The Impact of Inflation and Vacancy of Real Estate Returns

Charles H. Wurtzebach* Glenn R. Mueller** Donna Machi**

Abstract. The impact of inflation on the value of assets is considered one of the primary financial concerns of long-term investors. While actual and expected inflation have slowed considerably since the early 1980s, concern over future increases is still a consideration for long-term investors.

Ibbotson and Fall [8], Ibbotson and Siegel [9], Brueggeman, et al. [1], Fogler [6], Hartzell, et al. [7], and Rubens, et al. [15], conclude that real estate compensates the investor for inflation risk. When real estate is added to a mixed-asset portfolio, the inflation risk of the expanded portfolio is substantially below that of the original portfolio (ex-real estate).

The purpose of this study is to examine the relationship between the performance of commercial real estate and inflation. Unlike previous studies, this study examines real estate performance during both high and low inflation periods. The results show that real estate does provide an inflation hedge. Second, real estate returns are broken down by two major property type categories (office and industrial) to determine if any property type differences exist. A major difference is found between the inflation hedging effectiveness of office and industrial properties. Third, the differences are further analyzed in relation to vacancy rates in the two property types. A structural imbalance in the office market is evidenced by high vacancy rates. Therefore, the relative impact of vacancy rates upon office and industrial property performance is examined and found to be a significant factor in explaining returns, thus affecting inflation hedging characteristics.

Introduction

The impact of inflation on the value of assets is considered one of the primary financial concerns of long-term investors such as pension funds and life insurance companies. Since the mid-1970s, combatting inflation has been the overriding goal of the Federal Reserve’s monetary policy; as well as a crucial national political issue. While actual and expected inflation have slowed considerably since the early 1980s, concern over future increases in the rate of inflation is still a dominant consideration for long-term investors.

In attempting to manage inflation, or, more accurately, manage inflation risk, various assets and/or combinations of assets can be purchased in an attempt to protect the investor against inflation’s deteriorating effects. Such assets are called inflation hedges and their return patterns exhibit a positive correlation with inflation, usually measured

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by the Consumer Price Index (CPI). The CPI, published by the U.S. Department of Labor, Bureau of Labor Statistics, is recognized as the broadest and most frequently used measure of actual inflation. Assets that are not particularly good inflation hedges will exhibit return patterns that are negatively correlated with inflation. Stocks have been shown to be an asset class that does not provide inflation hedging characteristics [16].

Therefore, the effectiveness of an asset in providing inflation protection is measured by its ability to reduce or offset the loss in purchasing power resulting from inflation. One of the assets that fit into this "inflation hedge" category is commercial real estate. Commercial real estate has long been considered one of the best inflation hedges. In fact, this characteristic has been one of the principal arguments for including real estate in a pension fund mixed-asset portfolio [7].

Real Estate as an Inflation Hedge: Prior Studies

Various studies have tested the relationship between real estate total returns and inflation. These include Ibbotson and Fall [8], Ibbotson and Siegel [9], Fogler [6], Brueggeman, Chen and Thibodeau [1], Hartzell, Hekman and Miles [7], and Rubens, Bond and Webb [15]. Of these, Brueggeman, et al. [1], Hartzell, et al. [7], and Rubens, et al. [15] performed a test of commercial real estate returns and inflation. The other studies used either residential and/or agriculture data as an indication of real estate returns. Park, Millineaux and Chew [14] looked at the Real Estate Investment Trust (REIT) security vehicle and found it to be a partial hedge against anticipated inflation.

Although the measurement period of real estate return varies over each of the studies, the basic conclusion is that real estate more or less compensates the investor for inflation risk (i.e., real estate provides an effective inflation hedge). Furthermore, these studies suggest that when real estate is added to a mixed-asset portfolio, the inflation risk of the expanded portfolio is substantially below that of the original portfolio (ex-real estate). Thus, the benefits of including real estate in a mixed-asset portfolio consist of not only lowering the portfolio's risk/return profile, but also providing a greater degree of inflation protection.

