HIPERCEPT™

REAL ESTATE VALUATIONS
AN ENHANCED APPROACH

Damien Georges • November, 2011

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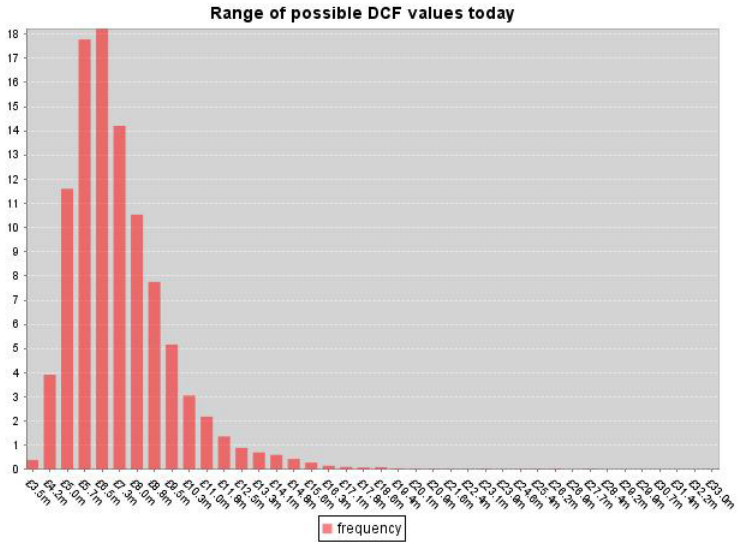
INTRODUCTION

In the commercial real estate industry, the ultimate goal is to maximize asset value. Understanding what an asset is worth and why so that you can determine where best to invest your time and money is key to optimal asset management. Conventional valuation methodologies take actual leasing information and add on a set of guesses about what will happen over a 10-year time frame in an attempt to pinpoint a single valuation number. At Hipercept, we have found that even the "actual" leasing information is often not accurate, making the guesses that follow even less reliable. Given that the existing approach for valuing a real estate asset may lead to material inaccuracies an enhanced approach should, at minimum, be considered.

STOCHASTIC REAL ESTATE VALUATION

Why is this a better approach than a single DCF value?



Graphic credit: Radley & Associates 2011

The above example result set was generated by a statistical valuation system. It represents the range of possible DCF values generated by running, not one, but 10,000 valuation models. In this example the median valuation is $7,172,000 with a distribution skew of 2.2 (normal distribution is 1) and the kurtosis is 3.9 (normal distribution of 3). What does that mean?

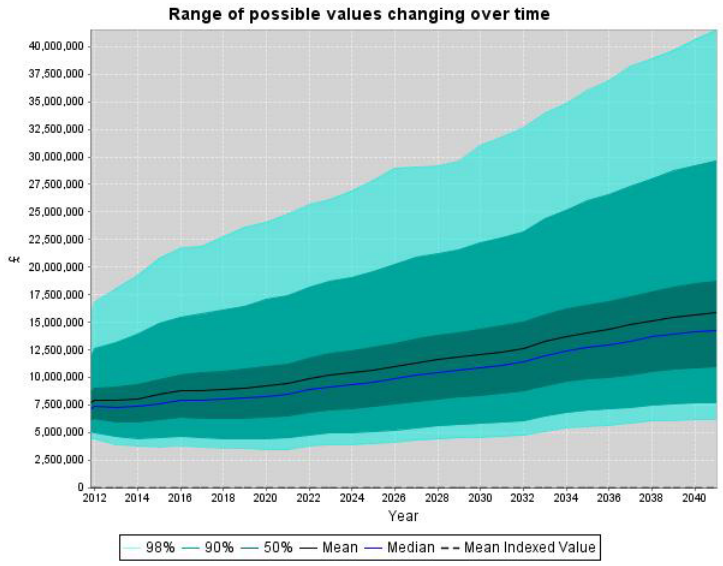
SKEW

Since the valuation is skewed upward (2.2. versus 1) this indicates that the probability of obtaining a value 100% higher is more than the probability of obtaining a value 100% less. Or, another way of looking at this is that there are more scenarios in which the real estate value will be higher, rather than lower than the median.

