March 2016

TIAA GLOBAL ASSET MANAGEMENT

Real Estate Strategy & Research

End of the road? Assessing the likelihood of a US commercial real estate downturn

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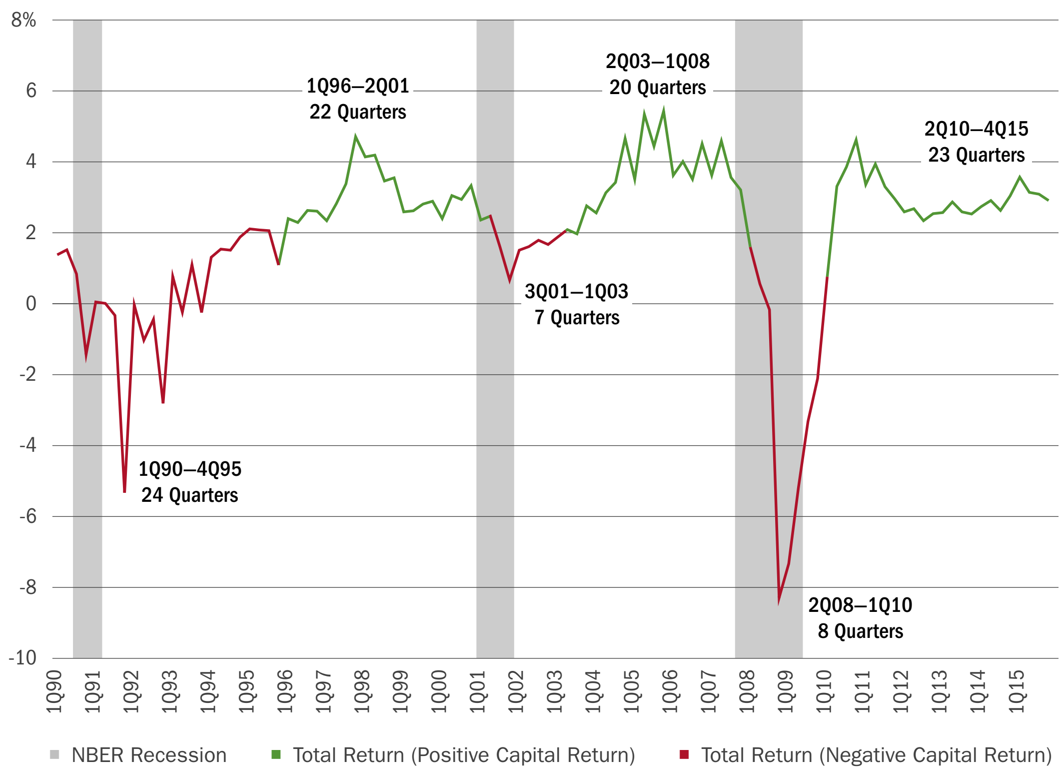
Commercial real estate (CRE) performance has been "on a roll". The NCREIF Property Index (NPI), a widely-used total return performance benchmark of US institutional-quality CRE, has posted 6 consecutive calendar years of double-digit total returns. This marks the longest such run in NPI history; the previous record was 5 years between 1996 and 2000. This longevity combined with more frequent and intensifying financial market volatility has elevated investor anxiety. Some investors fear that the "end of the road" for the real estate expansion may be approaching. But, it bears remembering that real estate expansions do not just expire or die of old age. Utilizing a well-accepted technique for analyzing economic cycles, we explore the likelihood of a US real estate downturn in the next four quarters. Our findings support our "cautious optimism" regarding US CRE prospects; we do not see the "end of the road" for the expansion just yet.

Mapping the cycle

The cyclicality, or ups and downs, of the CRE cycle can be highlighted using NCREIF Property Index (NPI) quarterly total return data (see Exhibit 1). This is the raw material for gauging the relative longevity of the current cycle in a historical context. For the quarterly total returns, the green line segments indicate periods of CRE expansion, i.e., periods when quarterly NPI capital returns were positive; red segments represent contractions, i.e., periods when capital returns were negative.