Expected, Unexpected and Actual Inflation

Brueggeman, et al. [1], Hartzell, et al. [7] and Rubens, et al. [15] do not agree however, on the degree or extent of inflation protection provided by real estate. Brueggeman et al. [1] found real estate provided an inflation hedge against expected inflation but not unexpected inflation using a two-factor CAPM on two commingled funds, during the period 1972 to 1983. Hartzell et al. [7] found that a well-diversified portfolio of real estate (diversified by property type, size, and location) was a complete inflation hedge against both expected and unexpected inflation during the high inflation period 1973 to 1983. Rubens, et al. [15] found that business real estate provided a hedge against expected inflation but not actual inflation and residential real estate provided a complete hedge against actual, but not expected inflation during the time period 1960 to 1986. The disagreement appears to be in measuring real estate's effectiveness as a hedge against
unexpected inflation and the fact that different time periods were used, which may have caused a major effect on results.

Expected inflation (\(EI\)) represents what investors think inflation will be over a future period. Unexpected inflation (\(UI\)) is the difference between what turns out to be actual inflation and what was expected (equation 1). Unexpected inflation is measured as current period actual inflation minus last period’s expected inflation (the estimate of current period inflation). (For a more detailed discussion see Hartzell, et al. [7].)

\[
UI_t = CPI_t - EI_{t-1}
\]  

(1)

Unexpected inflation corresponds to the error in predicting the actual inflation rate for the future year. Expected inflation is priced in the financial markets, i.e., there exists a market consensus of expected inflation that the capital markets add as an inflation premium. Unexpected inflation is the result of the impact of economic variables upon the price level which were not considered in the market’s view of expected inflation. Unexpected inflation, since it is not reflected in current pricing, increases risk and is more important to the investor than expected inflation which is reflected in current pricing. Given a choice, an investor should be most interested in effectively hedging unexpected inflation.

While the actual inflation rate for any period is readily available (i.e., the CPI) the expected inflation rate is not as easily defined. For example, Hartzell, et al. [7] use the Fama-Schwert estimate of the three-month U.S. Treasury bill rate less an assumed real rate of return, as a proxy for the expected rate of inflation. They also tested an alternative approach that allowed the real rate of interest to wander using the integrated moving average process. These estimates of expected inflation are based on financial market information and rely on the assumption that asset market prices accurately reflect expected inflation. Rubens, et al. [15] used the Federal Reserve Bank of Philadelphia’s Livingston Survey (a semiannual survey of business economists’ forecast of the actual inflation rate in the succeeding sixth- to twelve-month period).

Both the regression-generated data approach and the survey-based Livingston data have been used as proxies for expected inflation and both have inherent problems. The merits of each approach to estimating expected inflation have been analyzed by Menil and Bhalla [11], Carlson and Parkin [2], and Millineaux [13]. There is currently little consensus on the best method to estimate inflationary expectations. This study uses the Livingston Survey since the data represents actual forecasts of expected inflation that were developed by economists for use in business decisions. This approach allows the use of as much ex ante data as possible.

Property Types and Inflation

Hartzell, et al. [7] indicated that a diversified commercial real estate portfolio, during the time period 1973 to 1983, provided complete protection from expected inflation (as measured by the Treasury bill rate less an assumed real rate of interest), and to a weaker extent, unexpected inflation. Rubens, et al. [15] found that commercial real estate during the period 1960 to 1986 provided a complete hedge against expected inflation (as measured by the Livingston Survey) and an indeterminant hedge (no significant relationship) against unexpected inflation.
However, the response of real estate as an inflation hedge, while positive as an overall asset class, may vary to a large extent by the type of real estate owned. This variation might occur if the market value of a property and its cash flow respond differently across property types to inflationary effects. For example, retail leases may contain rent provisions for a percentage of gross sales, thus retail property revenues would tend to vary directly with the consumer price level. Office leases may provide a "pass-through" of operating expenses so that net revenues are unaffected by rising expenses.

