

U.S. Office

Preparing for the next recession—taking a macro perspective



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- Because recessions vary in nature according to their macroeconomic causes, assessing a market's sensitivity to specific macro indicators lets us judge its vulnerability to a given recession type.
- Consequently, investors can reduce recession-related risk by diversifying portfolios across macro factors.
- Tech and finance markets are especially sensitive to asset mispricing, while West Coast markets are sensitive to credit risk.
- The S&P 500 index and the TED¹ spread are good leading indicators for high-sensitivity markets; spikes are followed by a rent response several quarters later.

Typically, we watch real estate fundamentals—such as vacancy rates, rent growth, construction pipelines, net absorption and cap rates—to anticipate market movements. But during large economic swings—such as the onset of a recession—rapid changes in the macroeconomic environment can crucially influence markets, sometimes overriding market fundamentals.² Individual markets will respond differently to the specific form these changes take, so the nature (cause) of a given recession can help predict which markets will weather it well. Most recessions are sparked by either market-wide mispricing of assets, leading to an asset bubble; insufficient liquidity due to tight monetary policy; or rising credit risk prompting borrower default and the failure of financial institutions. By judging market sensitivity to these scenarios, we can identify the markets and sectors that promise greater resilience during future recessions of each type.

¹ The TED spread is the interest rate gap between risk-free Treasury bills and unsecured interbank loans.

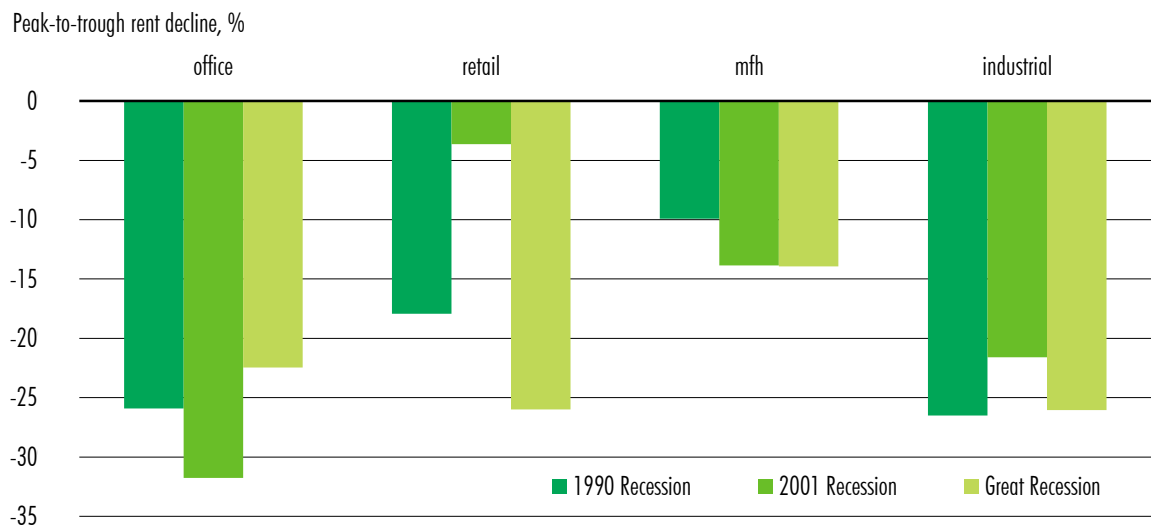
² This has been demonstrated in a number of academic studies, including “*What Determined the Great Cap Rate Compression of 2000–2007, and the Dramatic Reversal During the 2008–2009 Financial Crisis?*” Serguei Chervachidze and William Wheaton, 2013. *Journal of Real Estate Finance and Economics* 46:2, p 208-231.

DIFFERENT CAUSES, DIFFERENT EFFECTS

- *1990 Recession—Liquidity.* Preceded by tight monetary policy and significant overbuilding in the 1980s, the recession of the early 1990s was characterized by low liquidity and an abundance of vacant space.
- *2001 Recession—Asset bubble.* The 2001 recession was triggered by the dot-com bust, following a significant run-up in stock prices. Since that recession was not preceded by a construction boom, the national real estate market was relatively stable, outside of technology-heavy cities.
- *The Great Recession—Credit Risk.* A failure to correctly assess financial risk led to a near collapse of the financial sector. Although its impact on the U.S. economy was profound and long-lasting, the Great Recession’s percentage drop in real office rents was lower than that of the dot-com bust, as rents in most markets had yet to recover to their prior peaks.

These three different macroeconomic scenarios yielded rent declines that differed across sectors and markets, as shown in Figures 1 and 2. Given such consistent variation, rather than asking which markets will be safe in the next recession, we must ask which are at risk under each recession scenario. Which markets are most vulnerable when asset value declines are a recession’s cause? How would that list be different for a market debt scenario?

Figure 1. National Decline in Economic Rents during the Past Three Recessions



Source: CBRE Research, 2016.

Figure 2. Office Rent Declines during the Past Three Recessions, by Market



Source: CBRE Research, 2016.