Exhibit 1: NPI* total returns & US recessions

1Q90-4Q15



Sources: NBER; NCREIF, as of 4Q15; TIAA

*It is not possible to invest in an index. Performance for indices does not reflect investment fees or transaction costs.

The current recovery began in 2Q10 and has now completed its 23rd quarter. With the present recovery's duration now exceeding that of the last two real estate recovery periods, this expansion can be viewed as "mature" in a historical context. But, observing the length and performance of the CRE cycle does not tell us much about real estate prospects. It is akin to looking at a map that only tells us where we have been, not where we are going. Federal Reserve Chair Janet Yellen also reminds us that it's a myth that economic expansions die of old age.[1] A recent Federal Reserve Bank of San Francisco article supports this notion, finding that post-World War II economic expansions did not grow more fragile with age.[2] We believe that the same holds for real estate expansions. So, what are the chances of a US CRE downturn?

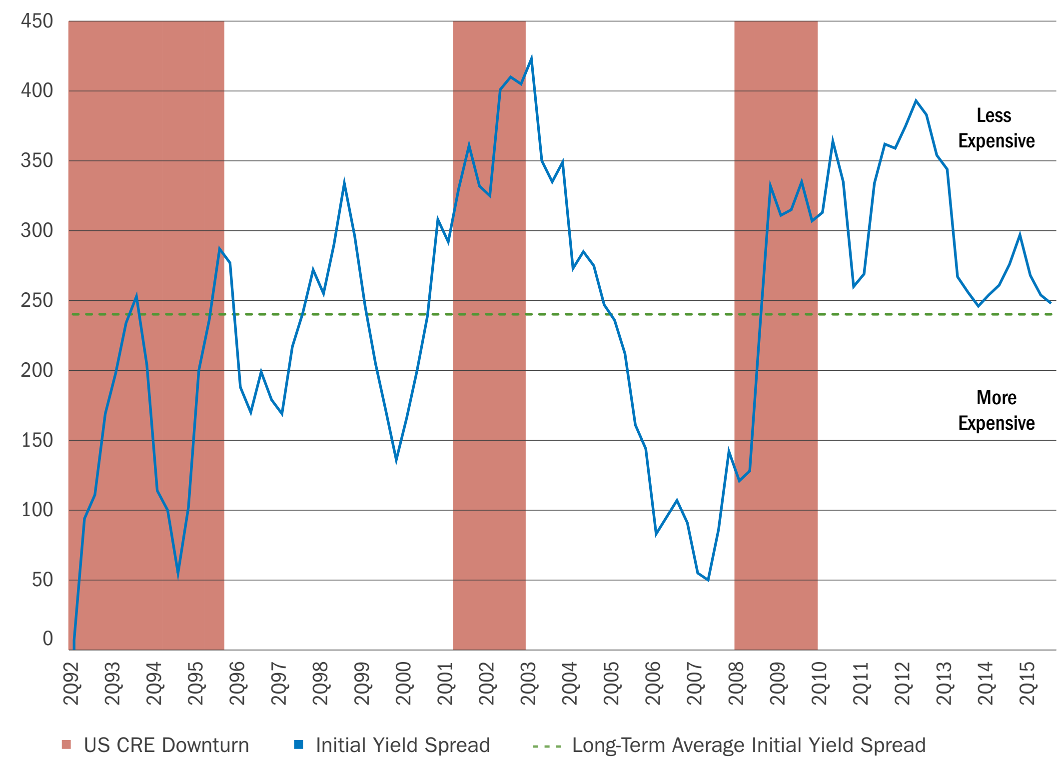
It's all relative

In assessing the prospects of the cycle, market participants often look to real estate pricing. One gauge of the CRE pricing environment is the initial yield, a NPI-derived measure that is akin to a backward-looking capitalization (cap) rate. Note that a cap rate is the ratio of a property's net operating income (NOI) to market value; using the more familiar stock market jargon, imagine an inverse price-to-earnings (P/E) ratio. All else equal, initial yields decline as property prices rise. CRE's run of strong total returns and rising property values has resulted in historically low initial yields. As of 4Q15, the initial yield was 4.7%, roughly 40 basis points below the previous low in 1Q08. Investors worry that historically low yields signal that real estate has become "expensive"; a sign that the "end of the road" for the expansion may be near.

