



Cycle Monitor — Real Estate Market Cycles

Fourth Quarter 2014 Analysis
February 2015

Physical Market Cycle Analysis of All Five Major Property Types in More Than 50 MSAs.

U.S. GDP growth of 4.3% was more than double the 1.9% 15-year average in 2014 and job growth was more than three million jobs for the year – a 15-year high. The oil price decline also allowed consumers to spend more. All these factors drove strong demand for all the property types. New supply picked up in 2014, but did not exceed demand nationally, except in the apartment sector. Therefore, absorption was a net positive in all property types except apartment.

Office occupancies were **flat** in 4Q14, and rents grew 0.9% for the quarter and 3.7% annually.

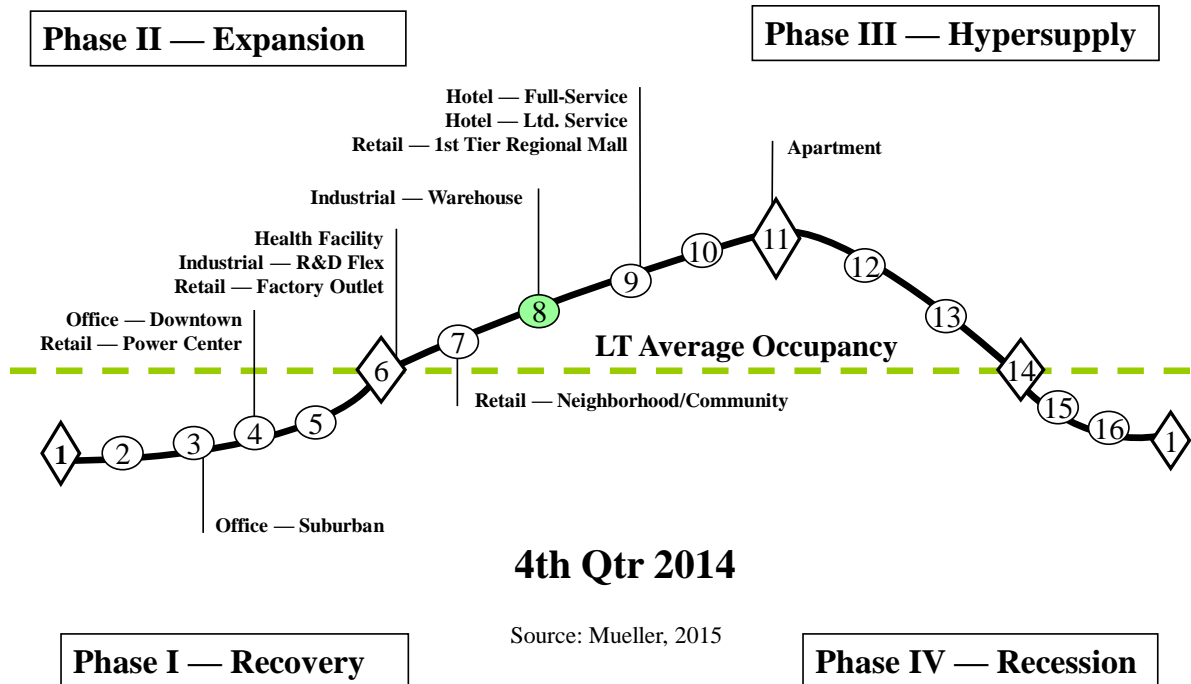
Industrial occupancies **improved** 0.1% in 4Q14, and rents grew 0.9% for the quarter and 3.9% annually.

Apartment occupancies **declined** 0.4% in 4Q14, but rents grew 0.5% for the quarter and 2.6% annually.

Retail occupancy **improved** 0.2% in 4Q14, and rents grew 0.9% for the quarter and 3.5% annually.

