

## Commercial Real Estate as an Inflation Hedge

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### Executive Summary

Income-producing commercial real estate was accepted as a separate asset class by institutional investors in the 1990s and has become a major component of portfolio composition and diversification over the last 20 years. A major study in 1991 found that direct (private) real estate was an effective hedge against inflation, except during periods of market imbalance (high vacancy rates).<sup>1</sup> Now almost 20 years later, the data for both private and public real estate are examined to see if real estate has continued to exhibit inflation hedging characteristics. The results show that both private real estate and public real estate (REITs) exhibited inflation hedging abilities over the past 38-year period. Returns were also much higher in up-cycle periods than down-cycle periods.



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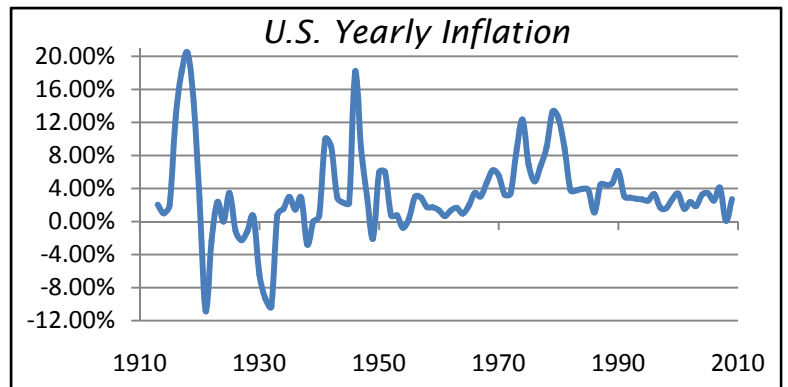
### Inflation

Inflation is the increase in prices of goods and services that reduce consumers' purchasing power. The most widely used index of inflation is the consumer price index (CPI). The index is generated by the U.S. Bureau of Labor Statistics (BLS) and was started in 1913. The CPI has had an average increase of 3.36% over the last 97 years (Exhibit 1). After a period of high inflation from the mid 1970s to the mid 1980s, inflation has been under control, averaging less than the long-term 97-year average (Exhibit 2). Many economists are forecasting that inflation may move up to above long-term averages in the next few years due to heavy national debt levels.

Exhibit 1

U.S. Yearly Inflation		
	Average Inflation	
97 Years	1913-2009	3.36%
50 Years	1959-2009	4.06%
40 Years	1969-2009	4.55%
30 Years	1979-2009	3.85%
20 Years	1989-2009	2.82%
10 Years	1999-2009	2.54%

Exhibit 2



Source: BLS.

<sup>1</sup> *Journal of Real Estate Research*, "The Impact of Inflation and Vacancy on Real Estate Returns," July 1991.

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## Real Estate Indexes

Income-producing commercial real estate has been accepted as a distinct and separate asset class along with stocks, bonds, commodities and cash for both institutional and individual investors over the past twenty years. When making investments, many investors are concerned about whether their investments will keep up with inflation so that they do not lose their purchasing power in the future. Therefore, examining the historic inflation hedging characteristics of real estate might help to indicate how real estate may perform in the future.

To compare real estate returns to inflation, there are two real estate return indices available.

### **NCREIF Index**

The NCREIF Index is published by the National Council of Real Estate Investment Fiduciaries. It is an index of properties owned by institutional investors (mainly pension funds and endowments). The index was started in 1978 and has individual property returns for office, industrial, retail, apartment and hotel properties. The index is an unleveraged return (i.e., the property's return is based on the income it generates as though there is no mortgage on the property as most institutions buy their properties all cash) plus the price appreciation. The price appreciation is based upon quarterly appraisals done on each property and the actual sales price when the property is sold. Because many institutional investors do not use leverage, the return is lower than many private individual investors may experience in their equity investments when they use leverage (a mortgage) on a property.