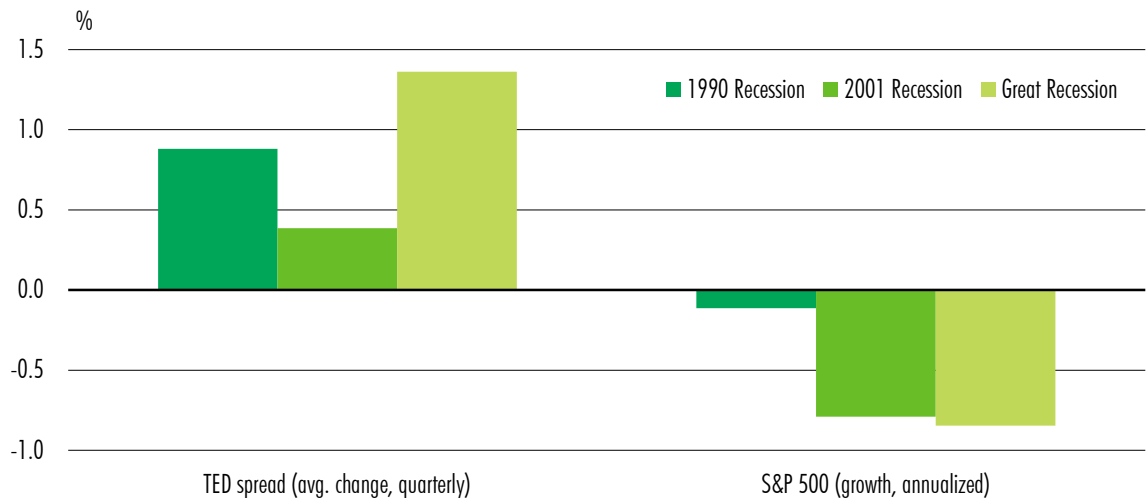
MARKET SENSITIVITY TO MACRO FACTORS

A given market’s historical performance during each type of recession is likely to hold for the next recession of that type—within limits. The assumption can produce an adequate first approximation, but the long-term trends that change markets must be taken into account.

It has been 25 years since the recession of the early 1990s, for example. If we assume that any future recession originating from tight monetary policy will affect markets like that one did, we risk overlooking the growth and changes in industry composition that have occurred in the interim. The past quarter century’s technological innovation and international integration, transformation of consumer and industrial demand, changes in the mix of goods and services, and redirection of investment and trade flows would be missed as well. In short, we need to know what underlies market sensitivity to each recession type, and whether these influences are stable over the long run.

For our study, we analyzed quarterly rent data (1990-2015) for the top 20 office markets alongside a number of macro indicators selected for how they relate to the primary causes of recessions. Two in particular—the TED spread and the S&P 500—were strong leading indicators of economic rent growth, showing us the influence of broader forces on local markets. If the next recession is prompted by growing market debt, we will see credit risk, as measured by the TED spread, increase. If an asset bubble scenario leads to the next recession, growth in the S&P 500 stock market index will be a good indicator.

Figure 3. Selected Economic Indicators: Recession-Period Changes



Source: CBRE Research, 2016.