KURTOSIS

The weight of the tail is the measure of kurtosis in a distribution. Fat tails indicate a higher probability of achieving a valuation result at either end of the curve. As expected with layering on leverage the tails expand resulting in a higher probability of achieving an alternate result to the median.

The commercial real estate community has been very slow to adopt models that reflect the probability of achieving results that differ from the "expected" valuation. It is obviously interesting to understand the expected value but, given the example above, it's even more compelling to recognize the probability of achieving different results. In the end, given an infinite number of possible results, there is very little chance your asset will sell for your expected value. However, if you knew there was an 80% chance it would sell for 20% more – versus a 5% chance it would sell for 20% less – you would be confident that the expected valuation was conservative. Stochastic methods for valuing real estate enable true risk management in an asset class that historically has relied on a single set of valuation information.



Graphic credit: Radley & Associates 2011

In the above chart, we can see a range of possible property values over time. There is a chance the value could stay below $5,000,000 until 2040 but that chance is less than 1%. There is a much higher probability the value will exceed the median through time.

Given a set of macroeconomic indicators, coupled with market leasing assumptions, and the known cash flow of a property, a model can be developed that allows for a valuation that indicates both the most probable value and the associated likelihood of obtaining alternative values. At Hipercept, we believe the time has come for our industry to adopt such a model.

ADOPTION ISSUES

The core principles of the conventional deterministic DCF methodology are sound. The value of any asset is equal to the present value of its future cash flows, where the discount rate reflects the market's opinion of the risk/reward profile of the asset relative to other investment opportunities

available at the time. Rather than abandon the current approach, we are suggesting the addition of a cash flow forecasting method that applies a more statistical approach. With this we believe we can infer a more robust, and ultimately, more accurate result. In addition, the sensitization of variables in this valuation will provide realistic scenarios that portfolio management can stand behind.

Brokers and lenders will be slow to adopt or even accept an alternate valuation methodology for commercial real estate assets. CFO's will be reluctant to adopt these values because of their lack of market acceptance. However – asset, risk and portfolio managers should embrace such a methodology because it provides a better picture of true asset performance and a benchmark and sanity check for "official" valuations.

TECHNICAL CHALLENGE

Anyone who has ever waited for a DCF model to calculate understands that an asset management analyst could solve the world hunger crisis in the time that is wasted waiting for valuation results. But what if, to get a better valuation picture, it was necessary to run 10,000 DCF calculations for each property in a portfolio? Given the current state of the technology serving our industry an analyst would hit retirement age before getting a result. In a portfolio of 100 assets each run would require 1,000,000 iterations. It seems like an insurmountable challenge. In other asset classes – derivatives, fixed income, equities – stochastic valuation models have been used for many years. Why is real estate so different?

The cash flow associated with real estate assets is lumpy and complicated. Forecasting base lease information, recovery structures, tenant improvements, leasing commissions, and other lease level attributes (across a variety of property types and geographies) combine to create this complexity and inherent performance issues. Traditional models relying on a single set of infrastructure, whether client or server based, will never allow for a reasonably workable stochastic valuation model. Thankfully, the advent of cloud has introduced the possibility of tapping into huge amounts of computing power for a tiny fraction of the cost of actually building that capacity internally. With this technical hurdle now far less daunting, we can expect solution providers to begin offering stochastic tools to the market.

WHAT'S NEXT?

At Hipercept we are planning to offer stochastic valuations as part of our portfolio management as a service. This will enable clients to benefit from traditional DCF values but also be able to experiment with the addition of a probability driven valuation layered on top of a DCF. In addition to the analytics, reporting, and forecasting that Hipercept is known for, this new service will become part of our comprehensive solution for asset and portfolio management. This will enable our clients to focus less on the data aggregation nightmare and more on managing the risk and strategy of their portfolios.

For more information on Hipercept can, please contact Damien Georges at dgeorges@hipercept.com.

U.S.

239 Washington Street
Suite 305
Jersey City, NJ
07305
+1 551 200 6623

UK

48 Charlotte Street
Suite 303
London
W1T 2NS
+44 77 6366 7290

CANADA

111 Elizabeth Street
Suite 506
Toronto, ON
M5G 1P7
+1 647 309 6209