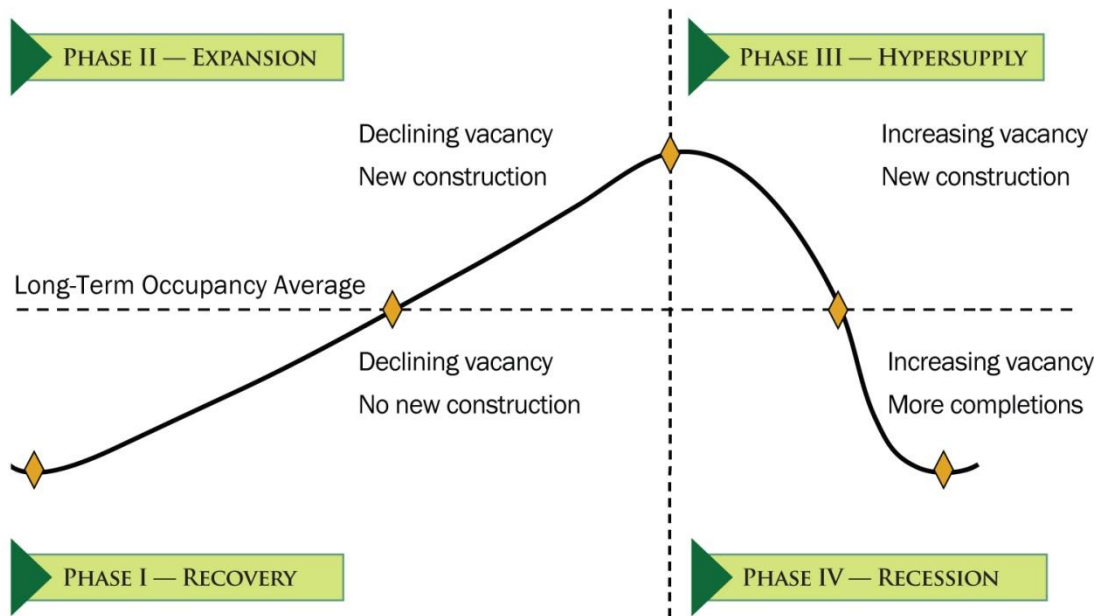
Hotel occupancies **improved** 0.2% in 4Q14, while rents declined 0.8% for the quarter and improved 3.2% annually.

National Property Type Cycle Locations



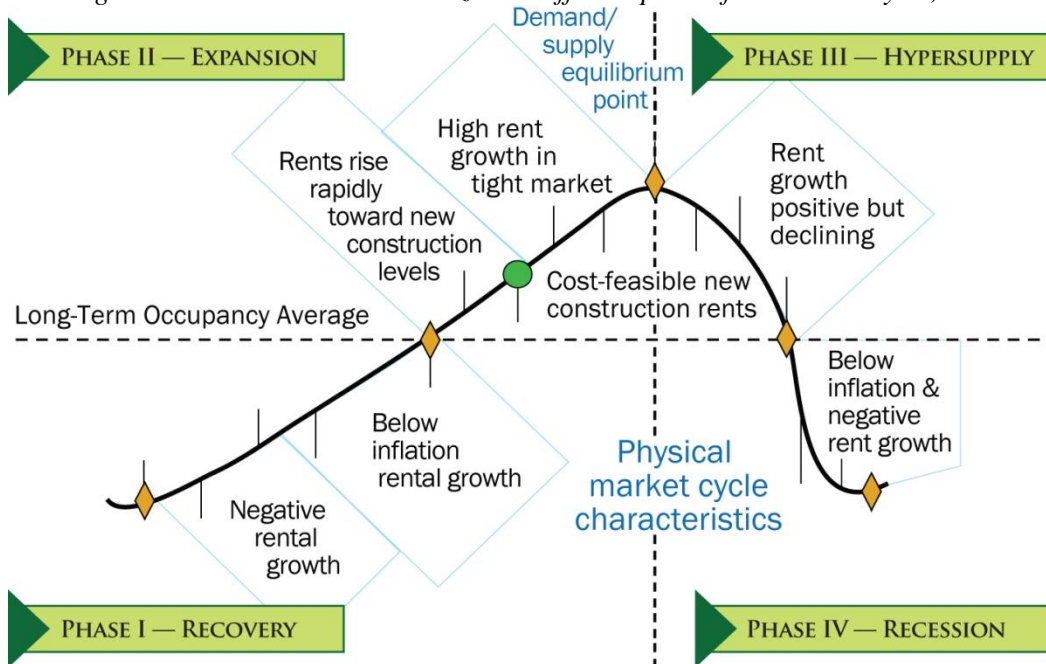
The cycle monitor analyzes occupancy movements in five property types in more than 50 Metropolitan Statistical Areas (MSAs). Market cycle analysis should enhance investment-decision capabilities for investors and operators. The five property type cycle charts summarize almost 300 individual models that analyze occupancy levels and rental growth rates to provide the foundation for long-term investment success. Real estate markets are cyclical due to the lagged relationship between demand and supply for physical space. The long-term occupancy average is different for each market and each property type. **Long-term occupancy average** is a key factor in determining rental growth rates — a key factor that affects real estate returns.