Hartzell, et al. [7] examined differences in property type and found that returns by property type showed strong inflation protection during the high inflation period of 1978 to 1983, but were less significant over the 1973 to 1978 period. Industrial and office properties showed protection against expected inflation over the 1973 to 1983 period and complete protection from both expected and unexpected inflation during the high inflation period of 1978 to 1983. Also, industrial properties held a minor inflation hedging edge over office properties. (Because Hartzell, et al. [7] analyzed data over the 1973 to 1983 period, their results did not reflect inflation conditions experienced after 1983.) Retail properties were found to protect against unexpected inflation in both time periods, yet did not show strong overall inflation protection features in the study.

Development of the Model and Data Sources

Returns in real estate are a function of supply and demand of space in the local market place, price levels, and property-specific characteristics. The model:

\[ R_t = f(Mkt(s - d), Infl_t, Bd_t) \]  

(1)

explains real estate returns as a function of: (1) the market balance between supply and demand (using vacancy rate as a proxy for this balance), (2) the overall price levels in the market place (using inflation estimates), and (3) characteristics specific to a building.

Unlike previous work, this study examines real estate performance during both high and low inflationary periods. The time period chosen is 1977 and 1989 which represents high inflation period 77–82 (annual inflation rates above 5%) and a low inflation period 83–89 (annual inflation rates below 5%). (See Exhibit 1.) First, portfolio returns are used to test the effect of actual, expected, and unexpected inflation upon real estate performance. Second, commercial real estate returns are broken into two property-specific sub-categories (office and industrial) to determine if any property-type inflation hedging differences exist. The equations used were:

For actual inflation:

\[ R_{t,t} = a_0 + b_1 CPI_t + e_t \]  

(2)

For expected inflation:

\[ R_{t,t} = a_0 + b_1 EI_{t-1} + e_t \]  

(3)

For unexpected inflation:

\[ R_{t,t} = a_0 + b_1 [CPI_t - EI_{t-1}] + e_t \]  

(4)
Exhibit 1
Office and Industrial Vacancy Rates through High and Low Inflation Periods
(First Quarter 1978 through Fourth Quarter 1989)
Third, the relative impact of vacancy rates upon office and industrial performance in relation to inflation is examined. To test the effect of actual, expected, and unexpected inflation, plus vacancy rates, upon real estate performance, the following equations were used:

For actual inflation:

\[ R_{it} = a_0 + b_1 CPI_t + b_2 Vac_{t-1} + e_t. \]  

(5)

For expected inflation:

\[ R_{it} = a_0 + b_1 EI_{t-1} + b_2 Vac_{t-1} + e_t. \]  

(6)

For unexpected inflation:

\[ R_{it} = a_0 + b_1 [CPI_t - EI_{t-1}] + b_2 Vac_{t-1} + e_t. \]  

(7)

where:

- \( R_{it} \) = the total nominal return from time \( t - 1 \) to \( t \);
- \( CPI_t \) = actual inflation rate as measured by the Consumer Price Index at time \( t \);
- \( EI_{t-1} \) = expected inflation rate as estimated by the Livingston Survey from \( t - 1 \) to \( t \);
- \( Vac_{t-1} \) = vacancy rate on assets for period \( t - 1 \) to \( t \).

The time period examined spans 1977–1989 with quarterly data over a ten-and-one-half-year-period. The choice of this time period is dictated by data limitations, as sufficient property type data was not available before 1977.

**Return Data**

Real estate performance data included properties managed by a large financial institution investing on behalf of third-party investors. At year end 1989, the portfolio consisted of 251 properties with a value of approximately $5.7 billion. By net market value, the sample contained 41.0% office properties, 15.6% industrial properties, 17.2% retail properties, 12.8% hotel properties, and 13.4% multifamily residential properties. The returns were calculated using actual quarterly cash flow figures and quarterly appraisal values except when a property was sold, in which case the net proceeds of sale were used. Such things as capital expenditures and free rent were handled on a cash basis and expensed in the quarter incurred.

