NAIOP RESEARCH FOUNDATION

The NAIOP Industrial Space Demand Forecast

First Quarter 2014 Report

Strong Demand for Industrial Space in 2014, but Leveling Expected in 2015

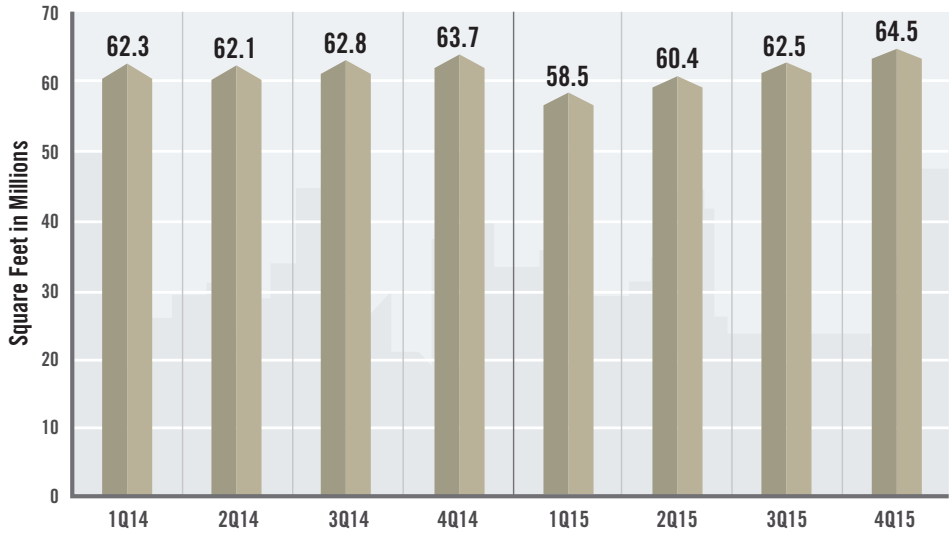
An analysis of fourth quarter 2013 data by Dr. Hany Guirguis, Manhattan College, and Dr. Joshua Harris, University of Central Florida, indicates that robust net absorption of industrial space is expected to continue through 2014 and 2015. The major drivers for this predicted positive net absorption, which could top 250 million square feet in 2014, are a return to more than 3 percent annualized GDP growth and a much improved U.S. employment situation.

Overall, new demand for industrial space most likely will come from the construction and retail trade sectors, which have been experiencing marked gains. Increases in new housing starts, up 18 percent in 2013, likely will continue as the growing population and sustained rate of new household formations suggest an undersupply of housing units for several years. Further, gains in employment will continue to translate into additional purchasing power, fueling gains in retail sales, which set another all-time high in December 2013. The combined forces of these two trends likely will result in continued growth in demand for warehousing and distribution facilities, specifically from the retail trade and housing construction sectors. **Of note is that historically, increased retail sales generated demand for retail space in shopping centers and malls. However, as consumers purchase items online versus in person at traditional stores, demand for distribution and fulfillment centers will only increase.**

TABLE 1

The NAIOP Industrial Space Demand Forecast

U.S. Markets, Quarterly Net Absorption



Fourth quarter 2013 net absorption came in higher than expected at 70 million square feet, likely due to a surge in GDP growth in the third and fourth quarters. Guirguis and Harris believe this spike was due to pent up demand and expect net absorption to normalize at a quarterly rate of about 62.7 million square feet in 2014. Specifically, they estimate that in 2014, quarterly readings will fall between 60 and 65 million square feet of positive absorption, depending on the continued strength of the economy. In addition, assuming GDP holds close to forecasts of above 3 percent growth in 2014, they expect industrial space to post approximately 250 million square feet of net absorption in 2015. More specifically, they are forecasting that quarterly net absorption figures will range between 58 and 65 million square feet, with a mean forecast of 68.8 million square feet, for all of 2015. They believe that 2014 may actually produce a larger net absorption figure than 2015, since pent-up demand for space left over from the recession should normalize by 2015, given the GDP forecasts.

"We see the return of housing as a significant part of the economy driving the need for industrial space, as building products and materials need to be warehoused and shipped across the nation to meet local demand. Further, each new housing unit will need to be furnished and will create demand for other household goods, which in turn fuels even more industrial space demand. These are long-term trends and thus partially explain the forecast of strong levels of industrial space absorption," said Harris.

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.

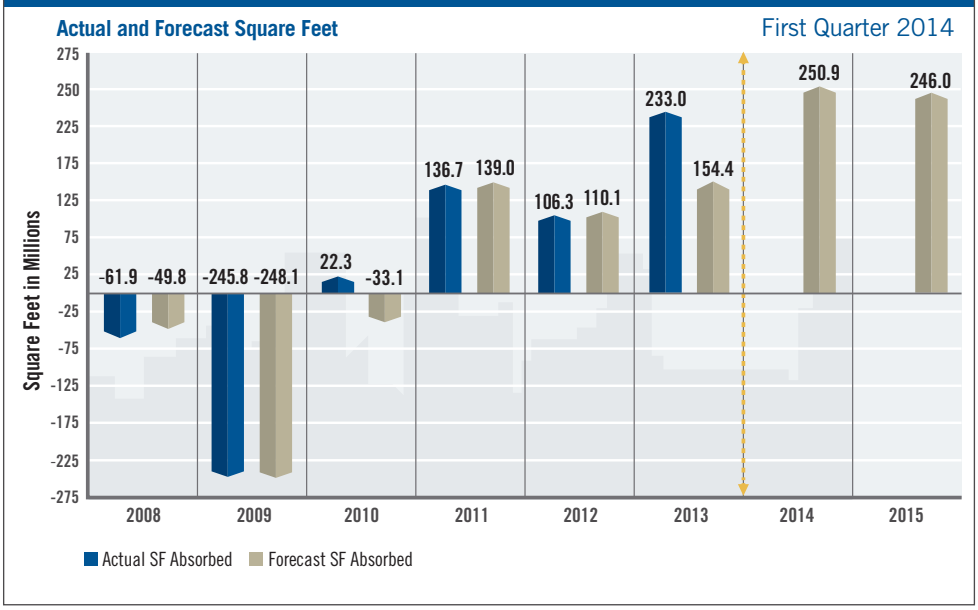
Actual versus Forecast

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.

TABLE 2

The NAIOP Industrial Space Demand Forecast

U.S. Markets, Annual Net Absorption



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.

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.

For more information about the work of the Research Foundation, contact Bennett Gray at 703-674-1436 or **gray@naiop.org**.