The Building Blocks of Real Estate Return

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Research

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One way to frame the likely range of future real estate returns is to assemble estimates for individual components for which we can reasonably project future levels and trends, based on their historical movements.[1] Some analysts call this the "building block" approach. The model we assemble sums three components – an estimate for cash yield, a cash flow growth projection, and an appreciation or depreciation from changes in the capitalization rate. This approach is a mathematical approximation of returns to be earned on an investment. It has its roots in similarly assembled stock price models.

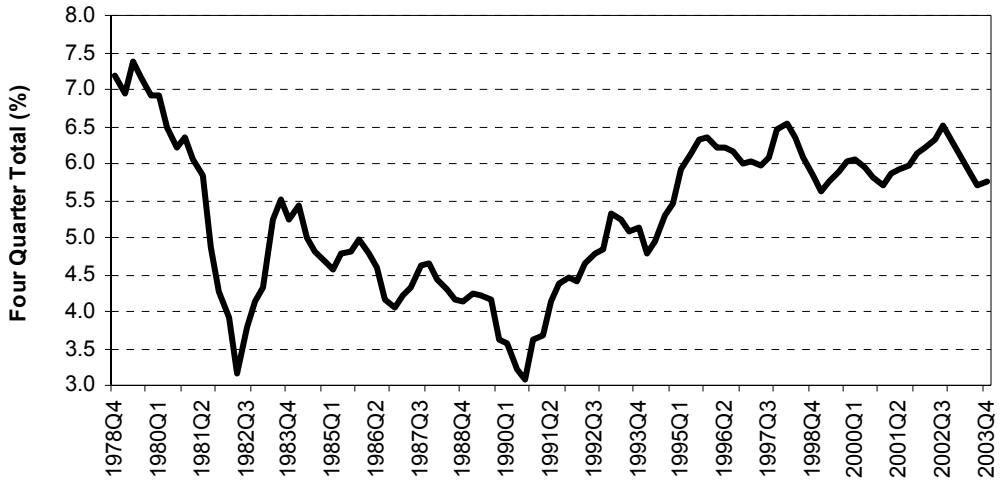
Cash Flow Yield

Exhibit 1 displays yield trends computed from the property performance database created by the National Council of Real Estate Investment Fiduciaries (NCREIF). In this case, the yield consists of estimated cash flow – net operating income less capital expenditures – divided by total market value.

The cash flow yield has been fairly stable over the last 10 years compared with pre-1995 cash flow yields. As the exhibit shows, yields have compressed drastically only twice in the past 25 years for which we have data. They coincided with two of the three national recessions – the "double dip" recession of the early 1980s and the recession in 1991. Note that the most recent recession, in mid-2001, had no discernable impact on NCREIF yields. Importantly, the two recessions that did depress real estate yields differed from the most recent one in that investment capital flow declined drastically, with the early recession preceded by extremely high interest rates and inflation, and the latter by the savings and loan crisis.

[1] This report was originally published in the April 2004 issue of *The Institutional Real Estate Letter.*

Exhibit 1: NCREIF Cash Flow Yield (%)



Sources: NCREIF; Prudential Real Estate Investors

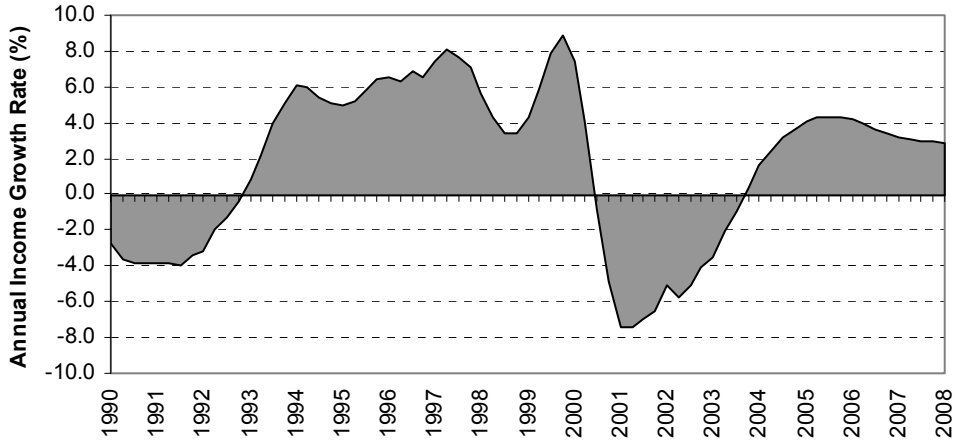
In recent years, with relatively ordered investment capital markets, the yield has fluctuated fairly narrowly around the 6% level and likely will continue to do so for the next few years.