But, before making any valuation judgments and declaring an end to CRE's period of prosperity, real estate pricing should be viewed in a relative context. Initial yield spreads are a measure of relative value—the differences between initial yields and corresponding 10-year Treasury yields. Exhibit 2 displays initial yield spreads from 2Q92 to 4Q15.

Exhibit 2: Initial yield spreads

(Basis points, 2Q92–4Q15)



Sources: Moody's Analytics; US Board of Governors of the Federal Reserve System; NCREIF, as of 4Q15; TIAA

Prior to the last downturn, the initial yield spread dropped well below the long-term historical average to 50 basis points; an indication that real estate was "expensive" at that time. Today, the initial yield spread is approximately equal to its long-term average; this is also true for the NPI transaction cap rate spread. This suggests that real estate is currently holding the line on relative value. But, wait…there may be more to the initial yield spread story. Historically, initial yield spreads have tended to plunge prior to CRE contractions. It appears that low yield spreads may be a harbinger of real estate downturns.

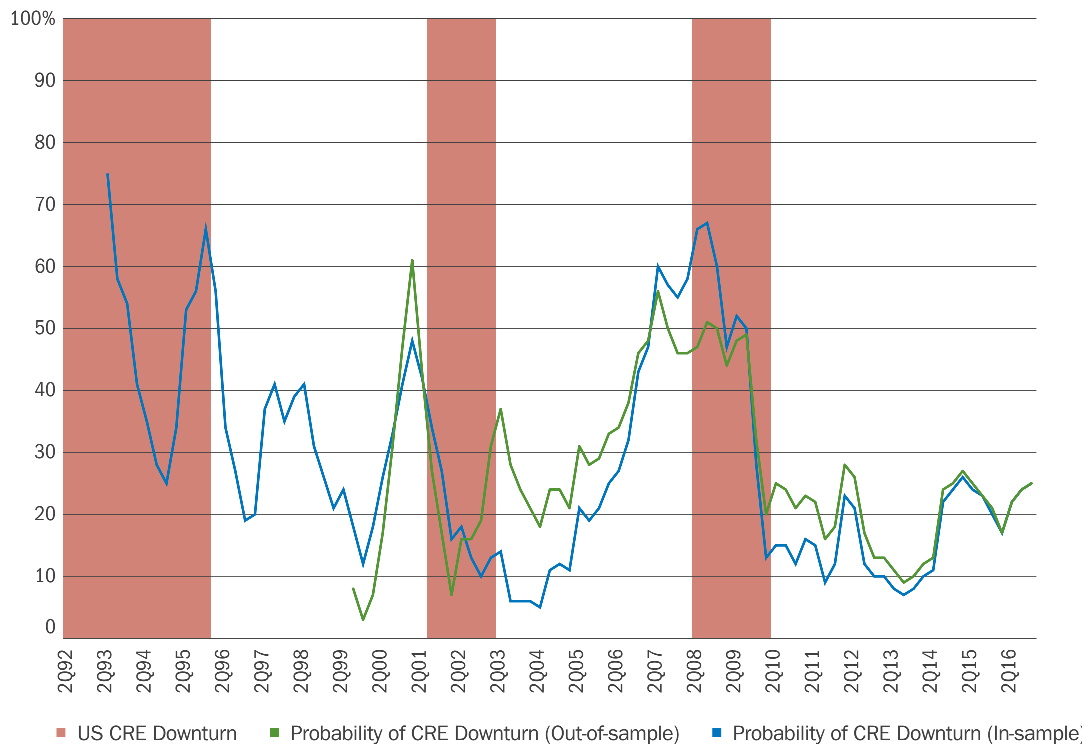
Chances are...

