

Commercial Real Estate: The Price Is Finally Right

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Over the last 15 years, the commercial real estate sector has undergone a massive capital structure transformation – “equitization” – moving from private debt to both public and private market equity as a primary source of growth capital. Initially, the pricing of this out of favor and largely misunderstood asset class required enormous discounts relative to risk. In fact, not until REITs were added to the S&P 500 in 2001 did global equity seriously begin to understand how to price real estate. The end result has been a greater connectivity to the broader capital markets, as well as increased pricing efficiency. The good news is that, as an asset class, commercial real estate is finally correctly priced. The bad news (for some) is that making money in the sector will increasingly depend on adding value – as opposed to exploiting favorable depreciation schedules, tax loopholes or positive leverage.

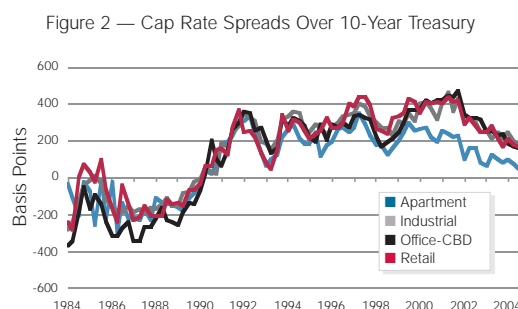
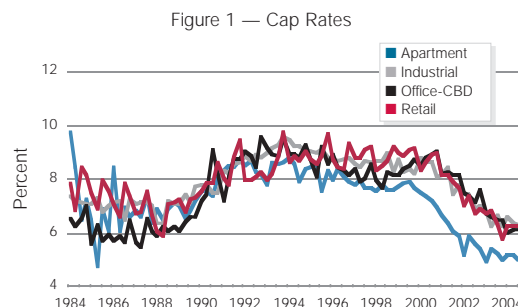
The Bad News (For Some)
Is That Making Money In
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History

Cap Rates. Throughout the era of real estate equitization, the ownership of real estate has been substantially under-priced. In fact, from 1990 through 2002, the cash flow cap rate for real estate (the income return ignoring any expected appreciation) exceeded the total expected return for stocks. This is clearly contrary to intuition, given that the equity claim is notably riskier than the lease claim. Real estate cash flow cap rates for high quality public and private real estate fluctuated between 8-10% from 1993 through the end of 2001. However, cap rates have massively declined since then, and for the first time in over 15 years, real estate is not massively under-priced.

Spreads. Cap rate spreads over 10-year Treasury yields are narrowing. Figure 2 displays the estimated cash flow cap rate spreads relative to the 10-year Treasury yield for differing types of real estate. Due to the appraisal lag in NCREIF data, these cash flow cap rates are lagged 18 months to provide a more accurate presentation of the timing of cap rates.

Note that cash flow cap rate spreads were significantly negative in the early 1980s, when owning real estate was about purchasing not only cash flow, but also access to mispriced debt and substantial tax write-offs. As the tax breaks were eliminated at the end of 1986, real estate cash flow cap rate spreads rose. However, continued access to mispriced debt meant that real estate investors were still willing to pay well in excess of the risk-adjusted price associated with the cash streams alone.



returns

As the 1990s dawned, cash flow cap rate spreads exploded, as not only were the cash streams more questionable in the recessionary economic environment, but the ownership of real estate was synonymous with the lack of access to fairly priced debt. Through the early and mid-1990s, real estate remained substantially under-priced as debt attempted to exit the market. During this period, anyone with equity, and courage in their convictions, realized a once in a lifetime purchasing opportunity. As the equitization of real estate evolved into the mid-1990s, cash flow cap rates spreads narrowed, though remained positive. However, by the end of the 1990s, real estate cash flow cap rate spreads moved upwards, as cash streams fell out of favor during the Tech Bubble.

