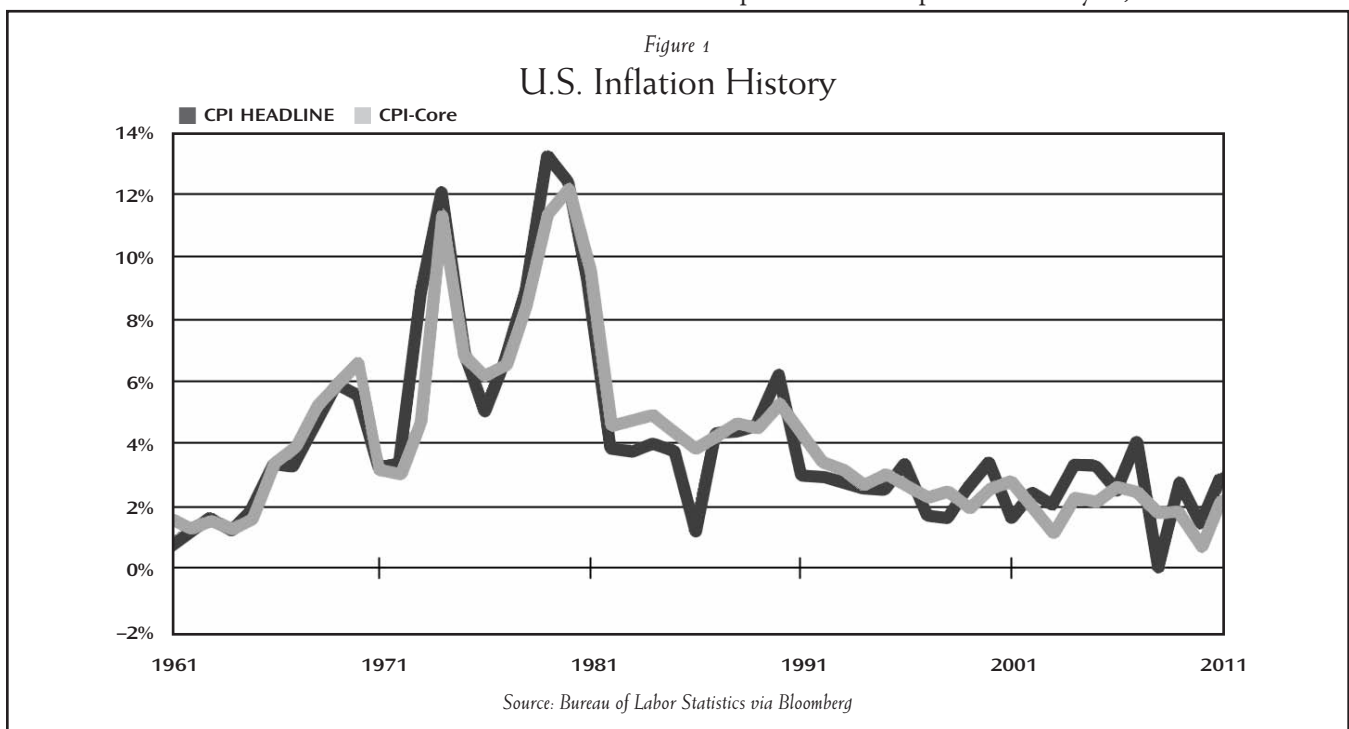
With these comments as a backdrop, the remainder of this article has the following goals:

- Review the path of recent inflation and the risk that current monetary and fiscal policies will over-stimulate the economy and ignite inflation;
- Update measures of the correlation between commercial real estate performance and inflation, explaining the underlying characteristics of the asset class that might be sources of inflation protection;
- Offer some analysis of the prospects that U.S. commercial real estate is currently positioned to offer inflation protection over the next several years.

QUICK LOOK AT LONG-TERM INFLATION HISTORY

As shown in Figure 1, the U.S. inflation rate has been bouncing around two percent for more than a decade, both for the “headline” all-items consumer price index (CPI) and for the “core,” which excludes food and energy prices. History shows similarly low inflation in the early 1960s, which accelerated in mid-decade through the early 1980s when it began a rocky path downward.

