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CAP RATES: WHAT'S THE LONG-TERM SPREAD TO TREASURYS?

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One of the most frequent questions I hear from clients is "What's the long-term spread between cap rates and Treasurys?" This question, with a few variations, comes from all types of clients—from small investment shops to large hedge funds staffed with many quants.

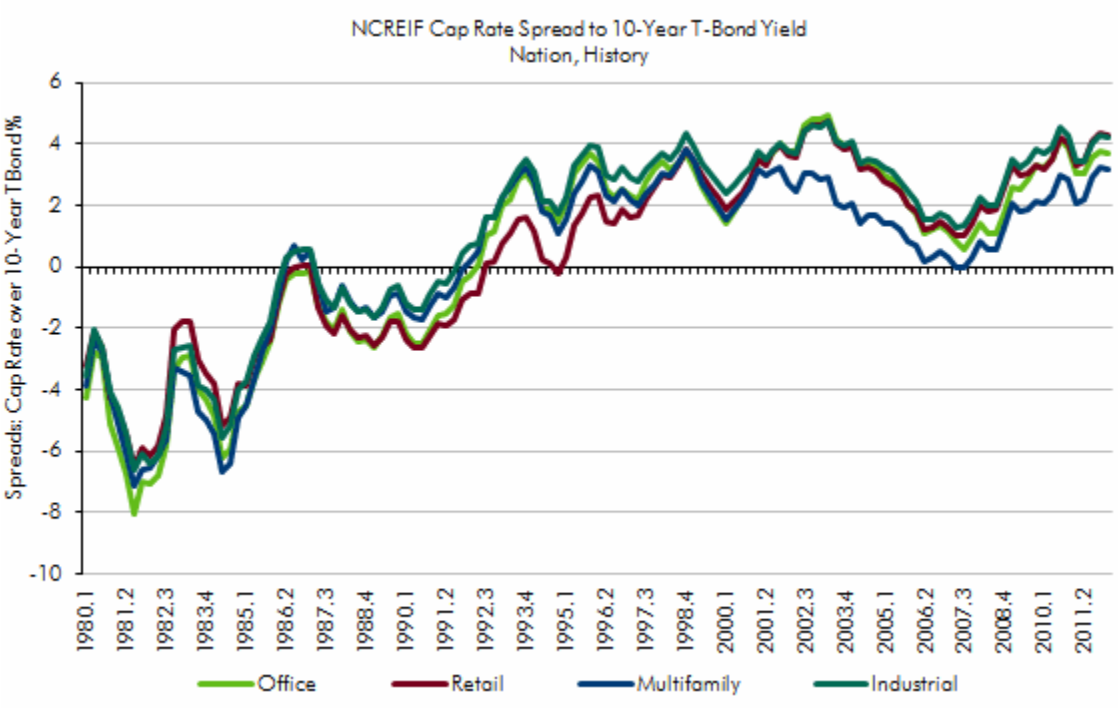
This is the wrong question to be asking, however, in that it assumes a constant spread to exist in the first place. Our research on the drivers of asset pricing and cap rates demonstrates that no such long-term *constant* spread exists, so the question is moot. Instead, the spread to Treasurys varies, depending on a myriad of macroeconomic, capital markets, and real estate factors that determine asset prices (and consequently cap rates).

Let me demonstrate this point using the econometric model that we have developed for forecasting cap rates (for more details on the model, see Chervachidze and Wheaton (2011)[1]). While the econometrics behind the model is complicated (the paper referenced gives details), the intuition is not. Following theoretical work on asset pricing, our model postulates that cap rates depend on the risk free rate of return in the economy (proxied by 10-year T-bond yields in the model), the investors' risk appetite in the economy as a whole (represented in the model by the spread between Moody's Corporate AAA bond index yields and the 10-year Treasury yields), macroeconomic debt availability to investors (proxied by the growth rate of the debt/GDP ratio), and local real estate fundamentals (represented by rent levels in a given period vis-à-vis its long-run trends).

There are additional variables—accounting for unique risk premiums and differences between cap rate trends across various markets and property types—and complicated nonlinear relationships, but the factors above capture the essence. While no model is perfect, our performs rather nicely in backtests—tests in which we compare what actually happened to cap rates in a given historic period to what our model says should have happened. We believe it is as good as these models get and use it to forecast NCREIF cap rates.