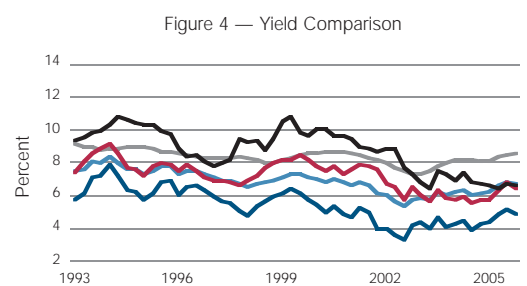
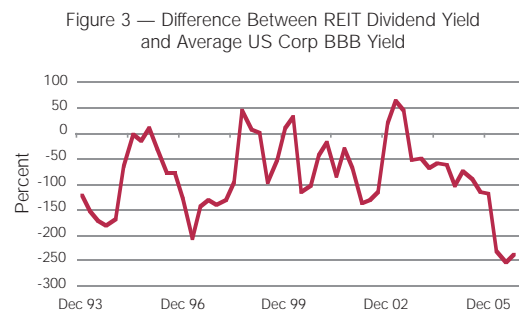
Only when the bubble burst five years ago, did cash flow cap rate spreads begin to fall. Yet as recently as a year ago (the most recently available data given the appraisal lag), cash flow cap rates spreads were generally positive. This stands in stark contrast to theoretically justified negative spreads.

Over the past two years, real estate cash flow cap rates have continued to drift downward, to approximately 4.7%. At the same time, stock return expectations have risen modestly with inflation, while Treasury yields have risen by 80 basis points, and BBB bond yields rose by more than 60 basis points. And only recently have cash flow cap rate spreads turned modestly negative. We believe that this modest negative cash flow cap rate spread will fall by another 25-50 basis points over the coming year.

Returns. Over the last five years through August 2006, real estate has generated a total return of approximately 145%. The strongest returns have been generated by malls (273%) and shopping centers (206%), while hotels (74%) and office properties (128%) have been the laggards. Over the same period, the S&P 500 has generated a total return of 22%, while the Russell 2000 Value index has risen by 88%. The strong performance of the Russell Value index indicates that about half of the return performance of real estate over the past five years has been shared by the strong cash stream companies that were massively undervalued during the bubble. Real estate returns beyond the Russell 2000 Value index reflect the mispricing of the sector that existed prior to the bubble.

Figure 4 displays a comparison of expected total returns across assets. It includes estimates of average REIT total expected returns, calculated as the expected dividend yield plus expected appreciation, as well as the average REIT total implied returns, calculated as the actual dividend yield plus implied appreciation. Implied appreciation is measured by the three-quarter moving average inflation rate of Core CPI. Also displayed are the BBB bond yield, the ten-year Treasury yield, and the expected stock market return (measured by 6% plus the three-quarter moving average inflation rate).

In the early days of real estate equitization, expected returns were 35-40% higher than deserved. By the time of the Russian ruble crisis, the mispricing had narrowed to about 20%, but as the bubble set in, under-pricing soared to as much as 70%. In fact, between



pricing theory

September 1997 and December 2000, expected real estate returns rose by 217 basis points, even as real estate operating fundamentals were improving. At the same time, Treasury yields fell by 48 basis points. This created a staggering period of mispricing. REIT implied total returns were over 10% just before the Tech Bubble burst. This was at a time when the 10-year Treasury yield stood at roughly 4.9%, BBB bond yields were 7.5% and expected stock returns were 8.6%.

After the bubble burst, expected real estate returns steadily fell. But as expected real estate returns fell, BBB bond and 10-year Treasury yields also fell rapidly. As a result, between December 2000 and June 2003, real estate expected return rates fell by 232 basis points, while 10-year Treasury yields fell by 211 basis points, leaving real estate pricing still substantially out of alignment with the risk. Not until September 2003 did the expected real estate return equal the total expected return on stocks, and not until March 2006 did it approach the BBB bond yield. That is, until March 2006, real estate was under-priced in spite of four years of large and continuous declines in cap rates.

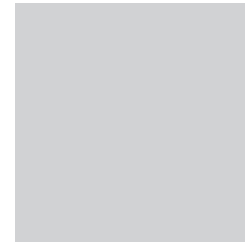
Pricing Theory

If the market has mispriced commercial real estate for the past 15 years, what is the appropriate pricing method going forward? For the best estimates, investors can either apply the capital asset pricing model (CAPM); or compare the risk profile (and corresponding relative returns) of real estate to other assets such as stocks and bonds.

CAPM. In technical terms, CAPM states that the total expected return for an asset is equal to the risk-free rate (10-year Treasury yield), plus beta times the market return net of the risk free rate. Specifically, the expected return for an asset is determined by the covariance of its return with the return of the market portfolio (beta), the expected return of the market portfolio, and the risk-free rate of return (10-year Treasury). In layman's terms, CAPM attempts to quantify an asset's total expected return, adjusting for the risk of that asset relative to the market and the risk-free rate.

