

An Autopsy of Unlevered Real Estate Returns

What were investors actually buying over the last few years—and what should they focus on when considering investing in the future?

THE COMMERCIAL REAL ESTATE industry is facing an unavoidable catastrophe born of impossible growth expectations and the reckless belief that even if you overpay for an asset, a greater fool will come along in the future and pay you more. Commercial real estate is overleveraged, refinancing debt is unavailable, and trophy assets like Boston's John Hancock Tower are being auctioned amid a frozen investment market.

The only thing more concerning than current capital market conditions is the breadth of professions that have been affected. Whether you are an engineer, a broker, an architect, or a developer, you are feeling the effects of the current economy and speculating on a pretty obvious, if not troubling, conclusion about the near-term future of the real estate industry.

Despite the myriad of complex finance issues that helped create this mess, one does not need an extensive background in finance to understand what went wrong and glean a few insights into the future. A close

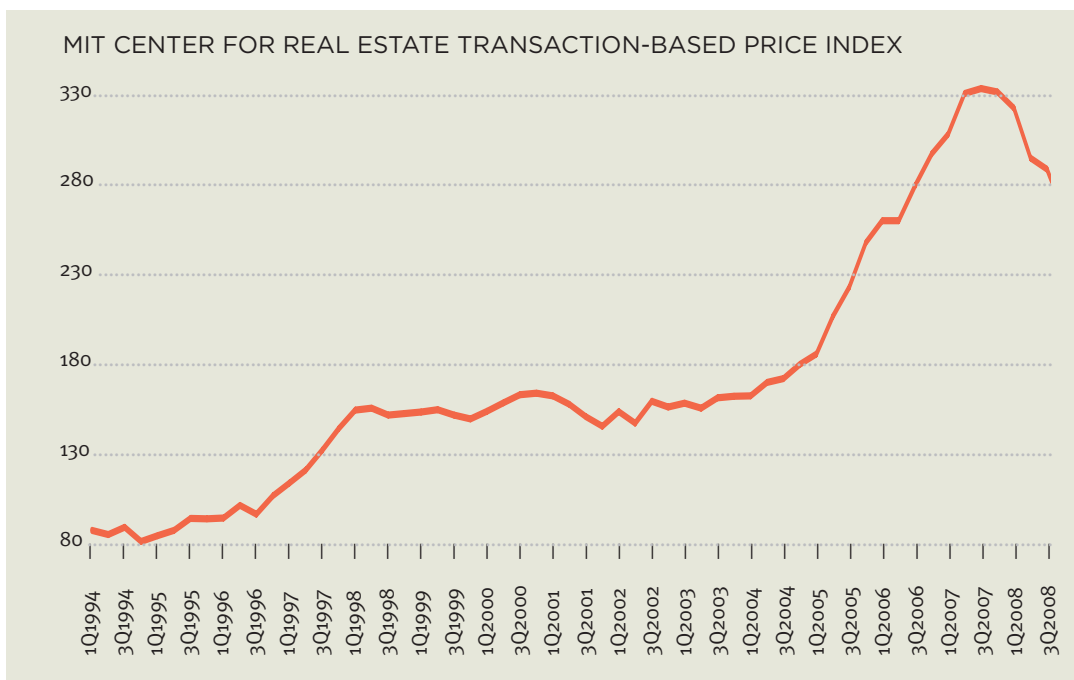
look at the real estate cash flows that form the unleveraged internal rate of return (IRR) offers some of the most fundamental insights into the current crisis and a critical view of how we value real estate and what investors have really been buying.

The value of a commercial investment property is dependent on a combination of the following: in-place cash flows, forecasted growth in cash flows, and terminal cash flows or the value of the building upon the time of sale. Forecasting ten years of operations requires numerous assumptions about rents, vacancies, and costs that ultimately determine what investors are willing to pay for a property. These cash inflows and outflows are combined to form a blended IRR that investors use to evaluate a commercial property. Yet, the heralded IRR is nothing more than a bundle of speculation that when dissected reveals that investors were putting disproportionate value on the most speculative and risky cash flow—the asset sale.

It is no mystery that underwriting became far too aggressive and many investors paid record-high prices for commercial property based on unrealistic growth assumptions, the belief that there was a greater fool in the market who would pay more for a building in the future, and because financing was cheap and easy to obtain at high leverage ratios. With rents dropping, vacancies increasing, and cap rates rising, investments made at the peak of the market are in trouble as seen in the fourth quarter of the Transaction-Based Index (see figure) developed at the MIT Center for Real Estate.

The John Hancock Tower is a timely example that will help illustrate the real estate returns investors were purchasing and what can happen when certain assumptions made during the acquisition process prove to be inaccurate. Designed by architect I.M. Pei, the iconic Boston tower—the tallest building in New England—went into default on its debt obligations early this year. Although the problems are surfacing now, the default is the result of mistakes made during the acquisition process in 2006.

Using a cash-flow model incorporating what is known about the Hancock Tower acquisition, combined with data from ULI's *Emerging Trends in Real Estate 2007* report to benchmark investors' expectations of return, we can glean some insights into underwriting and performance assumptions made during the peak of the market. A simple model is designed to show the relationship between the in-place and forecasted future cash flows and the cash flow from the sale of the asset (see photo illustration). Some of the inputs, like the Hancock's NOI, are known from sources like the *Boston Globe*, while other inputs, including return expectations, are taken from nationally available



survey data from the same time the building was purchased.