The story behind the history is well known. The uptick in inflation that began in the mid-1960s reflected strong economic growth, bolstered by the tax cuts of the Kennedy administration. Fiscal policy later in the sixties provided stimulation of a different kind through spending on the Vietnam War without raising taxes—a classic “guns and butter” story. In 1973, the first oil shock sent inflation up to almost nine percent for the year, with core inflation



Is Commercial Real Estate an Inflation Hedge?

rising less sharply but still a material 4.7 percent. The severe 1975 recession cooled inflation but only to a five percent rate in 1976, following the recession's trough. In 1979, the Iranian Revolution ignited another oil shock that sent both overall inflation and core inflation into double digits. That bout was followed by double-dip recessions in 1980 and 1982 that, again, pushed inflation back to more tolerable levels. The 1982 recession was the most severe post-WWII recession up to that time. Its severity was reflective of a new anti-inflation approach to monetary policy led by Federal Reserve Chairman Paul Volcker.

The Volcker era change in policy was accompanied by a strong uptrend in global trade and broadening and deepening in financial markets, both of which also contributed to the downward trend in inflation rates through the subsequent decade and to the present. Global trade has expanded both in absolute terms and also in its importance to the U.S. economy. In 1978, the nominal value of exports and imports were together equivalent to 17 percent of U.S. GDP. In 1999, they were equivalent to 24 percent, and in 2011, 32 percent. Imports have grown more strongly than exports, with imports equivalent to nine percent of GDP in 1978 and 18 percent in 2011, while exports were equivalent to eight percent of GDP in 1978 and 14 percent in 2011. Compositionally, imports of non-auto capital goods and non-auto consumer goods expanded the most vigorously; the former was 27 times larger in 2011 than in 1978, while the latter was 18 times larger. Nominal GDP was seven times larger in 2011 versus 1978. The increasing availability of imports over the period indicated a diminishing capacity for U.S. producers to control prices. At the same time, competition from imports also affected U.S. labor markets by constraining the scope of unions and diminishing their power to influence wages. In 1983, 23 percent of the U.S. labor force was covered by union collective bargaining; in 2011 the proportion was just under 12 percent.

Additional discipline affecting U.S. inflation has come from the operation of financial markets. The Federal Reserve manages short-term interest rates by targeting the federal funds rate, which represents the cost of overnight funds. The federal funds rate anchors the short end of the Treasury yield curve. Treasury security yields are determined by the "market" against the backdrop of the federal funds rate. Investors will calibrate yields on Treasuries to reflect their inflation expectations over the term to maturity. When investors judge inflation risk to be rising, they will push up Treasury yields which, in

turn, serve to depress economic activity and send a message to the Fed that the market is worried. This discipline has served to reinforce the Fed's commitment to keeping inflation in check. It has evolved through improvements in trading technology and deepening in the stock of traded Treasury securities over the past few decades. In effect, bond market traders function as the inflation police force.

The two percent inflation trend that took hold in the latter part of the 1990s was the goal of monetary policymakers and it was achieved. The lesson learned from this period was that policymakers waited too long to tighten as core inflation took hold prior to both the 1975 and 1980–82 recessions. Because of this failure, the inflation cures were more painful than might have otherwise occurred.