Market Cycle Quadrants



Source: Mueller, *Real Estate Finance*, 1995.

Rental growth rates can be characterized in different parts of the market cycle, as shown below.



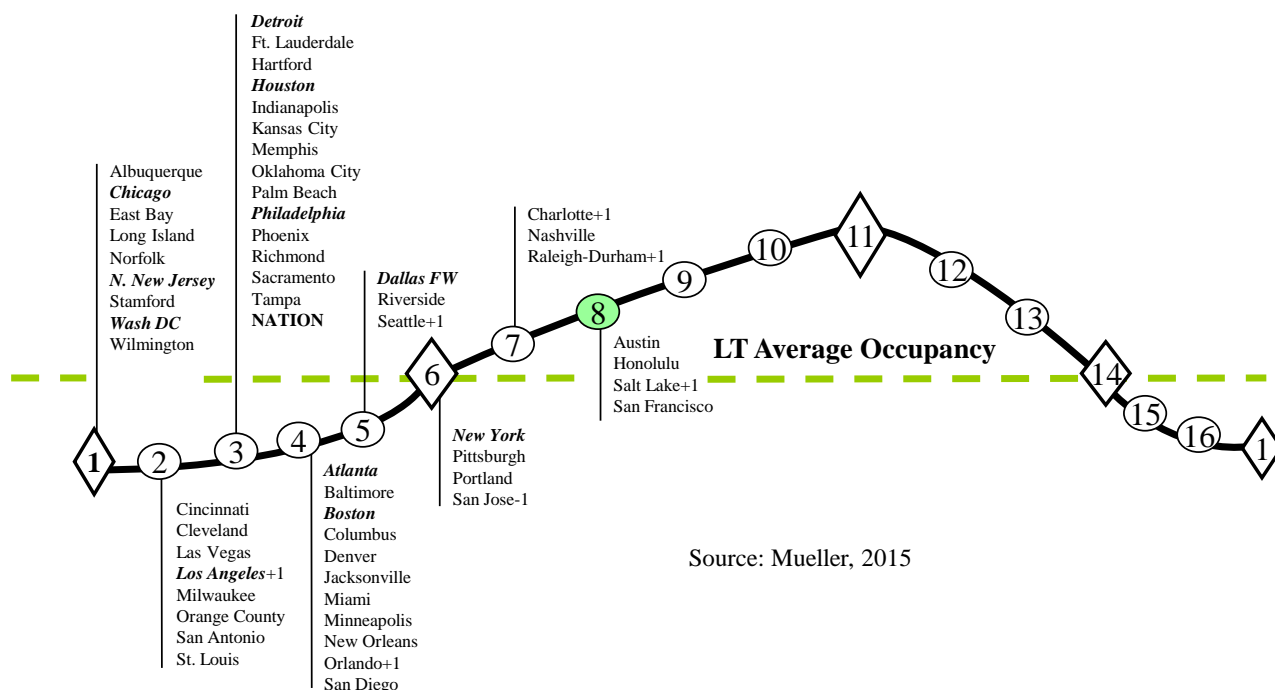
Source: Mueller, *Real Estate Finance*, 1995.

OFFICE

The national office market occupancy level was unchanged in 4Q14, and was up 0.5% year-over-year. Office jobs increased at 2.7% for the year, fueled by the strong 4.3% GDP growth and more than three million jobs created — of which 27% were office jobs. This growth created more than 90 million square feet of net absorption which was a 40% increase over 2013. The two key industries driving this were energy and technology which absorbed space at double the average U.S. rate. The highest demand for space was in Central Business District (CBD) office space and class-A office space. Average national rents were up 0.9% in 4Q14 and rents were up 3.7% year-over-year, twice the rate of inflation.

Office Market Cycle Analysis

4th Quarter, 2014



Note: The 11-largest office markets make up 50% of the total square footage of office space we monitor. Thus, the 11-largest office markets are in **bold italic** type to help distinguish how the weighted national average is affected.