Due to the longevity of real estate leases, and the differential supply and demand dynamics of real estate relative to other sectors of the economy, long-term real estate betas are 0.4-0.5. Since real estate reduces portfolio return volatility by not being perfectly correlated with market returns, the total expected real estate return should be less than for stocks, and above 10-year Treasury, to the extent that beta exceeds zero.

To appreciate the mechanics of CAPM, it is important to understand the relationship between cap rates and the 10-year Treasury. A common way to express cap rates is the spread between forward cash flow cap rates and the risk-free rate. Using the 10-year U.S. Treasury bond yield as a proxy for the risk-free rate, the spread reflects the additional risk associated with the property relative to Treasury, net of expected property income growth. Remember that a cap rate is only relevant for properties with stabilized NOI.



other assets



For stabilized properties, the theoretical cap rate approximately equals a property's discount rate minus its long-term stabilized cash flow growth rate. The discount rate for a property is theoretically composed of three factors: the long-term risk-free rate; the risk premium associated with unexpected outcomes in the property's future cash flow; and the risk premium associated with the property's illiquidity relative to a 10-year Treasury bond.

Figure 5 displays the extent of real estate under-pricing based upon CAPM, using a beta of 0.5 and an expected long-term dividend growth rate equal to the three-quarter moving average inflation rate. This structured methodology yields the same story of considerable under-pricing in the early-1990s, as equity began to flow into real estate. Under-pricing lessened until the bubble. But CAPM reveals that during the bubble, enormous under-pricing existed, disappearing only with the recent run-up in 10-year Treasury yields and the ongoing decline of cash flow cap rates.

Theoretically, capital market adjustments occur instantaneously, as there is always enough "smart money" to arbitrage any mispricing caused by capital outflows. But the experience of the real estate industry reveals that the answer to the question, "How long will it take real estate equity to efficiently price real estate cash streams," is "About 15 years." This capital market adjustment took so long because knowledge was a rare commodity and courage of investment convictions even more rarely met knowledge.

Comparison to Other Assets. Investors have three alternatives in terms of deploying their capital. First, they can invest in the equity claims on the corporations of the world. If we focus our analysis on the equity claims of U.S. corporations, the expected return for this claim is proxied by the expected returns for the broad U.S. stock market. Second, investors can invest in the debt claims of the same corporations, as well as various levels of government (state/local/federal). These debts claims are best proxied by the long-term BBB bond yield. Third, they can invest in the lease claims on the corporations and governments of the U.S. These lease claims are primarily held by the owners of real estate leased to government and corporate tenants. Including the residual value, these claims, can be proxied by the ownership of a broad pool of cash flowing real estate such as the REIT index.

From a risk perspective, the debt and lease claims are far less risky than the equity claim, as corporations will pay their lease and debt claims prior to paying equity claims. As a result, the ownership of the debt and lease claims should command a substantially lower expected return than the ownership of the equity claim. Research by Jeremy Siegel indicates that the expected return on the equity claim of U.S. corporations over the long-term is approximately 6% plus expected inflation. Thus, in a world of expected inflation of 2.5%, the total expected return for the ownership of the equity claim on U.S. corporations is today approximately 8.5%.

Since no anticipated appreciation exists in the pricing of most debt claims, their total expected return is proxied by the BBB bond yield. In contrast, the ownership of the lease claim has both a cash flow component, as well as an appreciation component reflective

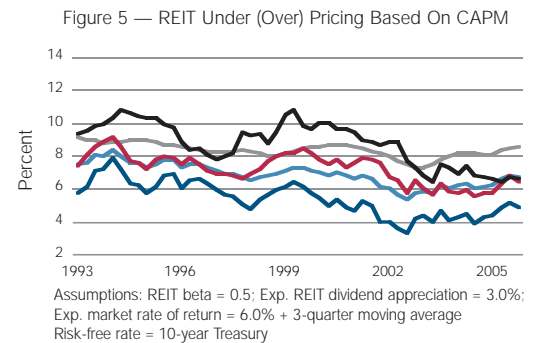


Figure 6 — REIT Under (Over) Pricing thru August 18, 2006

Beta	Long-Term Annual Dividend Growth			
	2.0%	2.5%	3.0%	3.5%
0.3	3.0%	17.8%	37.6%	65.5%
0.4	-5.7%	6.5%	22.5%	44.1%
0.5	-13.1%	-2.8%	10.4%	27.6%
0.6	-19.4%	-10.6%	0.4%	14.5%