Utilizing a technique for estimating the likelihood of US economic recessions, we find that initial yield spreads can be a simple and effective predictor of US real estate downturns four to eight quarters ahead.[3] This analysis does not quantify forward-looking total returns, it solely focuses on the ability of the initial yield spread to predict a CRE downturn, an event with only 2 potential outcomes—either a downturn occurs or it does not.[4] The model generates a probability of the occurrence of a US real estate downturn in four quarters.[5]

Exhibit 3 displays the predicted probabilities of US real estate downturns from 2Q93 to 4Q16; it also identifies periods of CRE contraction with red-shaded areas. The blue and green lines in the chart represent in-sample and out-of-sample forecasts, respectively. The in-sample model uses all of the available data (2Q92 to 4Q15) to calculate its estimates. The out-of-sample series is more reflective of the model's predictive abilities with all forecasts only using data available up to that time; it is calculated using an iterative process. Probabilities for each series are for the quarter indicated and calculated using data from four quarters prior.

Exhibit 3: Forecasted probabilities of a real estate downturn in four quarters

(2Q93–4Q16)



Sources: Moody's Analytics; US Board of Governors of the Federal Reserve System; NCREIF, as of 4Q15; TIAA

Both sets of forecasts appear to capture the nuances of the real estate cycle. Rising probabilities prior to the last CRE downturn accurately reflect the accumulating negative imbalances of that time. Fluctuating probabilities during the current expansion highlight recently intensifying volatility. The forecasts also show that probabilities do not need to approach 100% in order to become worrisome. Past experience shows that probabilities exceeding 40% should likely be taken as a meaningful risk of an impending downturn. With a current (4Q15) initial yield spread of about 250 basis points, there is approximately a 25% probability of a US CRE downturn in the next four quarters (4Q16). This level of likelihood should be characterized as a *moderate* risk.

The results of our model can also be easily translated into a simple grid, offering real estate market participants a quick way to assess the real estate cycle. Using data from 2Q92 to 4Q15, Exhibit 4 displays estimated probabilities of a US real estate downturn four quarters into the future and related initial yield spreads.

Exhibit 4: Probability of a US real estate downturn in four quarters

Probability Estimates	Initial Yield Spread (bps)
10%	357
20%	279
30%	222
40%	174
50%	129
60%	83
70%	35
80%	-21
90%	-99

Sources: Moody's Analytics; US Board of Governors of the Federal Reserve System; NCREIF, as of 4Q15; TIAA

The grid highlights the negative relationship between initial yield spreads and downturn probabilities. It shows that negative initial yield spreads, situations where 10-year Treasury yields are greater than NPI-derived initial yields, correspond to the highest estimated downturn probabilities. The troublesome threshold of 40% is associated with an initial yield spread of 174 basis points, a level about 75 basis points below the current initial yield spread.