While the debate over the validity of using appraised values of calculating return series continues, in a market of heterogeneous assets and inactive trading, outside value opinions appear to be the best alternative in the absence of continuous market transactions. A recent study by Miles, Webb and Guilkey [12] compared the appraised values of 462 commercial properties in the Russell-NCREIF Property Index that were sold over its twenty-year history and found an average 1.6% difference between appraised value and sale value, lending support to the assumption that appraised values are the best proxy for transaction prices. The data used in this study represents a "transaction flavored" time series. Unlike the Russell-NCREIF Property Index which contains no
transactions data, this database includes appraisal values and actual sales prices whenever available.

**Inflation Data**

The Consumer Price Index (CPI-U) published by the U.S. Department of Labor, Bureau of Labor Statistics is used as the measure of actual inflation. Expected inflation is measured by the Livingston "price expectations" series provided by the Philadelphia Federal Reserve. Unexpected inflation (as shown in equation 1) is the difference between actual and expected inflation. The "High Inflation" period was defined as 1977/Q3 to 1982/Q4 and the "Low Inflation" period was defined as 1983/Q1 to 1989/Q4. (See Exhibit 1.)

**Vacancy Data**

Coldwell Banker's survey of office and industrial vacancy were used for market vacancy rates. This survey data samples individual markets, and is then aggregated into a national average. On a year-to-year basis the sample includes different properties and even different cities causing the potential for error to increase. Few companies in the U.S. have the personnel or infrastructure in place to collect national data. Coldwell Banker's data is generally accepted as a reasonable estimate in the real estate industry.

While there is no apparent explanation for a causal relationship to exist between vacancy rates and inflation, vacancy rates showed a strong negative correlation within inflation over the entire time period studied. Further examination found that during the low inflation period both office and industrial vacancies had low correlations with inflation (one was positive and one was negative) and during the high inflation periods both office and industrial vacancy had strong negative correlations with inflation. The lack of a relationship that is consistent over different time periods supports the supposition that inflation and vacancy rates have no causal relationship.

**Empirical Results**

Rubens, et al. [15] defined inflation hedges\(^2\) as follows:

- A **complete hedge** against inflation is obtained when a positively signed beta coefficient of an asset is not statistically different from positive one.
- A **partial hedge** against inflation is obtained when a positive beta coefficient for an asset is significantly different from both positive one and zero.
- An **indeterminant hedge** against inflation is obtained when the beta coefficient is not statistically different from zero.

We add the following definition to those developed by Rubens, et al. [15].

- An **effective hedge** against inflation is obtained when a positively signed beta coefficient of an asset is statistically greater than positive one. (Although this definition requires more restrictive assumptions, one must watch for the rare periods when inflation is declining because this is the only time when full protection from inflation is in place thus reducing the purchasing power risk of the investor's portfolio.)\(^3\)
Total Portfolio Returns

Exhibit 5 presents the results of analyzing the relationship between the entire portfolio of real estate, i.e., all property types, over the total time period. The right-hand section represents the entire twelve-and-one-half-year holding period, 1977/Q3–1989/Q4. For this period overall real estate returns were an effective hedge against actual, expected, and unexpected inflation, and all betas were much greater than one and statistically significant.

However, this relationship was not consistent when the data was broken into both high and low inflation periods. During the high inflation period, total real estate returns were an effective hedge against actual and unexpected inflation. This means that real estate returns essentially increased at least as fast as actual inflation (in fact, faster than actual inflation because the coefficient \(b_i\) was greater than 1 and significant). During the high inflation period, real estate returns did not show statistical significance as a hedge of expected inflation (although the coefficient was greater than one). This break in logic might be explained by the fact that actual inflation generally exceeded expected inflation for over half the high inflation time period—especially between 1978 and 1980 (see Exhibit 2)—an anomaly to the normal relationship.