Now let us see how this model can help identify what drives the spread between cap rates and Treasurys. First, however, let's examine the graph depicting the spread between historic national NCREIF cap rates and the 10-year T-bond yields (see Figure 1; here and everywhere else, the term cap rate spread will refer to the spread between NCREIF national cap rate values over 10-year Treasury bond yields). Even without econometrics, one can see huge variations in spreads across the 30-year history (with spreads reaching deep into negative territory in the inflationary period of the early 80s), so even by looking at just this graph, one must wonder whether the concept of a constant spread is a sound one.

Figure 1.

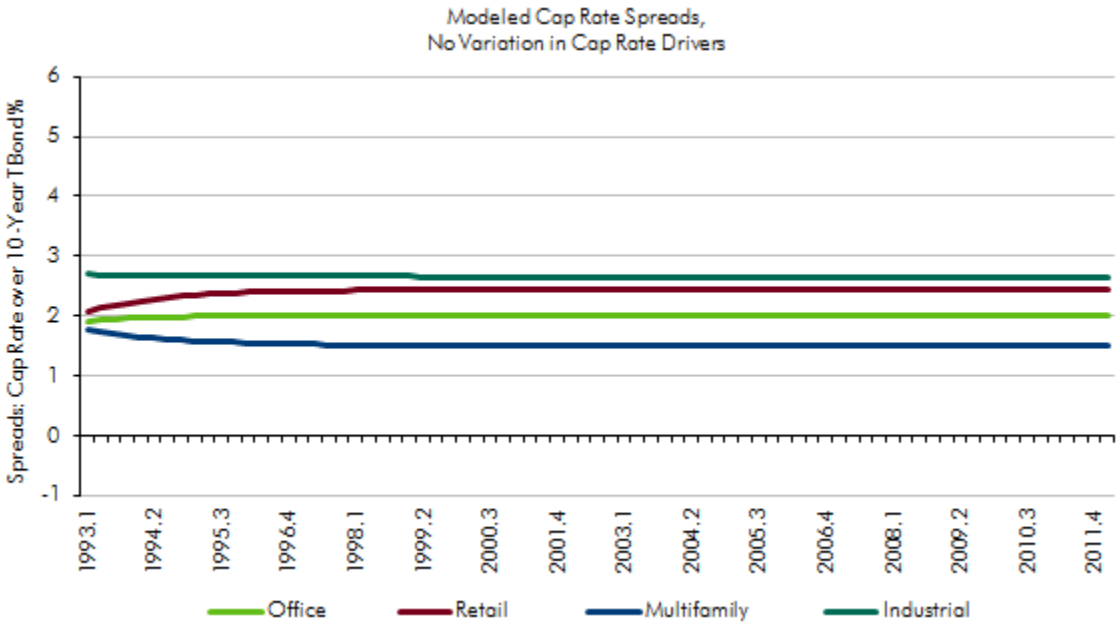


Source: CBRE Econometric Advisors.

Let's now use the cap rate model to take our analysis to the next stage. Let us start with an unrealistic thought exercise and assume that all the factors that drive the cap rate remained constant. What would happen to spreads? Figure 2 answers this question by depicting what our model says spreads would have been if there was *no variation* in the main cap rate drivers outlined above over the 1993-2012 period, assuming there were no random shocks unnaccounted for by the model (these usually end up in the error term). Technically speaking, what we do is set all the right-hand-side variables in our model—T-bond yields, risk premiums, rents, debt growth—to their respective mean values for the 1993-2012 period, and then forecast cap rate spreads for this period using our econometric model. Not surprisingly, spreads adjust to the some constant level and stay there. This is the only case—completely hypothetical and impossible in real life—where one will see *constant* cap rate spreads.