multiples

of expected appreciation. Which is riskier, the debt claim or the real estate claim? Approximately 95% of the time, tenants will pay both their lease and debt claims in full. However, the remaining 5% of the time they will not fully honor these claims due to bankruptcy. Our analysis suggests that in bankruptcy the loss factor for real estate is slightly less than the loss suffered on the debt claim. To be conservative, we assume that bankruptcy losses are equal for the debt and the lease claim. This means that the total expected returns for the debt and the lease claims must be approximately equal.

A Word About Multiples. One factor most people in the real estate business forget is that most industries experience expanding corporate multiples during economic downturns, and narrowing multiples during recoveries. In a downturn, the short-term drop in cash flows creates only a small drop in the net present value stream of the company. To the extent that the weakening of the economy brings down the long-term rate, the relevant discount rate for the net present value also falls. Cyclical cuts in short-term interest rates buffer company cash flows to the extent that they use short-term financing and floating-rate debt.

On the other hand, multiple narrowing reflects the fact that as short-term interest rates rise, cash flows are squeezed by increased interest rate payments, which offset much of the increase in operating cash flows. Also, to the extent that the long-term rate moves upward as the economy recovers, so too does the discount rate. This pattern has prevailed in most industries over most cycles.

Today, real estate's newly found connectivity to the broader capital markets means that during the most recent cycle, real estate behaved like a typical industrial sector. That is, multiples expanded as cash flows from operations slowed, with declining operating cash flows offset, to a large degree, by lower interest payments, and lower long rates reducing the valuation discount rate. Thus, multiples expanded – that is, cap rates fell – dramatically during this down cycle for the first time in real estate's history. While this may have come as a surprise to old school real estate players, it is to be expected, given the sector's capital markets integration.

Specifically, multiples will narrow (cap rates will rise) as we move into full recovery. In addition, short-term cash flows will not rise as rapidly as operating cash flows due to short-term interest rate increases. In addition, the rise in short-term rates puts upward pressure on the long-term interest rate, increasing the relevant discount rate for net present value calculations.

All this is to say that real estate values will rise over the recovery, even as multiples contract. If this process occurs in an orderly fashion – and markets rarely behave in orderly ways – we should see a smooth increase. However, it is possible that the market will get ahead of itself and that real estate prices will temporarily fall. The analytic risk is that buyers use the same exit cap rate in their models as today's cyclically low rates. While in normal economic times using the entry cap rate as the exit cap may make sense, when you purchase a property in the down cycle, you must plan to exit when cap rates are somewhat higher. To use the entry cap rate as the exit cap rate for properties bought during a down cycle is a fool's game.



expected returns

Interest Rate Risk. Many wonder what will happen to real estate cap rates if long-term interest rates rise. Some observers are heartened by the lack of correlation over the past 15 years between REIT returns and interest rates. But this lack of correlation is primarily due to the history of prolonged mispricing of real estate. Now that real estate is generally correctly priced, it will be more highly correlated with interest rates. In the end, real estate returns must rise if rates on competitive assets rise substantially.

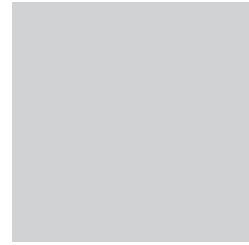
However, we see no risk of a collapse in real estate prices, even if long-term interest rates spike. This is because any spike in long-term interest rates is almost certainly associated with a spike in inflation. Hence, while cap rates rise, the inflationary increase in cash flows will offset the cap rate erosion. This stands in partial contrast to stocks and marked contrast to bonds. In other words, if rates rise because of higher real return requirements, cap rates will rise. But if interest rates rise substantially because of inflation, real estate cash flows will rise commensurately over the long-term. In this case, rising cap rates will not erode real estate values. In fact, the transferable long-term mortgages used by real estate investors serves as a partial hedge against cap rate movements, as the mortgage liability declines in value as rates rise. This hedging effect of mortgages is true whether the interest rate increase is caused by inflation or increased real return requirements. Also, bond returns and corporate equity returns will erode in the face of rising rates.