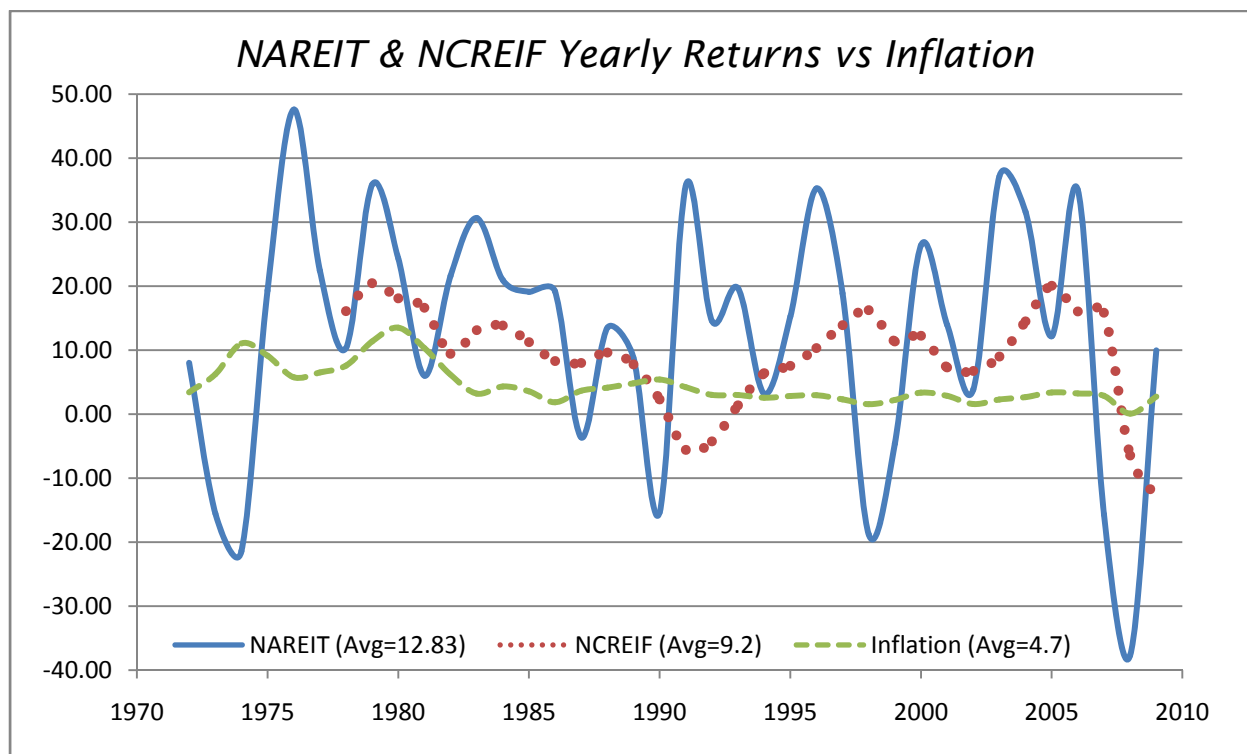
### **NAREIT Equity REIT Index**

The NAREIT Equity REIT Index is published by the National Association of Real Estate Investment Trusts in conjunction with the international EPRA/FTSE stock index group. It is the index of publicly traded real estate investment trusts in the United States (more than 40 countries have now adopted the REIT structure). The index was started in 1972 and includes the returns of companies that hold large portfolios of income-producing commercial properties as investments. Equity REITs must receive at least 75% of their income from rents on their buildings. The majority of the index is made up of companies that hold office, industrial, retail, apartment and hotel properties; but there are also companies that invest in unique property types such as self storage, healthcare and timber in the index. REIT returns come from the dividends they pay (and REITs must pay out 90% of their taxable income to retain their tax pass-through status like mutual funds) and the change in their stock price. REIT returns include the use of leverage and management's ability to purchase and sell properties for a larger portfolio profit.