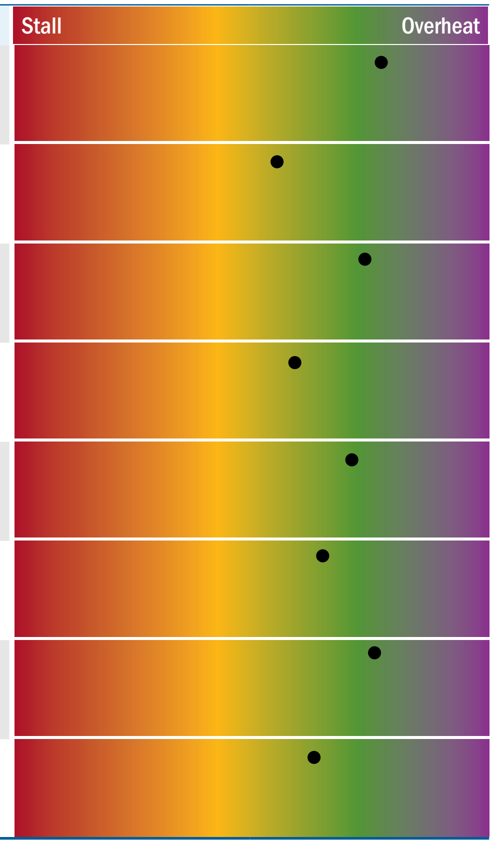
Follow the leaders

While we recognize that our downturn model is not the definitive source on CRE prospects, it is another guidepost on the unchartered road of the real estate cycle. Combined with our leading indicators of US commercial real estate performance, it helps frame our planning for the road ahead. Our leading indicators encompass eight measures across four categories that include the capital markets, CRE debt availability, the US labor market, and CRE fundamentals. Our research has shown that each indicator is a statistically significant predictor of investment performance. Our leading indicators heat map is displayed in Exhibit 5.

Exhibit 5: Leading indicators of US commercial real estate performance

(1Q16)

	Indicators	Position
Capital Markets	Interest rates	Safe haven flows have pushed the 10-year Treasury yield below 2% in early '16; Lower rates for longer continue to make real estate investment appealing
	Investor risk appetite	High-yield spreads have widened reflecting diminishing investor risk appetite; Concerns relate to how high junk bond spreads rise & for how long
Debt Availability	Debt for investors	Commercial real estate financing is readily available, no sign of credit bubble; Some lenders are becoming more selective with tightening mortgage terms
	Debt for construction	Construction lending supporting a growing supply pipeline that bears watching; Recourse loans & moderate loan-to-cost ratios prevail
Labor Market	Employment growth	Job situation has recovered on a national basis, benefiting real estate demand; But, demographic & geographic employment recovery has been uneven
	Unemployment growth	Unemployment rate at FOMC's median estimate of longer-run normal rate; Unfortunately, labor force participation rate remains stubbornly low
CRE Fundamentals	Vacancy rates	Even with rising new construction, fundamentals generally remain balanced; Vacancy rates are expected to remain in proximity of long-term averages
	Commercial property rents	Rent growth trends are mixed across property types depending on new supply; APT have absorbed elevated deliveries, moderating rent growth expected



Source: TIAA, as of 1Q16

The leading indicators tell a simple story. It is one of "good-enough" economic growth, an improving national job situation, lower-for-longer interest rates, readily-available commercial mortgage financing, strong investor appetite, and generally well-balanced real estate fundamentals. With all of the indicators remaining in the "green zone", they illustrate a positive foundation for property operational performance in 2016.

While overall conditions are supportive of solid NOI growth, some areas of potential concern exist. They include:

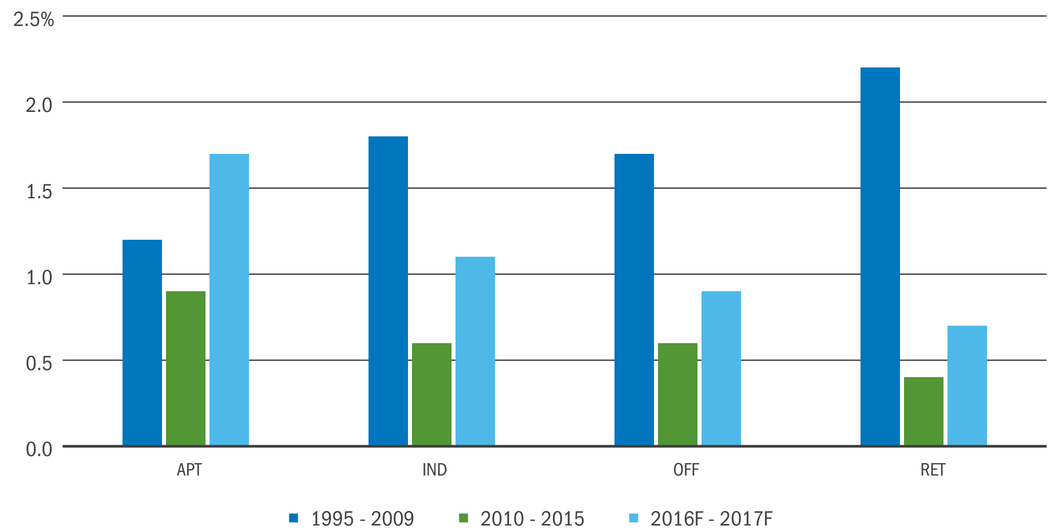
1. **Investor risk appetite**. Investor risk appetite can be captured by high-yield bond spreads. When high-yield spreads shift up, cap rate spreads tend to follow. High-yield spreads have increased materially since mid-2014, causing uneasiness for real estate investors. But, cap rate spreads have not yet been affected.