In short, when real estate is correctly priced, future return expectations must correlate to some degree with notable interest rate movements. However, a statistical comment is in order. To the extent that most interest rate movements are minor, they will not closely correlate with real estate pricing. And since small, random movements in interest rates dominate the data, the correlation will remain low for “normal” interest rate changes.

Outlook: Total Expected Returns

Now that real estate is “correctly priced” in relation to its more traditional stock and bond counterparts, what returns can investors expect going forward? There are two quick calculations that can give us a preview. First, the total expected return for real estate can be proxied by an initial cash flow return (represented by the cap rate, which is about 4.7% today), plus an appreciation return roughly equal to the expected rate of inflation. Over the past decade, this inflation (Core CPI) has generally been about 2.5%.

Current cash flow cap rates for office properties on a national basis are approximately 4.4% for CBD space and 5.1% for suburban buildings. These imply unlevered, expected total returns (including anticipated appreciation driven by cash flow growth) of approximately 6.9% and 7.6%, respectively. Similarly, on a national basis, the cash flow cap rate for shopping centers and industrial properties is approximately 5.8%, implying a total expected return of approximately 8.3%. Multifamily high rise properties have cash flow cap rates of approximately 4.4%, while garden apartments have national cash flow cap rates of approximately 5.1%. These imply total expected returns on the range of 6.9–7.6%.



investment

Alternatively for REITs, investors can use the REIT dividend yield (4.2% in Aug 2006) as the proxy for initial cash flow returns, to which one can add expected long-term growth or inflation. This method also indicates expected total returns for real estate of 6.7%.

Do these estimations pass the sniff test? Going back to our pricing theory discussion above, these estimates are consistent with CAPM. Using REITs as the proxy for well leased and located, modestly leveraged real estate is instructive. If beta for real estate is 0.5 (that is, if a 1% movement in the market return on average generates about a 0.5% movement in real estate returns), then a 10-year U.S. Treasury rate of 4.9%, and an expected market return of roughly 8.5% suggest that real estate should only provide a total return of roughly 6.7% – in line with current pricing. This expected return implies a cash flow cap rate of 4.2%, if the expected rate of inflation is 2.5%. That is, the cash flow cap rate equals the total expected return minus expected appreciation. Note that this yields a cash flow cap rate that is 70 basis points below the 10-year Treasury rate.

Real Estate Finance & Investments:

Risks and Opportunities by Dr. Peter Linneman, Wharton School of Business

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asset classes

A second test reveals that expected total returns of 6.7-7.6% for real estate are also in line when compared to expected returns of other asset classes. The expected return of stocks is about 8.5%. Given the greater risk of equity claims versus lease claims, a higher total expected return for stocks than for real estate does make sense.

In August 2006, the BBB bond yields were 6.8%, indicating that the total return for real estate must also be at about this level, comprised of 2.5% expected annual appreciation from inflation and 4.3% in current cash flow yield. Stated differently, the risk appropriate total expected return requires that the real estate cash flow return must be below the BBB yield by expected inflation. Over the last 2 years, since BBB bond yields have been about 140-175 basis points over the 10-year Treasury yield. Thus, for today's 2.5% rate of expected inflation, the cash flow cap rate for real estate should be below the 10-year Treasury yield by 75-110 basis points. That is, if real estate cash flow cap rates exceed the ten-year Treasury yield, real estate is under-priced!

These alternative approaches to analyzing the appropriate total expected return for real estate generate almost identical results. Namely, the total expected return on real estate should be roughly equal to the yield on BBB bonds, and that the typical real estate cash flow cap rate should be about 100 basis points below the ten-year Treasury yield. Higher expected returns mean that real estate is under-priced, while expected returns below this level indicate that real estate is overpriced.

Conclusion. These expected total returns, while low by historic standards, are nearing equilibrium versus alternative investments. With stock return expectations in the range of 8.5-9% and corporate bond yields at roughly 7%, these returns indicate that compared to other investment alternatives, real estate is roughly correctly priced. This is because real estate risk is roughly commensurate with corporate bond risk, and well below the risk of corporate equities. Similarly, this pricing is consistent with a real estate beta of approximately 0.5. And so, for the first time in over 20 years, we believe that real estate is roughly correctly priced and expect real estate prices to slowly rise (2-4% annually) over the near term as cash flows improve.

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