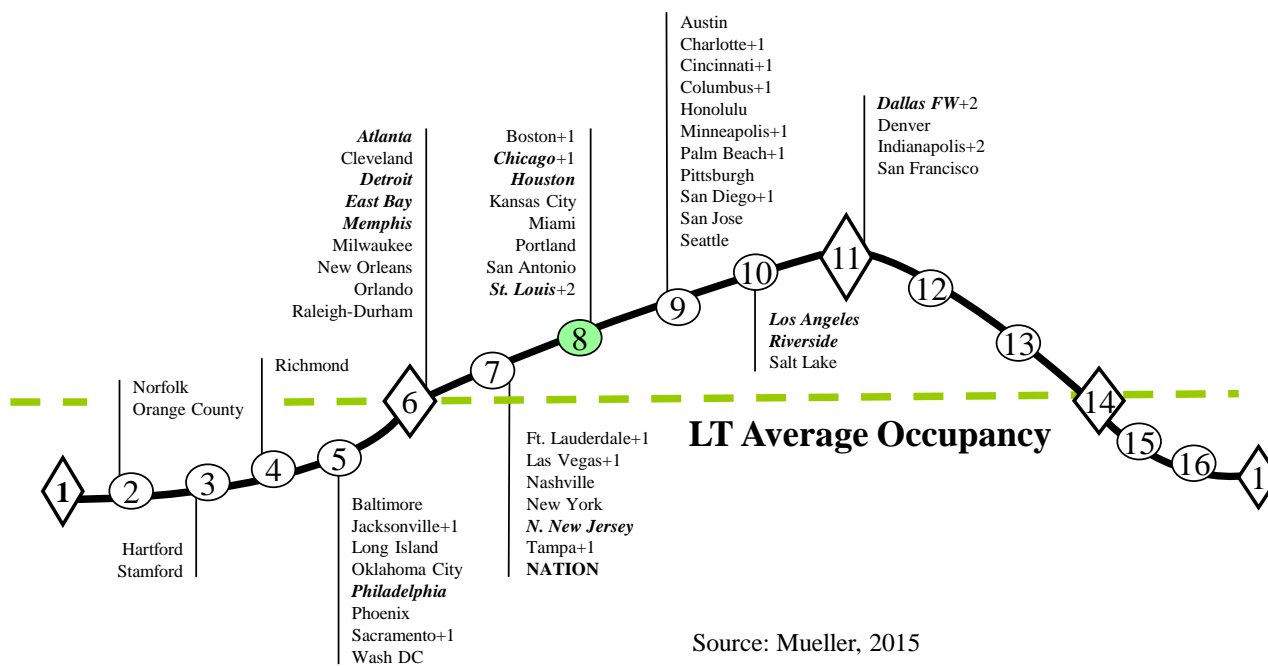
Markets that have moved since the previous quarter are now shown with a + or - symbol next to the market name and the number of positions the market has moved is also shown, i.e., +1, +2 or -1, -2. Markets do not always go through smooth forward-cycle movements and can regress, or move backward in their cycle position when occupancy levels reverse their usual direction. This can happen when the marginal rate of change in demand increases (or declines) faster than originally estimated or if supply growth is stronger (or weaker) than originally estimated.

INDUSTRIAL

Industrial occupancies improved 0.1% in 4Q14, and were up 0.4% year-over-year. Demand was up more than 3% in 2014 and net absorption was more than 170 million square feet. Logistics demand for new space has been very strong, along with small tenant expansion as well as new business creation demand. E-commerce grew 17.4% in 2014 and increased its share of retail sales from 5.9% to 6.6% of total U.S. sales, pushing up warehouse demand. The effect of the oil price decline has not yet fully hit, but we expect major declines in Houston, Oklahoma City and Dallas in 2015. The industrial national average rent index increased 0.9% in 4Q14 and was up 3.9% year-over-year.

Industrial Market Cycle Analysis

4th Quarter, 2014



Note: The 12-largest industrial markets make up 50% of the total square footage of industrial space we monitor. Thus, the 12-largest industrial markets are in ***bold italic*** type to help distinguish how the weighted national average is affected.