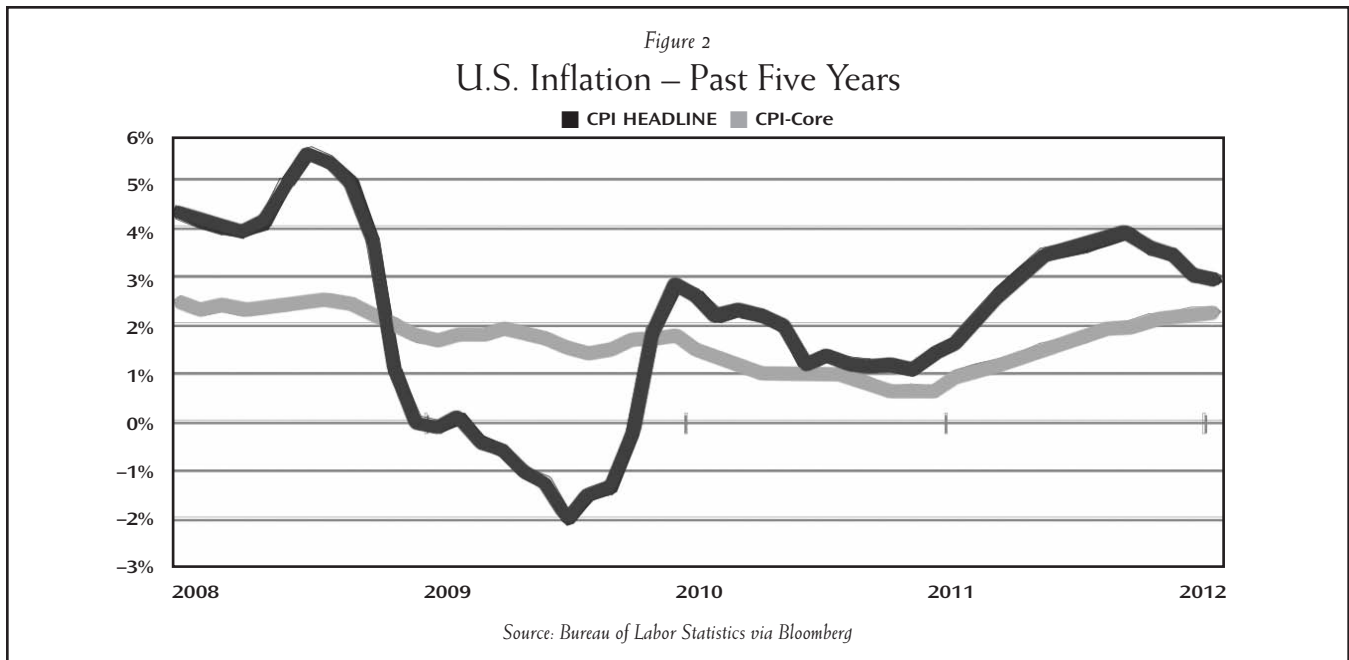
RECENT INFLATION HISTORY

The recent history of inflation is shown in Figure 2. Since the peak of the last business cycle expansion in December 2007, core inflation has continued to hug the two percent trend line, though more often below two percent than above it. Headline inflation has been more volatile as expected because of ongoing volatility of food and energy prices.

The story behind inflation over this period is also well known. The 2008–2009 recession proved to be the most severe since the 1930s Great Depression. The financial crisis that erupted in the fall of 2008 pummeled the already weak economy and pushed headline CPI into negative territory while weakening core inflation. The weakening was serious enough to raise the risk of "deflation" wherein falling prices encourage buyers to postpone purchases and wait for even lower prices in the future. The official trough of the recession was deemed to be June 2009 and the headline CPI did perk up after that, reflecting both the return of GDP growth in the U.S. along with strong economic growth in several developing countries including China, India and Brazil. Growth in those countries boosted demand and prices for natural resources which are reflected in the headline CPI.

Now, roughly three years after the recession's trough, inflation fears are building. First, the strong growth in developing countries and the impact on demand for food and energy is influencing headline CPI inflation. As the middle classes continue to grow in the developing world, this pressure only will get worse. Second, the monetary policy that helped to restore economic growth in the U.S.

Is Commercial Real Estate an Inflation Hedge?



has kept the federal funds rate at essentially zero since December 2008. The historic link between “easy money” and inflation is a tenet of conventional wisdom; is the Fed again waiting too long to tighten? Third, the huge federal fiscal deficit is another risk reminiscent of the 1960s “guns and butter” budgets that contributed to the inflation of the 1970s.

Despite the reasonableness of these fears, current Federal Reserve Chairman Ben Bernanke espouses confidence that inflation is not an imminent threat and that tighter monetary policy is not warranted until the economy is stronger. Why?

A good foundation for the chairman’s confidence is embodied in the change since the Volcker years in the economic mechanisms that govern inflation. Federal Reserve researchers along with other economists have updated the famous Phillips Curve relationships that many laymen still adhere to.¹ The new models show that the growth in the international trade component of the U.S. economy as described earlier has made the trade sector an influence on the path of U.S. inflation. The growing importance of trade means that the “supply and demand” that drives prices is now global supply and demand. As a result, fewer and fewer businesses have the power to raise prices without losing customers to cheaper alternatives produced elsewhere. It means that consumers must manage rising commodity prices within their budgets because they have no pricing power to negotiate

higher wages. The functioning of these mechanisms explains why the \$100-plus/barrel oil shocks of recent years did not feed through to core inflation as they did in the 1970s.

The January 2012 Federal Reserve Federal Open Market Committee forecast reflects these findings. The forecast shows expected inflation of no more than two percent through 2014 as the transitory effects of recent food and energy price spikes dissipate. Reviewing the history of these forecasts shows that the Fed’s views on inflation retain a cyclical pattern with the range of core inflation from zero percent to 2.5 percent and headline inflation from 0.2 percent to 3.6 percent at various times over the past few years. In sum, the inflation cycle has not been eliminated but its peaks are unlikely to reach anywhere near the experience of the 1970s.