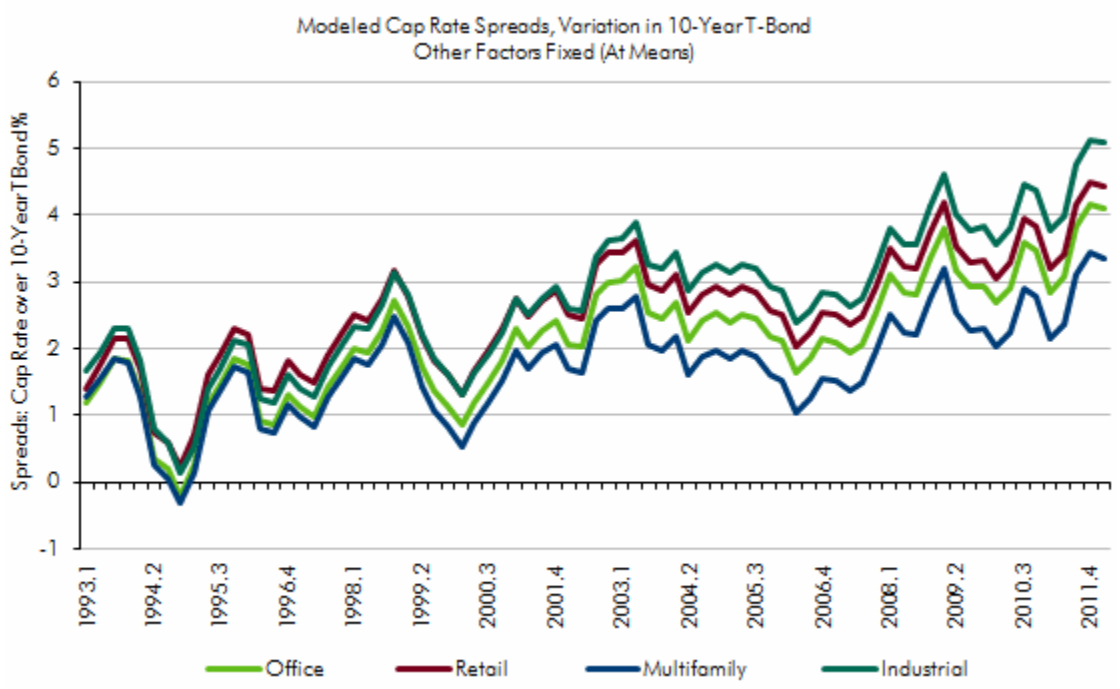
Now let us use Figure 2 as our reference case and see what effect varying each of the factors driving cap rates (risk free rates, rent levels, etc) would have on cap rate spreads, while keeping all other factors fixed. Figure 3 shows the effects of using actual historic T-bond yields for the 1993-2012 period (which obviously varied during this time) on the modeled cap rate spreads, with the other factors fixed. Immediately, one can see that just varying the T-bond yields alone causes cap rate spreads to vary rather significantly over time—in other words they are far from constant. In this hypothetical example, cap rates (and hence their spreads over Treasurys) continuously respond to changes in the risk free rates, and these spreads never reach some constant long-run value.

Figure 2.



Source: CBRE Econometric Advisors.

Figure 3.

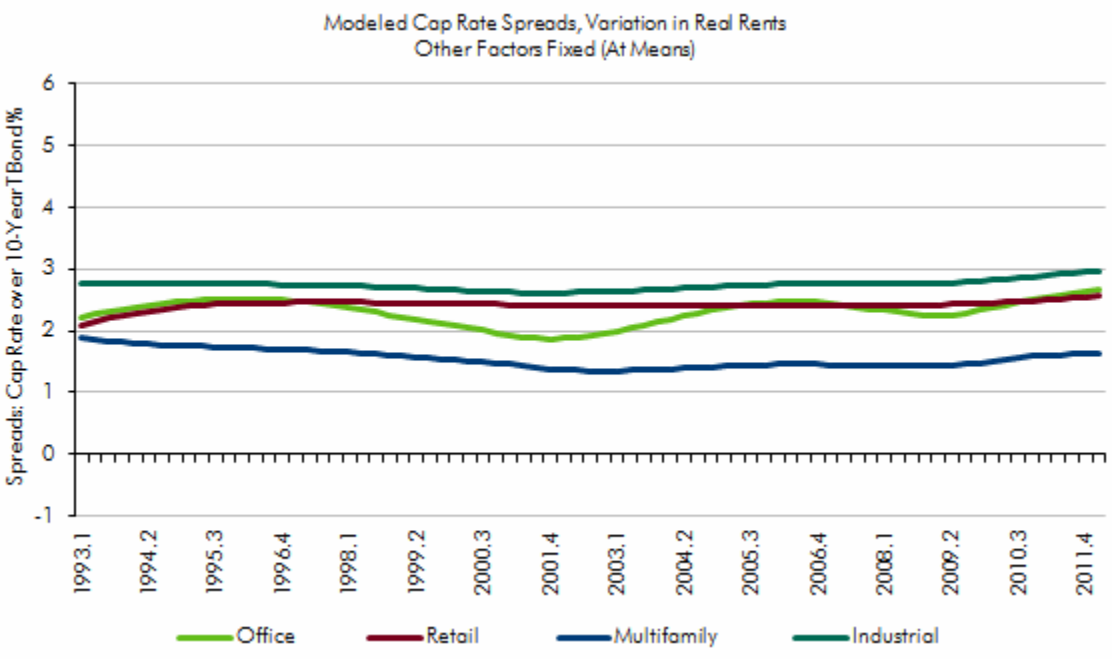


Source: CBRE Econometric Advisors.