The perceptions that determine expected inflation are influenced by current actual inflation, plus a cautious view that inflation is more likely to increase when it is at low levels. Therefore, in a period of declining or low inflation, actual inflation could be less than expected inflation, causing unexpected inflation to be less than 0. (To illustrate, if

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Exhibit 2

**Actual versus Expected and Unexpected Inflation**

*First Quarter 1978 through Fourth Quarter 1989*
expected inflation was 4% and actual inflation turns out to be 3%, unexpected inflation is −1%). Examination of the data showed that during the low inflation period most of the quarterly unexpected inflation numbers were negative.

During the low inflation period, total returns were a complete hedge against inflation, as the coefficient was positive and not statistically different from one. Total returns were also an effective hedge against expected inflation. This suggests that even in low inflation periods real estate has been able to hedge actual and expected inflation. Total portfolio returns were not statistically significant against unexpected inflation during the low inflation period, due to the anomaly of some negative "unexpected inflation" figures.

**Property Type and Inflation**

When total returns were broken into property types (see Exhibit 6) office returns were an effective hedge against all three types of inflation, an effective hedge against total inflation and expected inflation in the high inflation period, but not a statistically significant hedge against unexpected inflation. During the low inflation period, office returns were an effective hedge against expected inflation (which typically runs higher than actual inflation during low inflation periods) but not statistically significant for actual or unexpected inflation. Industrial returns exhibited inflation hedging characteristics similar to office returns as an effective hedge against all inflation types for the total
period and an effective hedge against actual and unexpected inflation during the high inflation period (a more logical relationship than the office portfolio returns). During the low inflation period, industrial portfolio returns showed no statistically significant hedging capabilities and even had some negative betas. This break in the logic of the intuitive relationships established with total portfolio returns leads to a search of other factors in the model.

Vacancy Rates, Property Type and Inflation

Exhibit 3 clearly shows that real estate returns were greater than inflation. Yet the inflation hedging effectiveness was not always significant. This break in historical relationship leads to a search for possible explanations. Because building-specific characteristics generally do not change over time, a possible explanation, using the economic model developed, is a change in the supply-demand balance over time. Vacancy rates are therefore evaluated as they have been identified as a proxy for the supply-demand balance relationship. Vacancy rates are collected separately by property type, therefore to continue this study, the portfolio of real estate had to be broken down into property types. In doing so, it was found that sufficient information was available for only two property types, office and industrial.

The inflation rate was not the only factor that varied widely over the study period. As represented in Exhibit 1, vacancy variation was especially high for the office market but
### Exhibit 5
**Total Portfolio Returns**

<table>
<thead>
<tr>
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<td>CPI</td>
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<td>3.30a</td>
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<td>2.91a</td>
<td>0.83</td>
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*a statistically significant at the 99% level or better  
*b statistically significant at the 95% level or better  
*c statistically significant at the 89% level or better

### Exhibit 6
**Office Portfolio Returns**

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<td>CPI</td>
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<td>1.43</td>
<td>2.60b</td>
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<td>2.66b</td>
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<td>0.92</td>
<td>1.25</td>
<td>0.73</td>
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### Industrial Portfolio Returns

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<td>1.82c</td>
<td>1.29</td>
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*a statistically significant at the 99% level or better  
*b statistically significant at the 95% level or better  
*c statistically significant at the 90% level or better
lower for the industrial market. The office market experienced low vacancy rates during the high inflation period and high vacancy rates during the low inflation period. This points to a supply-demand imbalance in the office market, which is borne out by the massive overbuilding that occurred during the 1980s. Industrial properties experienced relatively stable vacancy rates during both high and low inflation periods. Equations 5 through 7 test the relative impact of inflation measures and vacancy rates for office and industrial property returns.