COMMERCIAL REAL ESTATE INVESTMENT PERFORMANCE AND INFLATION

Figure 3 shows the correlation between the National Council of Real Estate Investment Fiduciaries (NCREIF) National Property Index (NPI) that measures investment performance on U.S. institutional quality commercial real estate and CPI inflation. The correlations cover quarterly data for the period from 1978–2011; the NCREIF index data begins in 1978 and is available only on a quarterly basis, necessitating that the calculation be limited to this time period.

Is Commercial Real Estate an Inflation Hedge?

Figure 3

Asset Class Correlations
With Inflation

NCREIF-NPI total return	0.38
NCREIF-NPI NOI growth	0.10
1-yr. Treasury total return	0.20
10-yr. Treasury total return	-0.29
S&P 500 total return	0.03
NAREIT total return	0.09
Corporate Bonds	-0.20

Source: NCREIF, Ibbotson, Bloomberg

A correlation of 1.00 would indicate that the asset class moves in lock step with inflation while a correlation of negative 1.00 would indicate the exact opposite; a perfect inflation hedge would have a correlation close to 1.00. The correlation between commercial real estate returns and inflation is 0.38. While it is rather low compared with a perfect inflation hedge, it beats correlations between inflation and every other asset type shown in the table. This very simple calculation is a basis for the conclusion that commercial real estate serves as an inflation hedge, albeit imperfect, relative to other investments.

A further analysis uses annual data for NCREIF-NPI total return, for its net operating income (NOI) growth and capital value components, and for individual property type total return and NOI growth components. NCREIF data is more accurate on an annual basis than on a quarterly basis because the distortions related to appraisal timing are greatly reduced. In addition, NOI data is particularly noisy on a quarterly basis with four-quarter growth rates greatly reducing the noise. Results are shown in Figure 4.² The correlation of total return with inflation is essentially unchanged at 0.40 using annual data, versus 0.38 using quarterly data. However, correlation between inflation and NOI growth is markedly higher at 0.49.

Figure 4 also shows that the correlations are not stable over time. If the high inflation period of the late 1970s and early 1980s is excluded, the correlations are very much lower. For the 1983–2011 period, the correlation between NCREIF-NPI total return and inflation is 0.12 while the correlation of NOI and inflation is 0.19, versus 0.40 and 0.49, respectively, for the period beginning in 1978.

Figure 4

Property Type Correlations
With Inflation

	(1978 to 2011)	(1983 to 2011)
all property total return	0.40	0.12
all property NOI growth	0.49	0.19
all property capital return	0.38	0.14
apartment total return		0.14
apartment NOI growth		0.35
apartment capital return		0.14
industrial total return		0.12
industrial NOI growth		0.29
industrial capital return		0.13
office total return		0.04
office NOI growth		0.05
office capital return		0.07
retail total return		0.23
retail NOI growth		0.17
retail capital return		0.26

Source: NCREIF, Bloomberg

Yet, there is still some meaningful correlation with inflation for the shorter period shown in property type performance separately. As shaded in Figure 4, the 0.35 correlation between apartment NOI and inflation, the 0.29 correlation between industrial property NOI and inflation, and the 0.26 correlation between retail property capital return and inflation are all meaningful.

So far, correlation calculations do not seem to provide very strong evidence for the inflation hedging capacity of commercial real estate. In fact, the lower correlations for the later period could be easily misinterpreted to mean that commercial real estate became a less powerful hedge against inflation in more recent years. A more accurate conclusion is that the structural decline in inflation after 1983 has made correlation a rather ineffective tool for understanding the relationship between commercial real estate performance and inflation.

HOW COMMERCIAL REAL ESTATE INVESTMENT RESPONDS TO INFLATION

Leaving correlation aside, several characteristics of commercial real estate investments contribute to its capacity to provide inflation protection. They are well described in the Huang and Hudson-Wilson 2007 article cited above.³ Most important is the structure of leases which often includes step-ups in rent over the term of the lease. The most inflation protective step-ups would call for explicit indexation to inflation. Even without step-ups, leases have a specified term calling for a new rent

Is Commercial Real Estate an Inflation Hedge?

contract upon renewal. If the local property market does not have a supply glut at the time of renewal, the adjustment in rent is, at a minimum, likely to catch up to inflation. Shorter-term leases can catch up more quickly than longer-term ones.