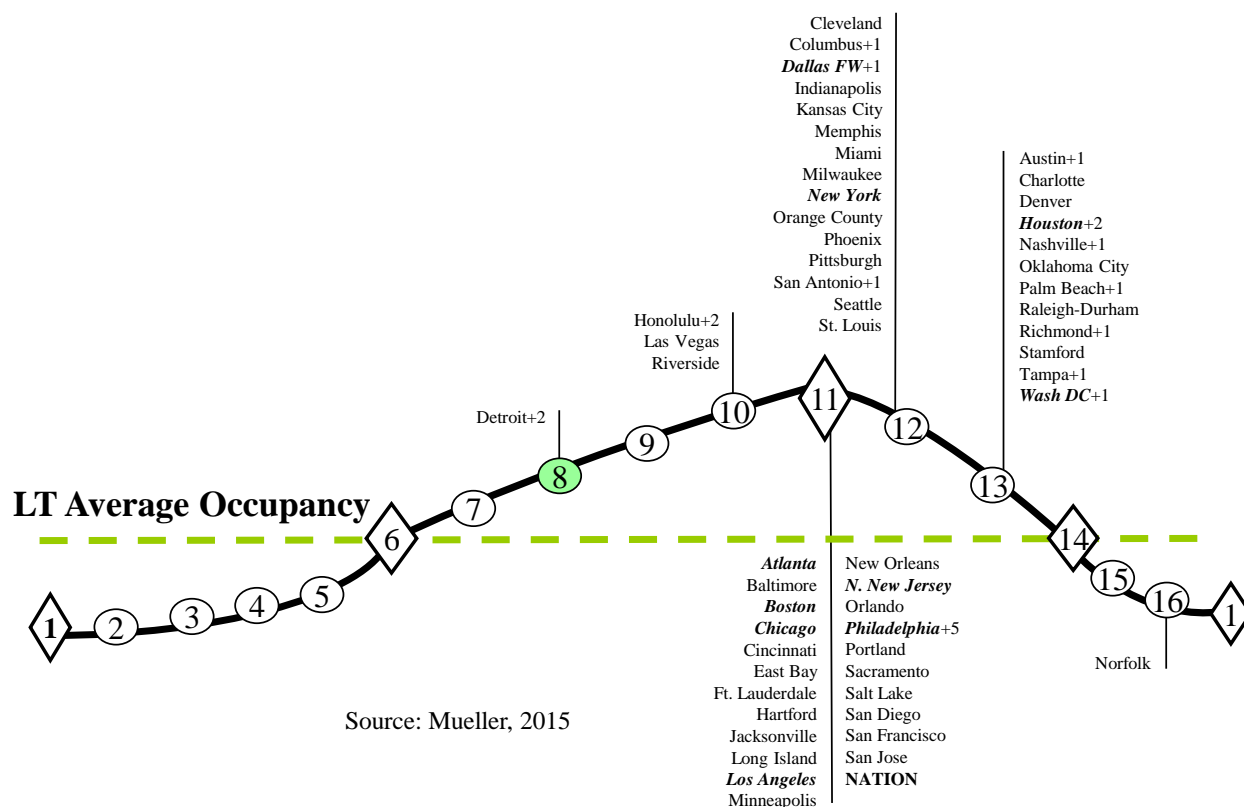
Markets that have moved since the previous quarter are shown with a + or - symbol next to the market name and the number of positions the market has moved is also shown, e.g., +1, +2 or -1, -2. Markets do not always go through smooth forward-cycle movements and can regress, or move backward in their cycle position when occupancy levels reverse their usual direction. This can happen when the marginal rate of change in demand increases (or declines) faster than originally estimated or if supply growth is stronger (or weaker) than originally estimated.

APARTMENT

The national apartment occupancy average declined 0.4% in 4Q14, and was down 0.3% year-over-year. New space deliveries continued to be strong in 4Q14 while demand was quite good. Only four markets are still in the growth phase of the cycle and 22 of the 54 markets are at peak occupancy, with the rest in the hypersupply phase where occupancies decline. No markets have declined back to their long-term average occupancy level (point #14 on the cycle graph). Rents still grow in the hypersupply phase of the cycle (as occupancies are above the long-term average), but the rate of growth slows down. Average national apartment rent growth was up 0.5% in 4Q14 and was up 2.6% year-over-year.

Apartment Market Cycle Analysis

4th Quarter, 2014



Note: The 10-largest apartment markets make up 50% of the total square footage of multifamily space we monitor. Thus, the 10-largest apartment markets are in **bold italic** type to help distinguish how the weighted national average is affected.

