

## First Quarter 2015 Report

### Strong Economy Expected to Increase Industrial Demand in 2015, Return to Normal Growth in 2016

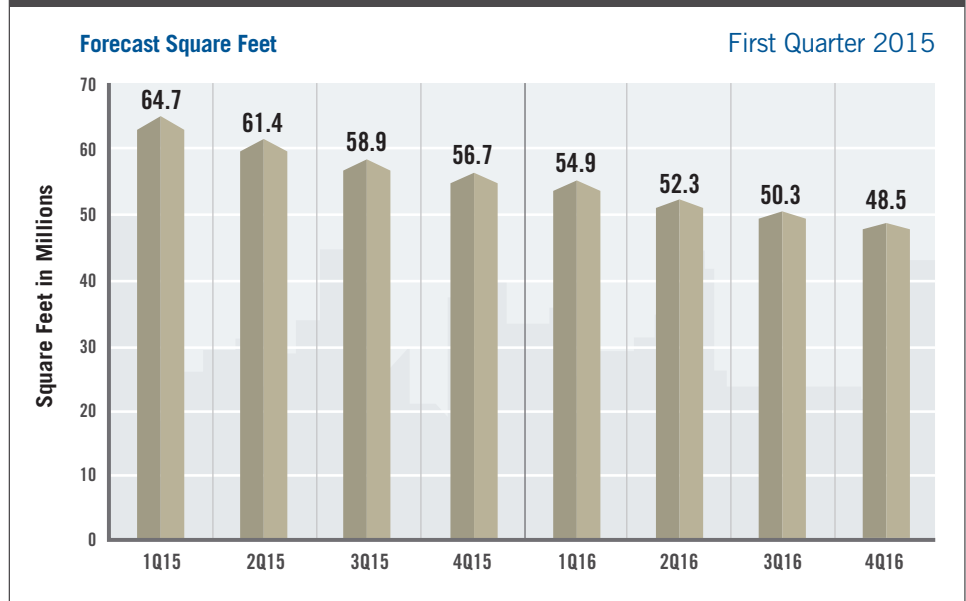
The U.S. economy showed accelerating growth through the end of 2014, with robust indications of strength for 2015. An analysis of 2014 data by Dr. Hany Guirguis, Manhattan College, and Dr. Joshua Harris, University of Central Florida, indicates that, not surprisingly, the national industrial market absorbed approximately 224 million square feet (net), with asking rents steadily rising in each quarter of 2014. GDP moved into strong positive territory, with a 5.0 percent rate of annualized growth in the third quarter and employment continued to surge through the end of the year. These factors are likely to continue their strong performance throughout 2015, especially given the still low interest rate environment, and are thus likely to produce strong net demand for industrial real estate in 2015.

**“We are forecasting a net occupancy gain of 242 million square feet of industrial space by the end of 2015 or approximately 60.5 million square feet per quarter,”** said Harris. **“We still expect the first half of the year to be slightly more robust than the second half, as pent up demand is satisfied and the economy starts to temper. This trend should likely persist throughout 2016, when our absorption forecast moderates to a net gain of 206 million square feet. Assuming that economic productivity and employment gains persist, we find it highly likely that interest rates will rise by the end of the year and throughout 2016. This will help level economic growth and control inflation.”**

The consumer segment of the economy is looking healthier than it has since 2007, before the Great Recession. Retail spending has set new record highs almost every month, unemployment has hovered around the near full employment level of 5.6 percent as of December 2014, and there even appear to have been some gains in real wages in industries such as leisure and hospitality and information. Further, the recent decline in oil and gasoline prices offers a great form of stimulus to many lower- and middle-income families that will no doubt translate into increased consumer productivity. Guirguis and Harris thus expect a great deal of the demand for industrial space to come from firms that produce and distribute consumer goods, including the automotive sector, which has grown considerably (auto sales are up 6.03 percent in 2014) and is almost fully recovered from the recession.

TABLE 1

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



The one gloomy sector of industrial demand will likely be oil and gas producers and their servicers, contractors and suppliers. The fall of oil prices to below \$50 per barrel is assuredly going to translate into reduced oil exploration activities in the U.S. and elsewhere as supply outshoots demand. On net, Guirguis and Harris believe losses in space due to energy price weaknesses will be more than made up by gains in consumer-serving industry demand, but regional differences are nonetheless likely to occur. Oil prices are very hard to predict. Guirguis and Harris therefore identify this as the greatest source of uncertainty for their 2015 industrial demand forecasts.

## 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.

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.