The assignment of expenses can provide further inflation protection for commercial real estate investors. Some leases pass all expenses through to tenants, most commonly the "triple net" leases on industrial space, while others pass through only some specified expenses as in the common area maintenance charges for regional malls.

Property valuation is also affected by inflation through two avenues: NOI growth and capitalization rates, both components of property value that can be described roughly as "NOI times the inverse of the cap rate." To the degree that inflation protection is embedded in the flow of net operating income, property value will be affected as well, without any change in cap rates. But, the market capitalization rate is itself affected by inflation through its link to longer-term interest rates.⁴ Over the cycle, higher interest rates will materialize as economic growth heats up, creating negative pressure on property values. But at the same time, strengthening economic growth also will bolster NOI growth, creating a positive impact on property values. The stronger the response of NOI growth to inflation, the more likely it is that property values will be enhanced rather than depressed as interest rates rise with the maturing business cycle.

Cap rates also are affected by the risk appetite of investors. If investors expect commercial real estate to offer inflation protection, the spread between cap rates

and longer-term Treasury rates will tighten compared with spreads on other asset types that offer weaker inflation protection, such as corporate bonds.

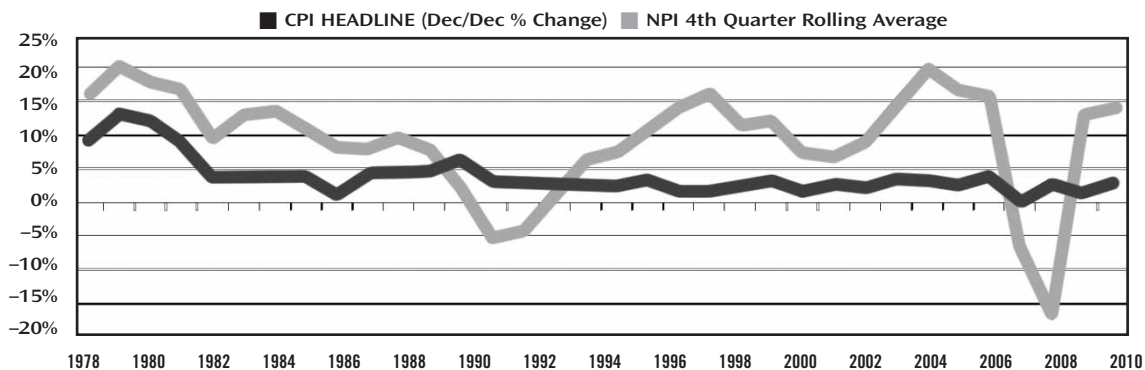
HOW COMMERCIAL REAL ESTATE PERFORMS OVER TIME AND VS. OTHER ASSET TYPES

The traits of commercial real estate investments described above are most powerful when there is no supply overhang in commercial real estate markets. When local markets build more than their economies can absorb, power shifts to tenants who can negotiate very favorable terms no matter what the inflation environment might be. Local markets vary with regard to their susceptibility to supply excesses. These differences offer commercial real estate portfolio managers opportunity to construct portfolios that can be more inflation protective by virtue of selecting markets less vulnerable to supply excess.

There are times, however, when supply excess is geographically pervasive. The early 1990s was such a period and commercial property investment performance underperformed inflation by a substantial margin. Similarly, the recent recession hobbled U.S. economic growth, diminished the demand for space, and created a glut of vacant space. During this period as well, inflation exceeded NCREIF-NPI total return.

Even excluding these periods of property market imbalance, the correlation between inflation and commercial real estate returns also has been compromised by the structural changes in inflation. As described earlier, the path of inflation shifted materially after the 1982 recession and followed a downward trend through the late 1990s. Commercial real estate performance did not

Figure 5
U.S. Inflation vs. Commercial Real Estate Total Return



Source: Bureau of Labor Statistics (via Bloomberg) and NCREIF

Is Commercial Real Estate an Inflation Hedge?

decline in lock step with the structural decline in inflation because it is independent of many of the factors that created the inflation shift. This has been to the benefit of investors.

Over the history covered in this research and shown in Figure 5, investors in commercial real estate benefited to the degree that commercial real estate returns *beat* inflation regardless of its correlation.