Next, let us examine what effect variation in rents would have on cap rate spreads, while holding other factors (including Treasury yields) fixed over our test period. This is done in Figure 4. Once again, one can see that spreads are changing in responses to changes in rent levels (again we use historical rent levels for this exercise, as we do in case of all these tests). However, it is evident that the fluctuations are significantly smaller than in case of Treasury yields. This is in line with our research on CRE asset pricing, which shows that capital markets

and macroeconomic factors have a much stronger influence on cap rates than rental market fundamentals[2] .

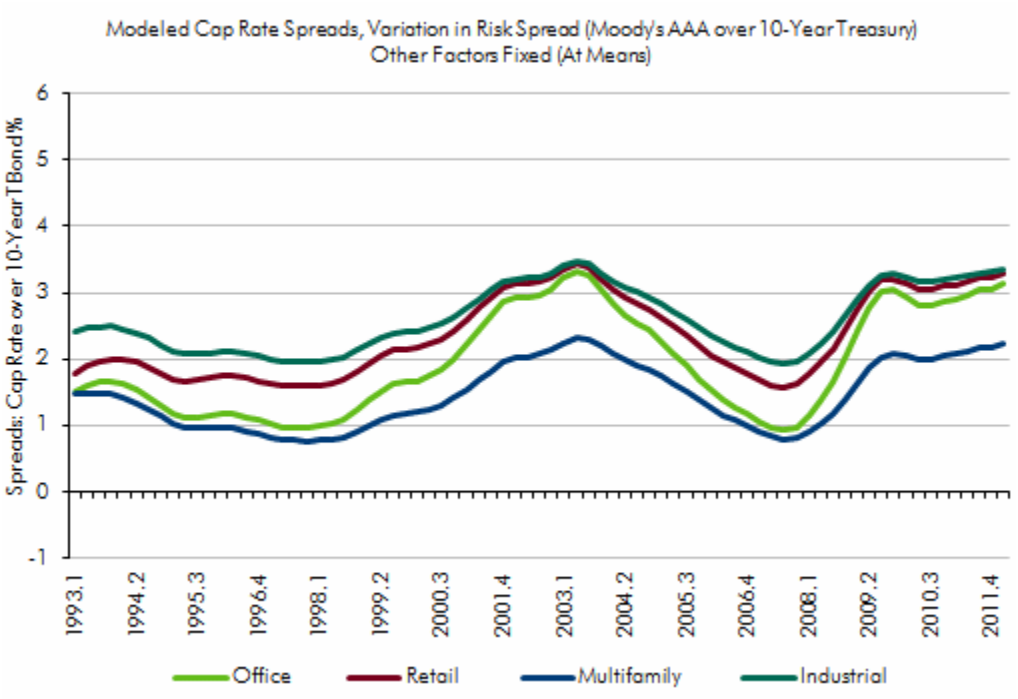
Figure 4.



Source: CBRE Econometric Advisors.

Let us now perform the same exercise on the economy-wide risk premium (proxied by the spread between Moody's AAA bond yields and the 10-year Treasury yields), as is done in Figure 5. Once again, we see strong effects on cap rate spreads, controlling for other factors—especially during the dot-com bubble burst as well as the recent financial crisis. One can also notice that the timing of effects is different from that of Treasury yields, with effects being much longer in duration (i.e. peak-to-trough adjustments taking much longer than in the effects of risk free rates).