As indicated in Exhibit 4, office property returns generally followed inflation’s rise and fall during both high and low inflation periods, but quarterly fluctuations were much more volatile. When vacancy rates were added to the equation, office property returns did not have a significant relationship with any of the inflation measures, over the three periods analyzed, except during the low inflation period when it was an effective hedge against expected inflation (Exhibit 7). This may be because expected inflation was decreasing steadily during that time frame, and this finding is discounted by the fact that actual inflation is more important to investors than the market expectations about inflation. Instead, market vacancy rates were statistically significant in explaining office returns in all three time periods. Vacancy rate coefficients ($b_v$) were negative and significantly different from 0, indicating that high vacancy means lower returns. In the case of office properties, this implies that market balance had greater influence on returns than inflation during both high and low inflation periods.

In the case of industrial properties presented in Exhibit 8, industrial portfolio returns were an effective hedge against actual and unexpected inflation for the total and high inflation periods. However, the high betas found for expected inflation were not statistically significant during any of the three inflation periods. Exhibit 4 indicates that industrial returns followed the general trend of inflation, but were less volatile than office returns. Additionally vacancy’s relatively restricted range did not show a significant predictive relationship to returns in any circumstance. Therefore, inflation had a greater influence on industrial returns because the market was in balance, unlike office properties. For the low inflation period, neither the measure of inflation nor the vacancy rates were statistically significant in explaining industrial returns. Exhibit 8 shows that coefficients for actual and unexpected inflation were negative and not statistically significant, even though industrial returns were higher than inflation. A closer look at Exhibit 4 may explain this phenomenon as industrial returns rose in 1980, 1983 and 1988 when inflation actually decreased. This could have occurred due to gains realized from specific property sales within the portfolio.

The key difference between the office and industrial property types appears to be vacancy rates. This suggests that since industrial vacancy rates were relatively low and stable in both high and low inflation periods, industrial returns rose during high inflation periods, as owners were able to pass increased expenses through to tenants and/or charge higher rents. During the low inflation period, industrial returns were not affected or explained by any inflation measures or by vacancy (i.e., returns did not decline as inflation fell). This leads to the conclusion that industrial portfolios provided inflation protection during periods of high and low inflation, because the industrial market supply-demand relationship was in balance. Offices performed well in the time span of 1971 to 1980, but performance was erratic from 1980 to 1982 causing offices to loose their effect as an inflation hedge. This was due to the structural imbalance occurring in the market, where supply heavily outweighed demand (as evidenced by high
## Exhibit 7
### Office Portfolio Returns

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<td>Vacancy</td>
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<td>-3.86a</td>
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*a* statistically significant at the 99% level or better  
*b* statistically significant at the 95% level or better  
*c* statistically significant at the 89% level or better

## Exhibit 8
### Industrial Portfolio Returns

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<td>Vacancy</td>
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<td>0.46</td>
<td>2.08</td>
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*a* statistically significant at the 99% level or better  
*b* statistically significant at the 95% level or better  
*c* statistically significant at the 89% level or better
vacancy rates). This implies that office investments could be an effective hedge against inflation in a balanced market, i.e., one where vacancy rates could be maintained at relatively low and stable levels.

**Summary and Conclusions**

The conclusion of this analysis is quite obvious to real estate professionals, yet to others it may seem unique. Simply stated, while real estate clearly provides an effective inflation hedge, it does so primarily when the real estate market supply-demand equation is in balance. In fact, a strong argument can be made that a structural market problem; such as overbuilding in offices, becomes more important than inflation in determining real estate returns and thus the inflation hedging effectiveness of real estate is diminished during periods of market imbalance.

These results suggest that while real estate has proven to be an effective inflation hedge in a mixed-asset context, the portfolio must consist of properties in balanced markets (well-leased at market rental rates). When market imbalance occurs (evidenced by vacancy rates rising dramatically), returns suffer regardless of inflation. Therefore, a round of high inflation will not cure an overbuilt market, and a burst of inflation would not help a market that is plagued by high vacancy rates. In fact it may actually lower returns because of rising expenses.