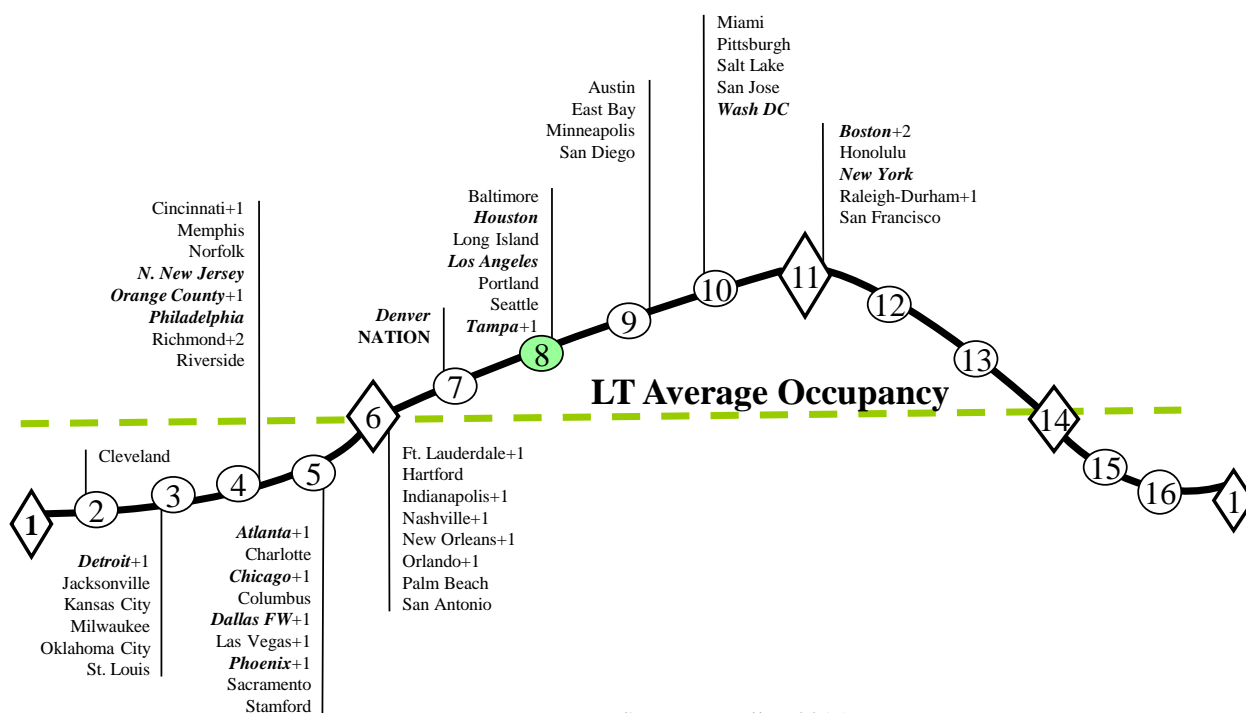
Markets that have moved since the previous quarter are shown with a + or - symbol next to the market name and the number of positions the market has moved is also shown, e.g., +1, +2 or -1, -2. Markets do not always go through smooth forward-cycle movements and can regress, or move backward in their cycle position when occupancy levels reverse their usual direction. This can happen when the marginal rate of change in demand increases (or declines) faster than originally estimated or if supply growth is stronger (or weaker) than originally estimated.

RETAIL

Retail occupancies improved 0.2% in 4Q14, and were up 3.4% year-over-year. Demand growth was strong; providing almost 100 million square feet of absorption for the year. Top tenant industry drivers were service providers, health gyms and discount stores. Good times were not evenly distributed across the country however. Many markets are still in the recovery stage of their occupancy cycle while others are at peak occupancy. Retailers are focused on good demographics and locations for their expansion plans. Black Friday is no longer a key indicator of holiday sales, as retailers have spread out their discount efforts to more than a month during the holiday season. Lower gas prices also gave another boost to already strong employment and GDP growth support for retail sales. National average retail rents increased 0.9% in 4Q14 and were up 3.5% year-over-year.