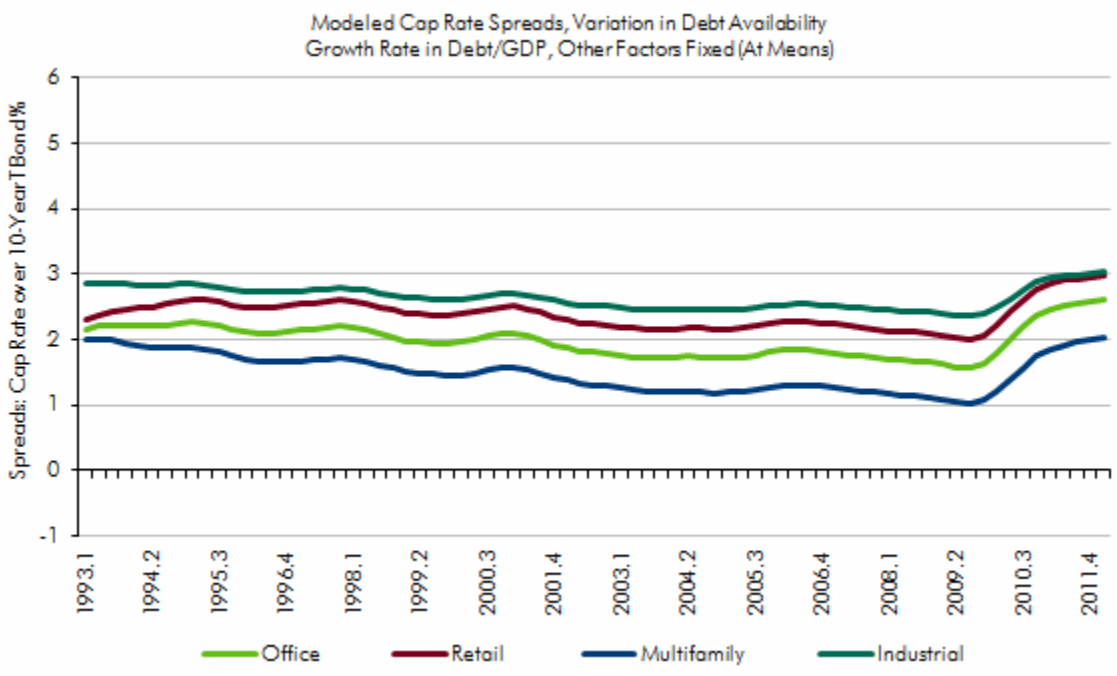
Figure 5.



Source: CBRE Econometric Advisors.

Finally, Figure 6 examines the effects of changes in economy-wide debt availability (growth rate in Debt Outstanding to GDP) on spreads. The results are again significant—especially so during the financial crisis and its aftermath, being responsible for strong upward pressure on cap rate spreads. This is consistent with the strong net effects that contraction in credit availability had on asset pricing during the crisis (the effect, again, is a net one, since we control for all the other factors by holding them fixed).

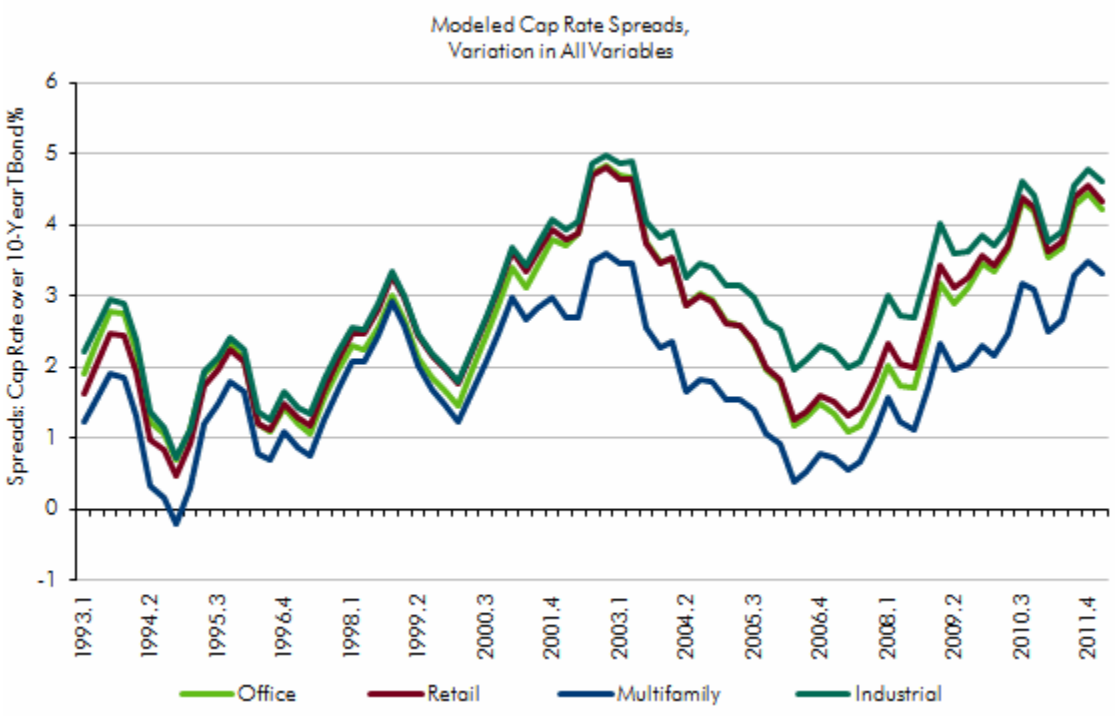
Figure 6.