## Real Estate Returns Versus Inflation

The quarterly average returns for NCREIF and NAREIT are plotted against the U.S. CPI in Exhibit 3 below. As can be seen, the NCREIF average return over the last 32 years has equaled 9.2%, which is 2.02 times the average rate of inflation of 4.55%, and the NAREIT return of 12.83% over the last 38 years was 2.8 times the average rate of inflation. Based upon these average returns, there is no question that income-producing commercial real estate has beaten inflation by a wide margin. The graph however, also shows that there has been volatility in the returns. The NCREIF index has had two periods of negative returns and the NAREIT index has had five periods of negative returns (due to the volatility in public REIT company prices). Thus we also need to look at investing in real estate during different cycles.

Exhibit 3



Sources: NCREIF, NAREIT, BLS, Mueller.

## Real Estate Performance During Investment Return Cycles

We first examine private real estate investment performance by looking at the NCREIF index during periods of rising and falling total returns. Exhibit 4 shows that during the three periods of increasing NCREIF returns, those returns beat inflation by 161%, 266% and 429% respectively. NCREIF returns averaged 11.5% during increasing return times and beat inflation by an average 286%. During periods when returns were decreasing NCREIF returns beat inflation by 179%, 426% and 158%. NCREIF returns averaged 7.7% during decreasing return times and beat inflation by an average of 254%. Long-term stability of returns in private direct real estate is quite evident.

Exhibit 4

Period	NCREIF Average Period Return	Return Trend	Inflation Average Period Growth	NCREIF Return Over Inflation
1Q78-1Q80	15.94%	Increasing	9.89%	161%
2Q80-3Q92	8.80%	Decreasing	4.93%	179%
4Q92-3Q98	6.76%	Increasing	2.54%	266%
4Q98-2Q02	10.67%	Decreasing	2.50%	426%
3Q02-1Q06	11.70%	Increasing	2.73%	429%
2Q06-4Q09	3.69%	Decreasing	2.33%	158%

Sources: NCREIF, BLS, Mueller.

We next examine public real estate investment performance by looking at the NAREIT index during periods of rising and falling total returns. Exhibit 5 shows that during the seven periods of increasing NAREIT returns, those returns beat or underperformed inflation by 184%, 813%, 433%, 652%, 157%, 876% and -321% respectively. NAREIT returns averaged 15.11% during increasing return times and beat inflation by an average of 399%. During periods when returns were decreasing, NAREIT returns beat or underperformed inflation by -46%, 201%, 336%, 540%, -98%, 606% and -480%. NAREIT returns averaged 5.9% during decreasing return times and beat inflation by an average of 151%. The emotions of the public stock market are evident in REIT returns as three of the seven decreasing return periods had negative total returns and one of the seven increasing return periods was negative, although this last period of increasing returns has just started and may show a positive average return when it ends.

Exhibit 5

Period	NAREIT Average Period Return	Return Trend	Inflation Average Period Growth	NAREIT Return Over Inflation
1Q72-3Q74	-2.92%	Dec	6.39%	-45.7%
4Q74-4Q76	13.73%	Inc	7.46%	183.9%
1Q77-2Q82	18.73%	Dec	9.31%	201.2%
3Q82-2Q83	30.28%	Inc	3.72%	812.8%
3Q83-3Q90	12.81%	Dec	3.82%	335.5%
4Q90-1Q93	15.99%	Inc	3.69%	433.6%
2Q93-3Q94	14.60%	Dec	2.71%	539.6%
4Q94-3Q97	17.63%	Inc	2.71%	651.5%
4Q97-2Q99	-1.56%	Dec	1.59%	-98.0%
3Q99-4Q00	4.79%	Inc	3.05%	156.7%
1Q01-1Q03	13.27%	Dec	2.19%	605.9%
2Q03-4Q06	25.07%	Inc	2.86%	876.1%
1Q07-1Q09	-13.80%	Dec	2.88%	-479.5%
2Q09-4Q09	-1.72%	Inc	0.05%	-320.9%

Sources: NAREIT, BLS, Mueller.