Income Growth

Not captured by the yields are underlying growth trends affecting property values and rents. Although industry cycles affect property values and rents, inflation, the general movement of prices for goods and services in the entire economy, is the principal long-term driver of values and rents.

Exhibit 2 plots the ebb and flow of property incomes over the last two business cycles plus the next four years, estimated from rent and vacancy rate forecasts from Property and Portfolio Research (PPR). Through the 10-year real estate income cycle that began in 1994 and extended to year-end 2003, real estate income growth averaged about 2.5% per year, or about 70 basis points higher than the average annual inflation growth rate over the same period. However, as the exhibit indicates, property incomes since mid-2001 have declined with the rapid rise of vacancy rates. As the PPR forecast depicts, the markets eventually will recover, leading to an interval of above-average income growth.

Exhibit 2: Projected Property Net Income Growth



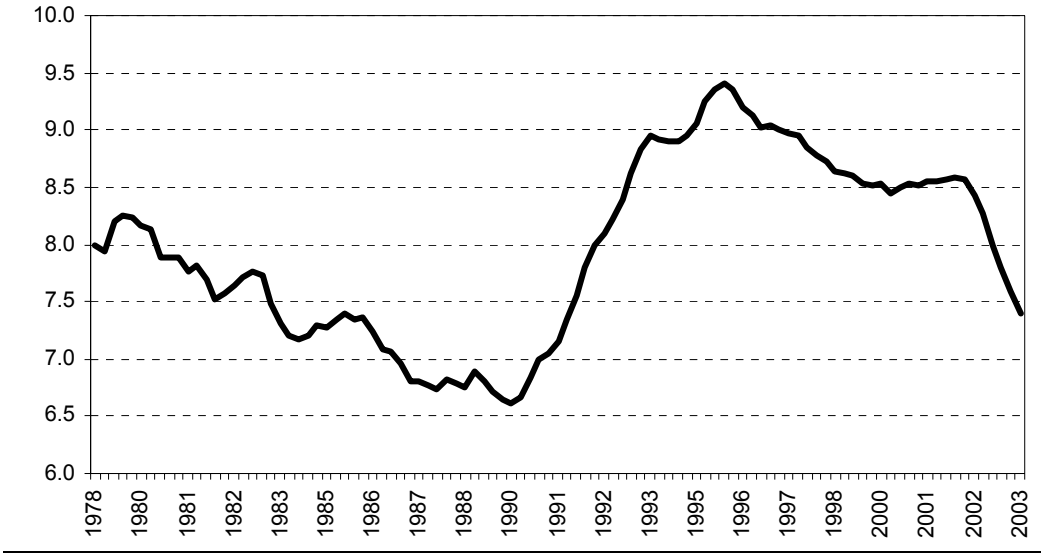
Sources: Property and Portfolio Research; Prudential Real Estate Investors
Note: Growth is a market-weighted average of office, apartment, retail, industrial and hotel income growth rates.

The projected longer-term income growth of 3.5% annually combines two effects: our inflation rate assumption of 2.5% and an expected excess growth of 1.5% due to the current low starting point in the rent and occupancy cycle.

Cap Rate Effect

The third component of total return captures the effect of investment price changes over the investment interval. In the case of real estate investing, one of the principal market measures of prices and price changes is the capitalization rate, or cap rate. **Exhibit 3** depicts the NCREIF Current Value Index (CVI) cap rate, showing quarterly movements of the cap rate based on estimated property valuation at each quarter. The Current Value Index is designed to provide an unbiased estimate of real estate property value changes from quarter to quarter. It does not contain certain valuation lag effects that exist with the more broadly published NCREIF Property Index.

Exhibit 3: Cap Rate from NCREIF Current Value Index (Four-Quarter Moving Average, %)



Source: NCREIF

The CVI cap rate is computed by dividing property income by property market value. Holding income constant, lower cap rates mean higher prices, while higher cap rates mean lower prices. When cap rates are falling, prices are rising. Note that **Exhibit 3** shows three intervals of rising prices (declining cap rates) and one episode of declining prices (rising cap rates).