These conclusions are supported by the differences in the empirical results found when analyzing office and industrial properties. While the mixed property-type portfolio analysis (Exhibit 5) supports the notion that a portfolio of all real estate types is an effective hedge against inflation, this result is only part of the story. When office and industrial properties are separated from the mixed-asset portfolio, and property-type vacancy rates are added to the analysis, the reason for the inflation hedging effectiveness of real estate emerges as structural market balance and stable occupancy, not merely measures of inflation.

History showed that well-leased office properties, during high inflation, allowed owners to pass on increased costs (either via expense pass-throughs or high rents) and thus nominal returns rose. However, when the market balance was affected by overbuilding, vacancy rates increased dramatically causing returns to decline, thus reducing the inflation hedging effectiveness of the investment.

In the case of industrial properties, the market stayed in relative balance, thus vacancy rates were relatively lower and more stable than office vacancy rates (see Exhibit 1) in both high and low inflation periods. Since vacancy rates did not vary dramatically, total industrial property returns hedged inflation during the high inflation period as owners passed increased costs on to tenants via higher rents. Additionally, profitable rents were possible during the low inflation period because industrial vacancy rates remained relatively low.

**Implications for Pension Funds and Investment Managers**

For pension fund investors, this means that the ability of individual real estate portfolios to effectively hedge inflation is more dependent upon market balance and the individual portfolio's vacancy rate than on the presence of actual, expected, or unanticipated inflation. During high inflation periods, portfolios of well-leased properties will
perform as effective inflation hedges if markets are in balance. During periods of low inflation, well-leased portfolios also will provide investors with attractive and positive real rates of return, again with markets in balance.

Real estate is truly a unique asset, providing effective portfolio inflation hedging characteristics during high inflation and attractive real returns during low inflation periods. However, if individual markets are not in balance or high vacancies occur in an individual portfolio, the ability of that particular portfolio to provide an inflation hedge is greatly diminished. Therefore individual market selection and effective asset management are very important.

Pension funds currently considering investing in commercial real estate should focus more attention on portfolio market selection and vacancy rate than expected inflation. If national downtown office vacancy rates are 16% and a portfolio's downtown office selections are in markets with better market balance (evidenced by individual market's vacancy rates of say 10% or less), the office portfolio will provide more effective inflation hedging than the market as a whole. As a result, assuming relatively low expected inflation going forward (1991–96), it would be incorrect to reduce or avoid investing in a low vacancy real estate portfolio. Investing in a well-located, well-leased real estate portfolio will provide a pension fund with an asset position that can perform well when higher inflation returns (i.e., provide an inflation hedge during periods of high unanticipated inflation) while providing attractive real returns.

This also suggests that for investment managers to succeed in a low inflation environment, they must have particular strengths in selecting balanced markets and leasing at market rates. That is, maintaining portfolio level vacancy rates below market-wide vacancy rates. Naturally, rent levels must be at or above market for this relationship to hold. This simply means that an investment manager's performance evaluation should include target market selection, portfolio vacancy rate by property type compared to the market property-type average, and portfolio property-type effective rent levels compared to the market property-type average.

This would be especially true for property types such as offices which are currently severely overbuilt. For such property types, market selection and aggressive asset management initiatives are the key to success. Effective targeting, repositioning, and re-leasing become critically important strategies for maintaining low portfolio vacancy levels and directly impact the capability of the portfolio to provide investors with an effective inflation hedge.

Notes

1Correlation coefficients for inflation vs. office vacancy were: −0.786 during total period; −0.759 during high inflation; −0.033 during low inflation. Correlation coefficients for inflation vs. industrial vacancy were: −0.7114 during total period; −0.508 during high inflation; +0.141 during low inflation.

2Rubens, et al. [15] defined inflation hedges as both positive and negative; however having investment returns go down when inflation goes up does not fit the definition of a hedge.

3The authors acknowledge the questions and dissent of one of the referees on the addition of this new term. However we feel this term expands and enhances the literature, thus providing additional avenues for research and debate.
References


