Demand Remains Solid for Industrial Space in 2014 and 2015, but Tempered in 2016 as Economy Levels

An analysis of second quarter 2014 data by Dr. Joshua Harris, University of Central Florida, and Dr. Hany Guirguis, Manhattan College, indicates that robust net absorption of industrial space is expected to continue throughout 2014 and 2015.

The year started with wildly variable economic activity, as the first quarter experienced a negative (-2.9 percent) annualized GDP growth rate, which was followed by a positive (4.0 percent) preliminary reading in the second quarter. Not surprisingly, absorption of industrial space occurred at lower rates than expected in the first and second quarters of 2014. Both the economic slowdown and leasing slowdown are likely results of the harshly cold winter that persisted into early spring. Fortunately, robust hiring in recent months gives strong indications that the rest of 2014 likely will recover some of that lost activity and the economy will remain on a steady growth trend.
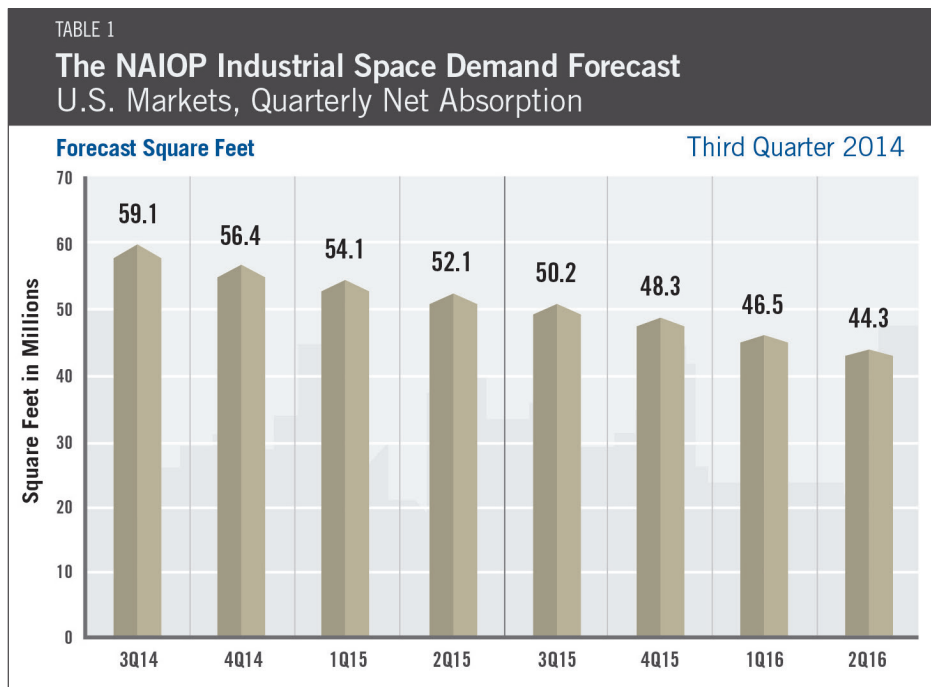
Following their analysis of first and second quarter data, Harris and Guirguis are revising their 2014 forecast of industrial space absorption to a positive 211 million square feet. They expect the third and fourth quarters to average approximately 57.7 million square feet of net absorption, which is fairly robust and indicative of a healthy industrial space market. Going forward, they forecast a slightly lower rate of 205 million square feet of net absorption in 2015, further declining to approximately 174 million square feet in 2016.

"The reason for the slightly tempered forecast is twofold. First, we believe that some of the growth in demand experienced in 2013 and 2014 was a result of pent-up demand that followed the periods of low growth after the last recession; we believe that this effect likely will exhaust itself by the end of 2014. Secondly, the levels of GDP growth forecast by the Federal Reserve and other economists have been revised downward; these inputs feed into the model and thus largely determine the forecast levels," said Harris.

The U.S. economy likely should continue a slow to moderate growth trend in terms of GDP and employment growth. Accordingly, Harris and Guirguis forecast the same for industrial space demand. The predicted drop-off of activity beginning in late 2015 and continuing through all of 2016 is fueled in part by expectations of declines in labor force participation as more and more baby boomers enter retirement and thus generate less net demand for certain goods and services. Further, sluggish growth in Europe and elsewhere in the world may temper some growth domestically. In summary, the forecast rate of net industrial space demand growth remains positive throughout 2016, but slightly tempered from prior forecasts due to changes in predictions of the underlying economic data.

One unique area of potential growth for the industrial sector in America is energy production and transport. Current events in Eastern Europe and the Middle East may result in a renewed focus on domestic energy production and growth in energy supply routes. The U.S. may even begin exporting natural gas to Europe. These activities likely will generate new demand for industrial space in areas with high concentrations of energy production and supply chain activities, such as port cities.

TABLE 1

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

Forecast Square Feet — Third Quarter 2014

Quarter	Square Feet in Millions
3Q14	59.1
4Q14	56.4
1Q15	54.1
2Q15	52.1
3Q15	50.2
4Q15	48.3
1Q16	46.5
2Q16	44.3

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 Third Quarter 2014

Square Feet in Millions

Year	Actual SF Absorbed	Forecast SF Absorbed
2008	-61.9	-49.8
2009	-245.8	-248.1
2010	22.3	-33.1
2011	136.7	139.0
2012	106.3	110.1
2013	233.0	154.4
2014		210.7
2015		204.7

■ Actual SF Absorbed ■ Forecast SF Absorbed

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**.