## Real Estate Performance During Occupancy Cycles

We next examine private and public real estate investment performance during periods of increasing and decreasing occupancies (Exhibit 6). Occupancy data on all five property types has been collected and available since the mid 1980s and the five major property types move in similar occupancy cycles. To reach back to the early 1970s, only office data was available, so the office occupancy cycle is used as a representative proxy of all property types. History has also shown that the rise and fall of rents are driven by occupancy rising and falling. Occupancy and rent combined drive the earnings of real estate properties which is half of the formula for total return. The other half of returns comes from price changes, which are driven by capital flowing to real estate versus other investments such as stocks, bonds and commodities.

Average occupancy in office has seen a slow decline over the past 35 years. This is due to the historic peak of office occupancy in 1979 and every cycle since has had lower peak occupancies. Inflation also showed a slow decline. We find that both public and private real estate have had positive and above-inflation returns in all

increasing and decreasing occupancy periods, except the most current decreasing period 3Q07 through 4Q09. However, this current decreasing period is not over yet and returns in 2010 may improve and change the averages in this down-cycle when it is over. Private real estate returns averaged 11.3% during increasing occupancy periods, which was 310% of the average 4.1% inflation increase. Public REIT returns averaged 19.9% yearly returns during increasing occupancy periods, which was 555% higher than inflation. Private real estate returns averaged 5.6% during decreasing occupancy periods, which was 140% of the average 3.4% inflation increase. Public REIT returns averaged 4.2% yearly returns during decreasing occupancy periods, which was 20% higher than inflation during those periods.

Exhibit 6

Period	Average Office Occupancy for Period	Occupancy Trend	NCREIF Average Period Return	NAREIT Average Period Return	Inflation Average Period Growth	NCREIF Return over Inflation	NAREIT Return over Inflation
1Q76-1Q79	90.5%	Increasing	13.49%	22.48%	6.78%	199%	332%
2Q79-2Q91	86.6%	Decreasing	11.07%	14.87%	5.71%	194%	260%
3Q91-2Q00	86.0%	Increasing	6.15%	11.98%	2.62%	235%	457%
3Q00-2Q03	85.6%	Decreasing	8.40%	14.04%	2.38%	353%	589%
3Q03-2Q07	83.5%	Increasing	14.41%	25.29%	2.89%	498%	875%
3Q07-4Q09	83.2%	Decreasing	-2.63%	-16.32%	2.06%	-127%	-791%

Sources: NCREIF, NAREIT, BLS, Mueller.

## Conclusion

Income-producing commercial real estate has produced positive long-term returns that have grown at 2.02 times the rate of inflation over the past 32 years for private direct unleveraged real estate, and 2.8 times inflation for public real estate (REITs) over the past 38 years. Real estate does follow economic cycles and looking into periods of increasing and decreasing returns, we found that private NCREIF returns were 285% higher than inflation during increasing return times and 254% higher in decreasing return times. We also found that public NAREIT returns were 399% higher than inflation during increasing return times and 151% higher than inflation during decreasing return periods.

Knowing when return trends will be increasing or decreasing may be difficult, so looking at real estate occupancy as an objective measure of fundamental real estate market health may help investors make better decisions. We found that private NCREIF returns were 310% higher than inflation during increasing occupancy times and 140% higher in decreasing occupancy times. We also found that public NAREIT returns were 555% higher than inflation during increasing occupancy times and 20% higher than inflation during decreasing occupancy times periods.

As of March 2010, the recession has been declared officially over, as the United States is in the third quarter of positive GDP growth and employment growth is expected by most economists to turn positive in the second half of 2010. Real estate occupancy increases usually lag employment growth by a few quarters, and most real estate researchers have predicted occupancy bottoms in 2010 and 2011 for the five major property types. Public REIT returns in 2009 were positive and may have been anticipating the future occupancy upturns. Private NCREIF returns have not yet turned positive. With historic real estate returns much higher in periods of increasing occupancies and returns, the future for real estate investing looks appealing.

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