The *Boston Globe* reported in August 2008 that the Hancock Tower and affiliated parking garage were purchased in 2006 for \$1.3 billion. According to the *Globe*, approximately \$1.1 billion was financed with multiple layers of debt. Investor equity made up the remaining \$0.2 billion required to make the acquisition. That equates to a loan-to-value ratio of approximately 85 percent. According to the *Globe*, the net operating income at the time of acquisition was \$49.5 million, meaning that the tower was purchased at the extremely low cap rate of 3.8. While not common, other trophy assets were purchased at similarly low cap rates in 2006 with the belief that rent growth and sustained cap rate compression would provide high internal rates of return.

ULI's *Emerging Trends in Real Estate*, released in October 2007, quotes that in 2006, institutional-grade investors in office buildings in downtown locations were seeking unlevered IRRs of 8.5 percent. Assuming that the investors in the Hancock Tower were seeking similar returns, and assuming they expected to sell the building ten years into the future at the same 3.8 capitalization rate they purchased the building for, the Hancock Tower would need to achieve a 4.7 percent annual compounded growth in net operating income.

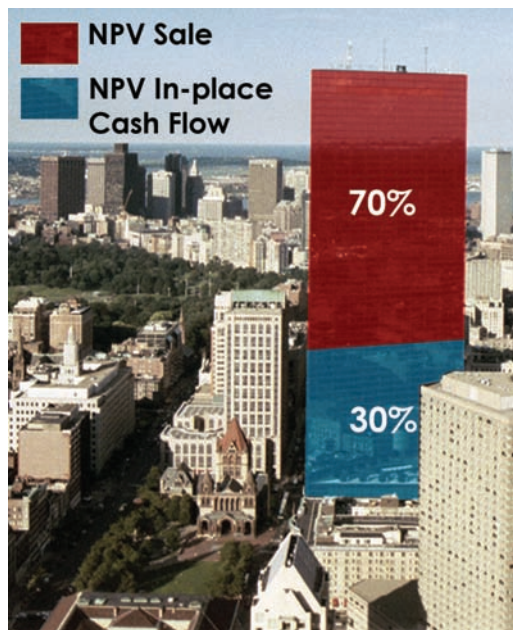
Next, the cash flow and the sale price are individually discounted, using the unlevered internal rate of return to arrive at a net present value (NPV) for each cash flow. The NPV of each cash flow totals the acquisition price for the Hancock Tower. If each individual net present value is divided by the total NPV (also the acquisition price), the projected 8.5 percent unlevered return is composed of 30 percent cash flows and 70 percent terminal sale. (See illustration.) This means that 70 percent of the 8.5 percent unlevered return promise

was based on a speculative sales value ten years into the future. This would have worked if cap rate compression and growth had behaved as forecasted for ten years, but this is obviously not what has happened.

Looking at the sale price of the asset ten years into the future, investors have become more cautious, capital is harder to obtain, and investors want a higher rate of return for the risk associated with owning such a building. In light of these new economic times, the terminal cap rate assumption is a more realistic 7.8 percent (as quoted from the Korpacz Real Estate Investor Survey for the fourth quarter of 2008). To maintain the promised unlevered IRR of 8.5 percent made to investors, the Hancock Tower would now have to generate an unparalleled 11 percent annual compounded growth in net operating income. This is highly unlikely in a recessionary environment in which companies are downsizing and vacating space. What if the Hancock Tower is not able to produce such impressive annual NOI growth, as is currently the case? If NOI growth becomes 0, the 8.5 percent IRR promised to investors decreases to -1.7 percent. Investors would have been far better off buying risk-free U.S. Treasuries.

Although the specific assumptions and strategies intended for the Hancock Tower are not known, the purpose of the model is to demonstrate that the unlevered IRR of a project can be divided between in-place and forecasted growth cash flows and the cash flow from selling the building. This forces examination of the appropriate division in the IRR between in-place cash flows, growth, and projected future sales prices. If investors are unwilling to underwrite very aggressive asset sales values as they have in the past, then in-place cash flows need to become a larger portion of unlevered internal rate of return, meaning that cap rates have to rise.

An understanding of the basic composition of real estate cash flows



Boston's John Hancock Tower—the highest building in New England—went into default on its debt obligations this past January. This stylized photo of the structure shows that 70 percent of total returns in the Hancock Tower lie in the residual.

leaves a few obvious questions and important conclusions.

The industry cannot keep underwriting thoughtless growth when valuing an asset. Clearly, cap rates need to reflect in-place rents and a reasonable relationship to comparable, risk-adjusted investment returns in other asset classes before the market starts moving again. Basically, cap rates need to increase so that in-place cash flows compose more of the promised IRR than they did in our stylized model.

Projected returns based on the discounted cash flow model rely very heavily on the asset sale or going out cap rate. The DCF is still a critical exercise, but developers and private equity shops should explain to investors that a substantial portion of their projected returns rely upon a very speculative sales value that is far off in the future. Furthermore, they should specifically explain how much of the blended IRR they are promising relies on the asset sale.

Looking forward, as the industry weathers the current downturn, and investment opportunities slowly emerge, investors need to commit more due diligence on understanding in-place NOI and have a thorough understanding of what drives

IRR projections. Similar to how a building engineer must understand the superstructure of a development before moving forward, as an investor, a principal, and/or a market participant, it is absolutely necessary to have clarity on the structure of the forecasted return and its potential sensitivities to future market conditions before fully committing capital.

The market correction is manifesting itself through distressed property sales, pushing prices back to realistic levels. The Hancock Tower sold at auction on March 31 for \$660 million, a 50 percent decrease from its record 2006 sale price of \$1.3 billion. The *Boston Globe* reported that the auction was completed in under 60 seconds. **UL**

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Emerging Trends in Real Estate 2009 and Real Estate and the Financial Crisis are available at www.uli.org/bookstore, or call 800-321-5011.