The benefit was measured by constructing portfolios of commercial real estate, Treasurys, stocks and bonds over five-year investment horizons. This time frame recognizes commercial real estate is a relatively illiquid asset class with high transactions costs that make frequent trading impractical. Portfolios were created by selecting 5,000 random *starting points* over the period 1978 to 2006; starting points end in 2006 to accommodate the five-year holding period ending in 2011. Results are shown in Figure 6.

Does commercial real estate investment offer inflation protection? According to the portfolio results for five-year holding periods, commercial real estate returns beat inflation in 84 percent of the 5,000 random portfolios created for the analysis. On average, the outperformance was 698 basis points. Short-term and long-term Treasurys as well as corporate bond portfolios beat inflation more frequently than commercial real estate but with smaller degrees of outperformance. Stock performance beat inflation slightly less frequently than commercial real estate but with a larger degree of outperformance on average. To compare these results, the probability of outperformance is multiplied by the average basis points of outperformance in the third column of the table. The probability-weighted outperfor-

mance of commercial real estate was 583 basis points, second only to stocks at 923 basis points.

But, of course, there are caveats associated with these results. Most important, the 1978–2011 performance history available to evaluate inflation protection was a period dominated by the structural decline in inflation that began in 1982. Because inflation was trending down, the inflation expectations embedded in long-term bonds was generally above the inflation that actually materialized. This explains why long-term bonds outperformed inflation for 93 percent of the 5,000 portfolio scenarios.

Looking ahead, it is not possible for inflation in the years ahead to repeat the path shown in the history examined here. Inflation is simply too low now to trend downward without igniting a deflation morass. As discussed above, inflation is currently inching up toward an expected two percent average with the potential to gyrate cyclically around that rough average. The upward trajectory is welcomed as an indication that deflation risk has diminished. At such low levels, investors can do better by targeting absolute performance in conjunction with downside risk tolerance rather than targeting inflation protection. With a two percent expected average, the latter is simply too low a hurdle.

CONCLUSIONS

The key to commercial real estate investment performance is to construct portfolios that are protected from supply excesses that impair the inflation protection otherwise associated with commercial real estate. Historically, commercial real estate has handily beaten inflation except during periods of severe supply gluts brought about by too much construction or a collapse in demand. Those

Figure 6

Asset Class Investment Performance vs. Inflation

(5-year holding periods, 5,000 random starting years; data drawn from 1978-2011 performance history)

	% of 5,000 that beat inflation	avg bps of outperformance	probability-wtd outperformance	% of 5,000 portfolios that don't beat inflation	avg bps of underperformance	probability-wtd underperformance
NCREIF-NPI total return	84%	698	583 bps	16%	(234)	(39) bps
Short-term Treasury total return	91%	320	290 bps	9%	(35)	(3) bps
Long-term Treasury total return	93%	617	572 bps	7%	(76)	(6) bps
S&P 500 total return	79%	1,167	923 bps	21%	(348)	(73) bps
Corporate Bonds	98%	543	535 bps	2%	(53)	(1) bps

Source: Ibbotson, Bloomberg, NCREIF, TIAA-CREF Global Real Estate

Is Commercial Real Estate an Inflation Hedge?

periods have been infrequent on a national basis. For local markets, imbalances have been more prevalent, reflecting local market characteristics. Investors can benefit from focusing on these characteristics to build commercial real estate portfolios that promise stronger returns along with beating inflation. ■

Editor's note: This article updates information first presented in a paper published by the TIAA-CREF Global Real Estate Research Group.

REFERENCES

Huang, H. and S. Hudson-Wilson, "Private Commercial Real Estate Equity Returns and Inflation," *Journal of Portfolio Management*, Special Issue, 2007.

Martinez-Garcia, E. and M.A. Wynne, "The Global Slack Hypothesis," Federal Reserve Bank of Dallas, Staff Papers, September 2010.

Peyton, M.S., "Capital Markets Impact on Commercial Real Estate Cap Rates: A Practitioner's View," *The Journal of Portfolio Management*, Special Issue, 2009.

ENDNOTES

1. For example, see Martinez-Garcia, E. and M.A. Wynne, "The Global Slack Hypothesis," Federal Reserve Bank of Dallas, Staff Papers, September 2010.
2. These calculations update similar calculations in Huang, H. and S. Hudson-Wilson, "Private Commercial Real Estate Equity Returns and Inflation," *The Journal of Portfolio Management*, Special Issue, 2007.
4. Ibid.
5. See author's article on capitalization rate models in *The Journal of Portfolio Management*, Special Issue, 2009.