2. **Unevenness of the geographic and demographic job recovery**. Population cohorts based on educational attainment have had very different experiences in the job arena and the highly-educated population is becoming increasingly concentrated in select metros. The unevenness raises concerns that job prospects may become bifurcated.

3. **Rising new supply**. With rising new supply anticipated to be a key determinant of fundamentals and NOI growth performance, the new construction pipeline requires monitoring. Among the four major property types, the pecking order of supply concerns from greatest to least goes from apartments to industrial and office and then to retail (see Exhibit 6).

Exhibit 6: Average annual completions as a percentage of stock

(1995 - 2017*)



Sources: CBRE-EA, as of 4Q15; TIAA

F indicates forecast.

*Data for 1995 to 2015 are actuals; data for 2016 & 2017 are forecasts.

What to do?

A mature real estate cycle expansion combined with intensifying financial market volatility has led to anxious times for investors. Elevated volatility indicates heightened sensitivity to macro-economic and financial market shocks, but US CRE markets are generally well-balanced; any shock would likely be well-tolerated were it to hit. Although there are no indications of an imminent downturn, our model indicates that there is a *moderate* risk of a US real estate downturn in four quarters (4Q16), approximately a 25% chance. So, what's an investor to do?

In this environment, there are no clear buy, sell, or hold recommendations; any view depends on an investor's risk appetite, time horizon, and perspective. *Buyers* will tend to take a “half full” perspective and focus on solid economic growth prospects, generally balanced CRE fundamentals, and attractive pricing spreads. *Sellers* will tend to take a “half empty” perspective and focus on low absolute cap rates, price appreciation to date, and the opportunity to exit. *Holders* are likely either long-term investors who have pruned their portfolios to properties that are long-term keepers or investors who are frozen by the uncertainty and do nothing. Investors with longer horizons can better tolerate today's volatility, but those with shorter horizons may need to take more defensive actions.

With all that in mind, our “house view” regarding real estate performance has not changed. We recognize the constraints on expected total return performance—low yields, limited potential for further cap rate compression, and the drag of capital expenditures. NOI growth is expected to be the driver of total returns going forward, but if the pace of new construction rises more than anticipated, NOI growth could suffer. As a result, our sentiment on the US CRE market remains “cautiously optimistic.” We haven't reached the “end of the road” for the expansion just yet.

1. See "FOMC: Transcript of Chair Yellen's Press Conference on December 16, 2015," www.federalreserve.gov, Board of Governors of the Federal Reserve System.

2. See Glenn D. Rudebusch, "Will the Economic Recovery Die of Old Age?," *FRBSF Economic Letter*, February 8, 2016, Federal Reserve Bank of San Francisco.

3. See Arturo Estrella and Frederic S. Mishkin, "The Yield Curve as a Predictor of US Recessions," *Current Issues in Economics and Finance*, June 1996, Federal Reserve Bank of New York.

4. US CRE downturns are defined as calendar quarters when NPI capital returns are negative. The analysis can also be completed using NPI transaction cap rate spreads, but we found that models using NPI-derived initial yield spreads offered a better fit.

5. Although we find that initial yield spreads can be a simple and effective predictor of US real estate downturns four to eight quarters ahead, our discussion concentrates on the probability of a US real estate downturn in four quarters. This is done for simplicity and in keeping with the convention traditionally used for US economic recessions.

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