Source: CBRE Econometric Advisors.

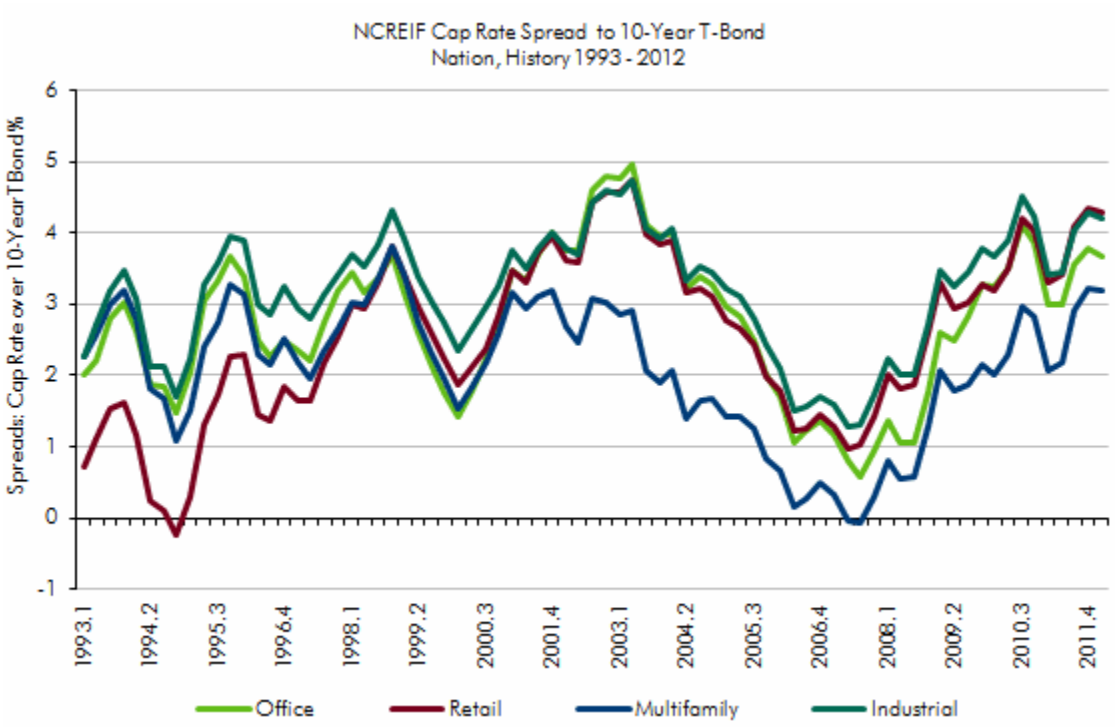
Overall then, we see that by varying just one factor at a time and keeping others fixed, we still obtain significant permanent variation in cap rate spreads. The *overall* variation in cap rate spreads, then, is the sum of these individual effects (some canceling each other out, some reinforcing each other at various points in the 1993 – 2012 sample), which together cause the spreads to vary significantly over time. The total effect of these spreads is depicted in Figure 7, which—while not matching the historic spreads for this period exactly (depicted in Figure 8), is nonetheless a good model of the spreads that actually occurred.

Figure 7.



Source: CBRE Econometric Advisors.

Figure 8.



Source: CBRE Econometric Advisors.

The bottom line of this analysis is that there really is no constant long-run cap rate spread to Treasurys. The various factors that drive cap rates will cause this spread to vary across given points in time; the spreads will always be changing.

This conclusion does not imply that looking at these spreads will not prove insightful to an investor. On the contrary, spreads indicate the changes in relative pricing of real estate to a benchmark risk-free rate. What one must keep in mind, however, is that this spread will never be constant; rather, it will constantly be changing in response to changing macroeconomic and real estate market fundamentals. Rather than focusing on some constant spread, an investor must understand the various factors that affect it in order to make informed pricing decisions.

[1] Chervachidze, Serguei and William Wheaton. "What Determined the Great Cap Rate Compression of 2000–2007, and the Dramatic Reversal During the 2008–2009 Financial Crisis?" The Journal of Real Estate Finance and Economics. September 2011, DOI: 10.1007

[2] Ibid.