The first episode of rising real estate prices, during the mid-1980s, involved a gradually declining cap rate. Between 1980 and 1989, the cap rate fell to about 6.6% from about 8.0%, which corresponds to a price increase of about 21% for a property with a flat income profile. The first part of this interval occurred when revamped tax laws allowed commercial properties to become attractive income tax shelters. This shelter was removed with the Tax Act of 1986.

An extended episode of falling prices followed the tax-driven real estate boom in the 1980s. From 1989 to 1993, weak property market fundamentals and capital flight from the real estate industry caused cap rates to climb from 6.6% to a peak of about 9.4%. Holding income constant, this cap rate shift corresponded to a total price decline of 30%. Since then, two episodes of significant price increases occurred: the three-year interval from 1996 to 1998, when REITs were voraciously acquiring properties, and the current period, which began around mid-2002.

The recent drop in cap rates is the steepest decline in the 20-year history of this statistic. The CVI cap rate fell from an average of about 8.5% for the four quarters of 2002 to 7.4% by the final quarter of 2003. The 1.1 percentage point drop stemmed from a number of factors – low interest rates being the most important – that helped to support property values in the face of poor property market conditions. More important, however, is the consensus belief that current cap rates are unsustainably low and will eventually return to more normal levels.

The expected rise in cap rates means that investors must include an adverse market value change in the total return projection. The principal uncertainties in projecting future real estate returns, in fact, involve determining the timing and severity of this price adjustment. For purposes of this

discussion, we suggest a reasonable cap rate adjustment of 1.1 percentage points from the current level of about 7.4% to about 8.5%, the average level of the CVI cap rate during the 1999-2002 interval.

Property Holding Period

An increase in the cap rate from 7.4% to 8.5% corresponds to a value decline of 12.9%. However, as we noted, we cannot know exactly when this adjustment will occur, nor do we know how long it will take. From the perspective of property investments, we can reasonably assume that the full adjustment will take place over the course of a typical holding period.

Statistics on property sales by NCREIF portfolio managers provide guidance on the holding period used by institutional real estate investors. Over the past 10 years, property sales turnover has averaged 12.1% annually in terms of number of properties and 9.5% in terms of the value of properties.

As the holding period assumption rises and the price reduction becomes spread over more years, the annual impact of value declines diminishes. A sales rate of 9.5% annually corresponds to an average holding period of 10.5 years, while a sales rate of 12.1% corresponds to an average holding period of 8.3 years. **Exhibit 4** summarizes the annual return effect implied by holding periods ranging up to 10 years. As the table indicates, an eight-year holding period implies that the price decline will produce a –1.7% annual impact on total return, while a 10-year holding period will produce a –1.4% annual return impact.

For purposes of this discussion, we will use a mid-range estimate that the projected price decline will result in a –1.5% adverse impact annually on private real estate investments.

Exhibit 4: Annual Return Impact for a Cap Rate Increase From 7.4% to 8.5%

Holding Period (Years)	Total Value Change	Annual Value Change
1	-12.9%	–12.9%
3	-12.9%	–4.5%
5	-12.9%	–2.7%
8	-12.9%	–1.7%
10	-12.9%	–1.4%

Source: Prudential Real Estate Investors

Putting the Pieces Together

We project an 8% annual return for unleveraged real estate for the next eight to 10 years, consisting of 6% yield, 3.5% annual income growth, and –1.5% annualized price decline due to rising cap rates.

The projection for stocks is inherently less reliable due to large fluctuations in price-earnings ratios. A trend projection assumes that stocks are currently priced near their long-term equilibrium levels. Stocks will earn a 2% yield, enjoy a 5.5% earnings growth, corresponding to nominal economic growth from 1% labor force growth, 2% productivity growth and 2.5% inflation, plus a bit more associated with growing corporate profits relative to the rest of the economy. In total, the return will likely average about 7.5% to 8.0%. Bonds will likely earn a

5.5% yield, a premium of 150 basis points above current 10-year Treasurys, due to the addition of corporates and other credit instruments.

Stocks and bonds are the most important asset classes competing with real estate. The projected returns suggest that real estate will produce competitive returns for the coming decade. In light of the high price-earnings ratio in the stock market and the historically low interest rates, risk-adjusted returns from real estate are even more attractive.

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