Retail Market Cycle Analysis

4th Quarter, 2014



Source: Mueller, 2015

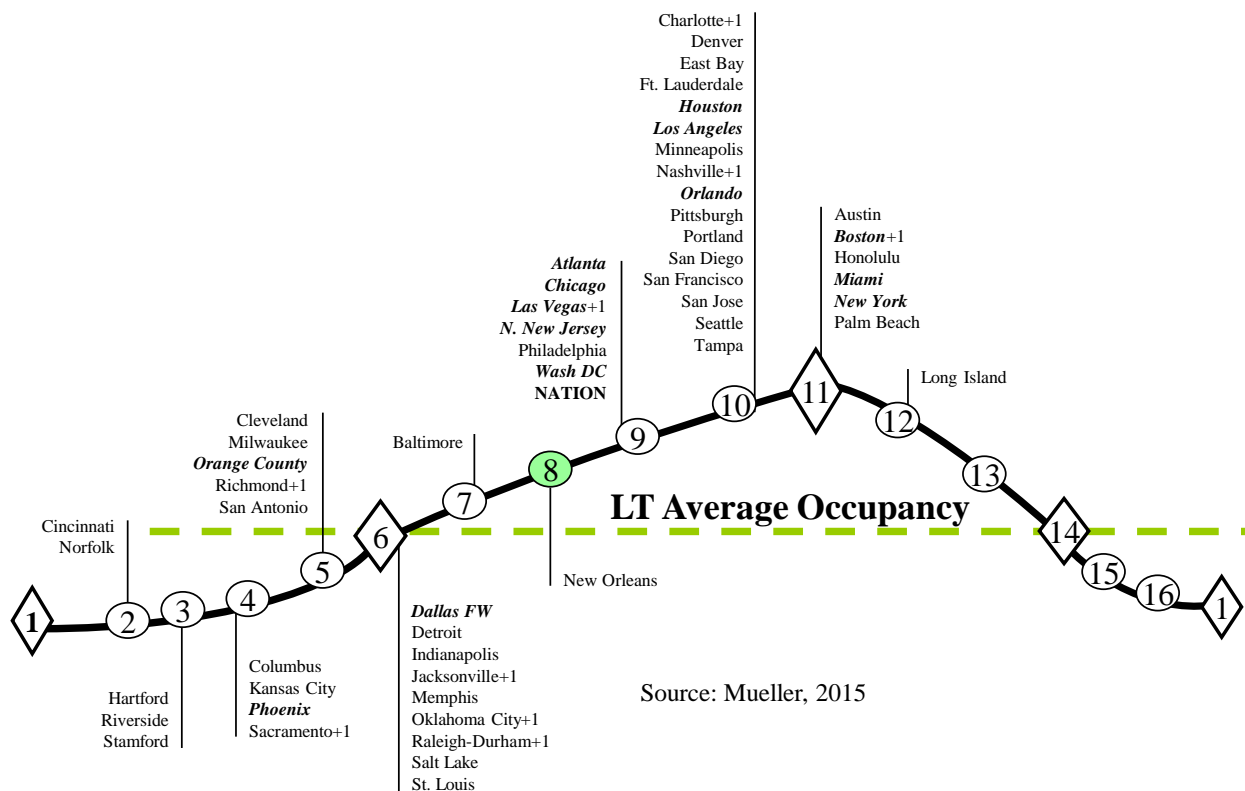
Note: The 15-largest retail markets make up 50% of the total square footage of retail space we monitor. Thus, the 15-largest retail markets are in **bold italic** type to help distinguish how the weighted national average is affected.

Markets that have moved since the previous quarter are shown with a + or - symbol next to the market name and the number of positions the market has moved is also shown, e.g., +1, +2 or -1, -2. Markets do not always go through smooth forward-cycle movements and can regress, or move backward in their cycle position when occupancy levels reverse their usual direction. This can happen when the marginal rate of change in demand increases (or declines) faster than originally estimated or if supply growth is stronger (or weaker) than originally estimated.

HOTEL

Hotel occupancies increased an average of 0.2% in 4Q14, and were up 2.1% year-over-year. A fair amount of new supply came online in 2014 giving travelers more options, but demand was also strong. Only 14 markets now reside in the recovery phase of the market cycle and the majority of these recovering markets have slow growth industries and little tourism. Hotel operators have responded to new supply by offering intermittent rate discounts, thus national average hotel rents declined 0.8% in 4Q14, but were still up 3.2% year-over-year.

Hotel Market Cycle Analysis 4th Quarter, 2014



Note: The 14-largest hotel markets make up 50% of the total square footage of hotel space that we monitor. Thus, the 14-largest hotel markets are in boldface italics to help distinguish how the weighted national average is affected.

Markets that have moved since the previous quarter are shown with a + or - symbol next to the market name and the number of positions the market has moved is also shown, e.g., +1, +2 or -1, -2. Markets do not always go through smooth forward-cycle movements and can regress, or move backward in their cycle position when occupancy levels reverse their usual direction. This can happen when the marginal rate of change in demand increases (or declines) faster than originally estimated or if supply growth is stronger (or weaker) than originally estimated.