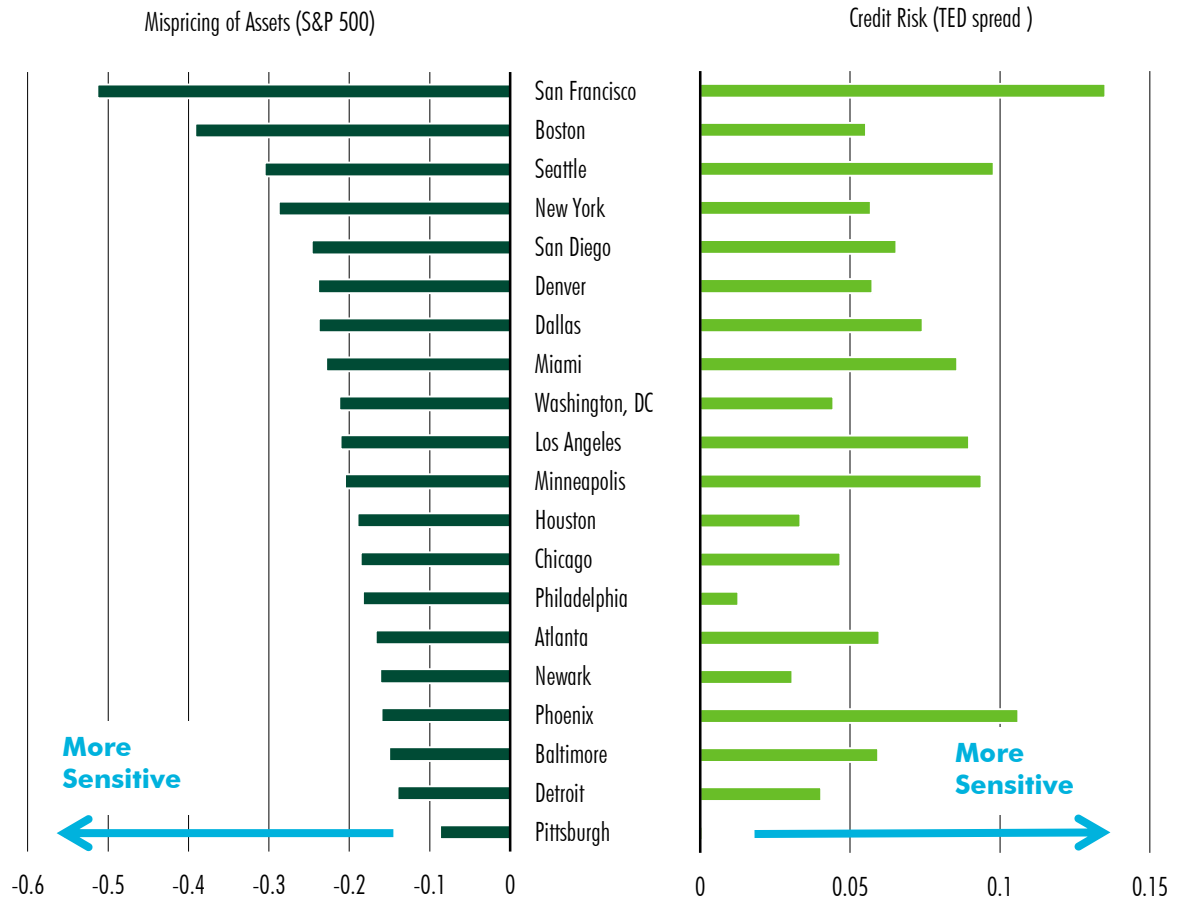
A wider TED spread corresponds with lenders demanding higher rates of interest to offset a higher risk of default; this raises the cost of capital and constrains liquidity. In Figure 3, we can see that credit risk was much higher during the earlier and later recessions than it was during the dot-com bust; greater office rent declines during those recessions would indicate a market’s higher sensitivity to this scenario. The S&P 500, meanwhile, was fairly stable during the recession of the early ‘90s, but declined heavily during the dot-com bust and the Great Recession; therefore, markets with higher sensitivity to stock valuations and asset pricing would have seen larger office rent declines during the two later recessions.

Although one can find a certain degree of co-movement among macro indexes, they do not move in sync, and the magnitude of the response varies. These differences are large enough to distinguish macro factors in statistical analysis.

Having chosen our macro indicators, we related them to movement in rents, using a number of statistical methods.³ Our results are presented in Figure 4, expressed in terms of market sensitivity to the recession-related macro conditions for which our indicators are proxies.

³ These included regression analysis, impulse-response function, and the identification of macroeconomic regimes defined by a hidden Markov model.

Figure 4. Office Rent Sensitivity to Recession-Related Macro Factors



Source: CBRE Research, 2016.

RESULTS

We found patterns of similarity based on region and/or industry mix. For example, New York, San Francisco, Boston and Seattle—markets with strong high-tech and financial services sectors—were found to be highly sensitive to asset mispricing, their rent changes correlating strongly with changes in the S&P 500. For the latter three markets in particular, a likely reason for this sensitivity is that technology investment tends to expand at a higher rate than other sectors during periods of economic growth, buoyed by rising public capital.

Meanwhile, office markets in San Francisco, Seattle, Phoenix and Los Angeles were found to be sensitive to credit risk, probably due to West Coast cities’ higher sensitivity to cost of capital and capital market liquidity. Indeed, San Francisco, San Jose, Los Angeles and Seattle were among the top six U.S. cities for venture capital investment in 2015, according to a report from the National Venture Capital Association.

During periods of high credit risk, we found Pittsburgh, Philadelphia, Detroit and Houston to have been particularly resilient. Either they were more immune to fluctuations in capital liquidity, or, as with Houston, their economies have different macro drivers, such as oil prices. That said, if you are the type of

investor that is interested in distressed assets, markets with high sensitivity to these two factors will have stronger recoveries, once conditions have improved.

This analysis is based on historical data, but captures long-run market trends that are likely to continue in the future. For example, the tech companies in West Coast cities rely on venture capital investment and are therefore exposed to credit risk. Unless there is a structural change in these markets' industrial composition, such exposure is likely to persist. When such change does happen to a market, we can use the resulting similarity to a different market to adjust our expectations. If we have reason to believe that Oakland's economy will resemble San Francisco's in the future, we can presume that Oakland's real estate market will follow a similar pattern of macro sensitivity.

During this study we noted that the TED spread and the S&P 500 are good leading indicators for high-sensitivity markets, with a spike in each coming several quarters before the market rent response. Because each macro factor represents just one aspect of an economy, there are many other factors investors should consider, depending on the property type and market specifics. For instance, currency strength and import/export flows are important factors for the industrial sector, and retail sales and consumer sentiment indices can be examined for the retail sector.

Our results offer investors foresight into how markets will behave during the next economic upheaval. As there are just a few major types of recessions, our approach provides the opportunity to manage risk through the diversification of investments across macro variables, balancing portfolio exposure to macroeconomic factors.

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