The NAIOP Industrial Space Demand Forecast

NAIOP | RESEARCH FOUNDATION

First Quarter 2016 Report

## Global Pressures and Energy Declines Weighing on U.S. Economy and Industrial Markets for 2016

2016 has opened with increasing levels of global uncertainty, which have resulted in strong declines in domestic equities markets and near-term record low energy prices. These forces are expected to translate into reduced GDP and employment growth in the short term. This has stoked renewed fears of a recession in the U.S., including a potential downturn in real estate markets. Over the long term, the stimulus effect of lower energy prices on consumers and goods producers could lead to enhanced growth, but this effect will take time to be realized. The net impact, according to Dr. Hany Guirguis, Manhattan College, and Dr. Joshua Harris, University of Central Florida, therefore is lower levels of forecasted net industrial demand in 2016 and 2017. **The forecast remains positive but trends lower, to quarterly rates of around 54 million square feet by the end of 2016, dropping to roughly 48 million square feet by mid-2017. This is down from the high of more than 60 million square feet absorbed on a quarterly basis last year.**

While a reduction in growth rates seems inevitable, especially given the preliminary 0.7 percent annualized growth rate in fourth-quarter GDP recently reported, it is not a necessary certainty that the U.S. will enter a true recession. The consumer sector remains strong as unemployment sat at a relatively low rate of 4.9 percent in January and consumer confidence continues to rise. Thus, the most likely impacts on industrial real estate markets will be significant slowdowns in the growth rate in markets dominated by energy producers and export-focused manufacturers. Industrial markets focused on domestic production and distribution to consumers will continue to experience relatively moderate, healthy growth.

"On the upside, interest rates and inflation are highly likely to remain low in 2016 and even 2017, boosting the asset markets," says Harris. **"Income-producing real estate, including industrial properties, is likely to remain favored by global investors seeking yield. This means that the direct risk of an asset pricing bubble in real estate is unlikely, and any such risk should emanate from declines in the fundamental space markets. New supply therefore should be added cautiously, based on local market conditions. The risks of further global market contagion affecting domestic demand cannot be understated. Still, when compared to issues of the past several years — the European debt crisis, for example — today's risks seem relatively less worrisome."**

TABLE 1

The NAIOP Industrial Space Demand Forecast
U.S. Markets, Quarterly Net Absorption

Forecast Square Feet   First Quarter 2016
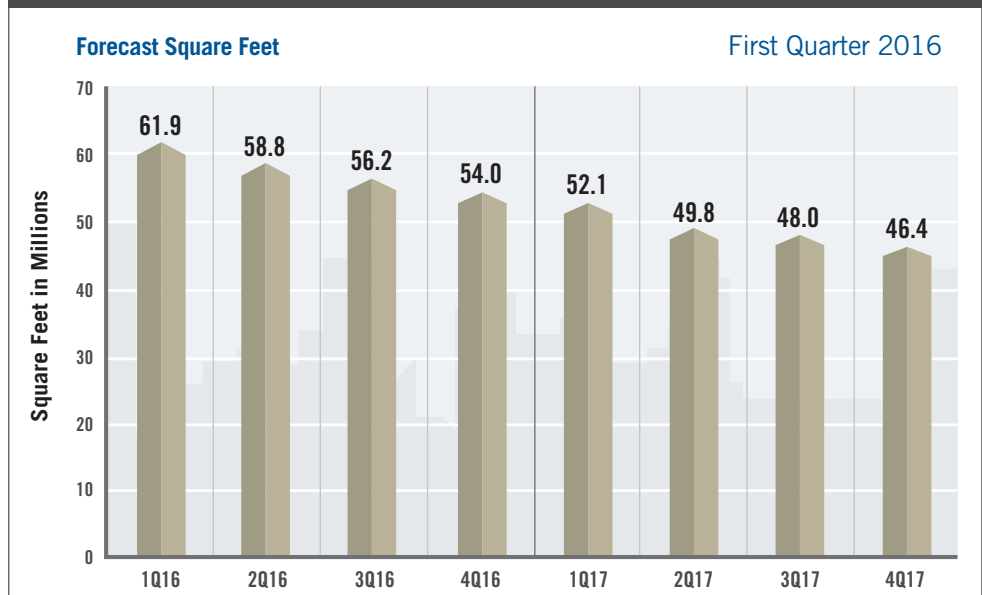
Guirguis and Harris offer one final note: "The estimates of national net absorption of industrial real estate presented herein are based, in part, on forecasts of macroeconomic activity in the U.S. As such, when predictions of macroeconomic activity become more variable and risky, as they have over the past three months, so do forecasts of real estate demand that utilize such predictions as inputs. The two variables whose forecasts have increased in variability the most are GDP and unemployment. It is these core macroeconomic indicators that are putting the most downward pressure on the forecast. If these indicators resume faster growth rates and greater stability, it is possible that net absorption of industrial space could climb above the currently forecast levels."

Key Inputs and Disclaimers

The predictive model is funded by the NAIOP Research Foundation and was developed by Guirguis and Dr. Randy Anderson, formerly of the University of Central Florida. The model, which forecasts demand for industrial space at the national level, utilizes variables that comprise the entire supply chain and lead the demand for space, resulting in a model that is able to capture the majority of changes in demand.

While leading economic indicators have been able to forecast recessions and expansions, the indices used in this study are constructed to forecast industrial real estate demand expansions, peaks, declines and troughs. The Industrial Space Demand model was developed using the Kalman filter approach, where the regression parameters are allowed to vary with time and thus are more appropriate for an unstable industrial real estate market.

The forecast is based on a process that involves testing more than 40 economic and real estate variables that theoretically relate to demand for industrial space, including varying measures of employment, GDP, exports and imports, and air, rail and shipping data. Leading indicators that factor heavily into the model include the Federal Reserve Board's Index of Manufacturing Output (IMO), the Purchasing Managers Index (PMI) from the Institute of Supply Management (ISM) and net absorption data from CBRE Econometric Advisors.

ISM, the Federal Reserve and CBRE Econometric Advisors assume no responsibility for the Forecast. The absorption forecast tracks with CBRE data and may vary when compared with other data sets. Data includes warehouse, distribution, manufacturing, R&D and special purpose facilities with rentable building areas of 10,000 square feet or more.

Actual versus Forecast

The Annual Net Absorption Table shows actual versus forecast net absorption. The model successfully projected a drop and rebound in net absorption in 2009 and 2010, as inventory supplies dwindled.

Initial and Ongoing Research

In 2009, the NAIOP Research Foundation awarded a research grant to Anderson and Guirguis to develop a model for forecasting net absorption of industrial space in the United States. That model led to successful forecasting two quarters out. A white paper describing the research and testing behind the model for NAIOP's Industrial Space Demand Forecast is available on the NAIOP Research Foundation website.

TABLE 2

The NAIOP Industrial Space Demand Forecast
U.S. Markets, Annual Net Absorption

Actual and Forecast Square Feet — First Quarter 2016

The model was revised in 2012 to forecast eight quarters out. For this longer term forecast, Guirguis and Harris utilize the average central tendency forecast of the unemployment rate and growth rate of real GDP, provided by the seven members of the Board of Governors and the 12 presidents of the Federal Reserve Banks during the most recent Federal Open Market Committee meeting. Their forecasts are the independent variables in the equations. The forecasts usually vary from one year to another, so different techniques are applied to convert the yearly forecast to a quarterly one, in order to create the quarterly forecasts for net absorption. The estimated coefficients on the independent variables are estimated with the time-varying Kalman filter.