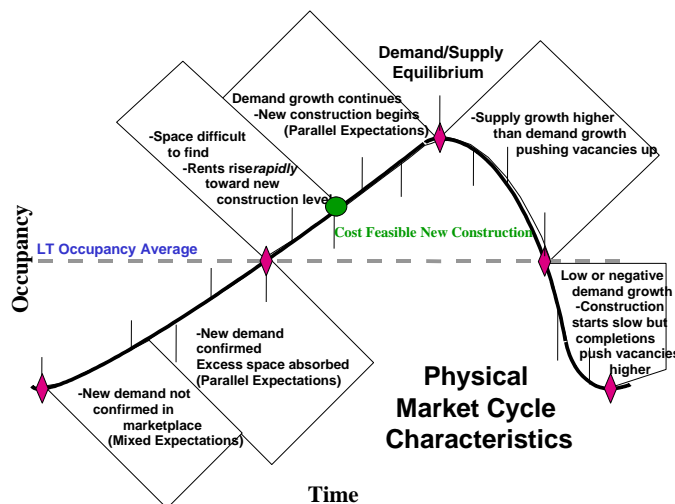
MARKET CYCLE ANALYSIS — Explanation

Supply and demand interaction is important to understand. Starting in Recovery Phase I at the bottom of a cycle (see chart below), the marketplace is in a state of oversupply from previous new construction or negative demand growth. At this bottom point, occupancy is at its trough. Typically, the market bottom occurs when the excess construction from the previous cycle stops. As the cycle bottom is passed, demand growth begins to slowly absorb the existing oversupply and supply growth is nonexistent or very low. As excess space is absorbed, vacancy rates fall allowing rental rates in the market to stabilize and even begin to increase. As this recovery phase continues, positive expectations about the market allow landlords to increase rents at a slow pace (typically at or below inflation). Eventually, each local market reaches its *long-term occupancy average* whereby *rental growth is equal to inflation*.

In Expansion Phase II, demand growth continues at increasing levels, creating a need for additional space. As vacancy rates fall below the *long-term occupancy average*, signaling that supply is tightening in the marketplace, rents begin to rise rapidly until they reach a cost-feasible level that allows new construction to commence. In this period of tight supply, rapid rental growth can be experienced, which some observers call “rent spikes.” (Some developers may also begin speculative construction in anticipation of cost-feasible rents if they are able to obtain financing.) Once cost-feasible rents are achieved in the marketplace, demand growth is still ahead of supply growth — a lag in providing new space due to the time to construct. Long expansionary periods are possible and many historical real estate cycles show that the overall up-cycle is a slow, long-term uphill climb. As long as demand growth rates are higher than supply growth rates, vacancy rates will continue to fall. The cycle peak point is where demand and supply are growing at the same rate *or equilibrium*. Before equilibrium, demand grows faster than supply; after equilibrium, supply grows faster than demand.

Hypersupply Phase III of the real estate cycle commences after the peak/equilibrium point #11 — where demand growth equals supply growth. Most real estate participants do not recognize this peak/equilibrium’s passing, as occupancy rates are at their highest and well above long-term averages, a strong and tight market. During Phase III, supply growth is higher than demand growth (hypersupply), causing vacancy rates to rise back toward the long-term occupancy average. While there is no painful oversupply during this period, new supply completions compete for tenants in the marketplace. As more space is delivered to the market, rental growth slows. Eventually, market participants realize that the market has turned down and commitments to new construction should slow or stop. If new supply grows faster than demand once the long-term occupancy average is passed, the market falls into Phase IV.

Recession Phase IV begins as the market moves past the long-term occupancy average with high supply growth and low or negative demand growth. The extent of the market down-cycle will be determined by the difference (excess) between the market supply growth and demand growth. Massive oversupply, coupled with negative demand growth (that started when the market passed through long-term occupancy average in 1984), sent most U.S. office markets into the largest down-cycle ever experienced. During Phase IV, landlords realize that they will quickly lose market share if their rental rates are not competitive; they then lower rents to capture tenants, even if only to cover their buildings’ fixed expenses. Market liquidity is also low or nonexistent in this phase, as the bid–ask spread in property prices is too wide. The cycle eventually reaches bottom as new construction and completions cease, or as demand growth turns up and begins to grow at rates higher than that of new supply added to the marketplace.



Source: Mueller, Real Estate Finance, 1995

This research currently monitors five property types in more than 50 major markets. We gather data from numerous sources to evaluate and forecast market movements. The market cycle model we developed looks at the interaction of supply and demand to estimate future vacancy and rental rates. Our individual market models are combined to create a national average model for all U.S. markets. This model examines the current cycle locations for each property type and can be used for asset allocation and acquisition decisions.

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