



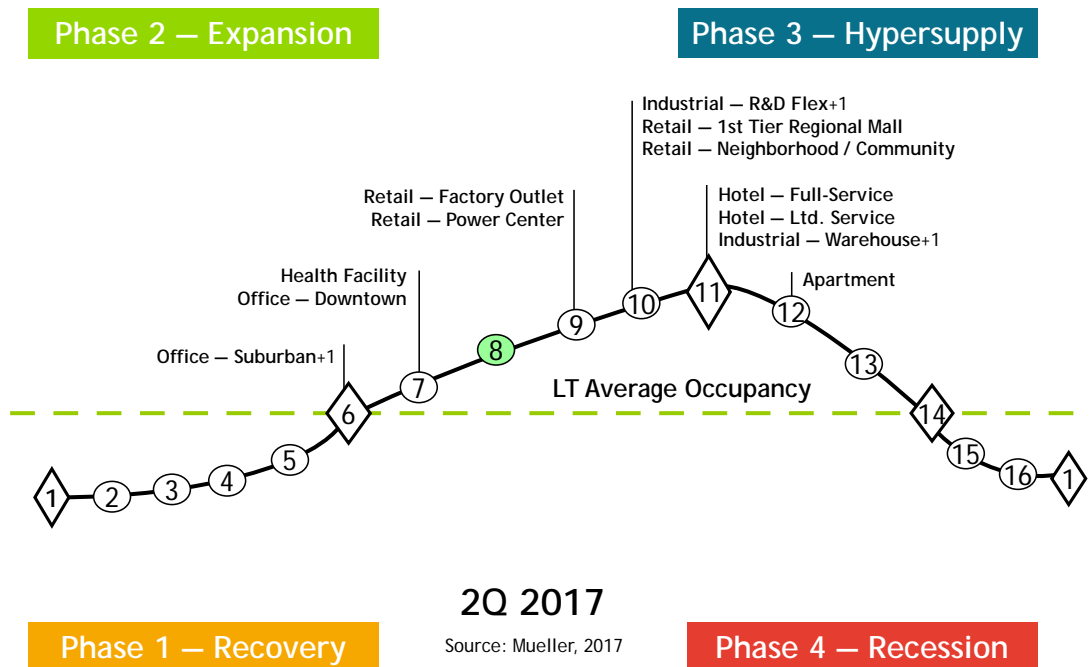
Cycle Monitor – Real Estate Market Cycles Second Quarter 2017 Analysis

Real Estate Physical Market Cycle Analysis Five Property Types in 54 Metropolitan Statistical Areas (MSAs).

Federal Reserve (the Fed) officials seem to be on hold with the economic reality that low (sub-2.0%) inflation and low unemployment continue side by side. Five years of “weak” inflation looks like it may continue for many more years, as there is little evidence of wage pressure. Thus, there is now a very good chance that the Fed may not raise the federal funds rate for the rest of 2017. Low interest rates and moderate employment growth have produced seven years of positive fundamentals for real estate that now have a higher probability of continuing in the next year with the Fed’s continued inaction.

Office occupancy increased 0.1% in 2Q17, and rents grew 0.3% for the quarter and 1.7% annually.
Industrial occupancy increased 0.1% in 2Q17, and rents grew 1.4% for the quarter and 6.2% annually.
Apartment occupancy increased 0.3% 2Q17, and rents grew 1.3% for the quarter and 2.5% annually.
Retail occupancy was flat in 2Q17, and rents grew 0.5% for the quarter and 2.1% annually.
Hotel occupancy declined 0.1% in 2Q17, and room rates grew 1.7% for the quarter and 3.3% annually.

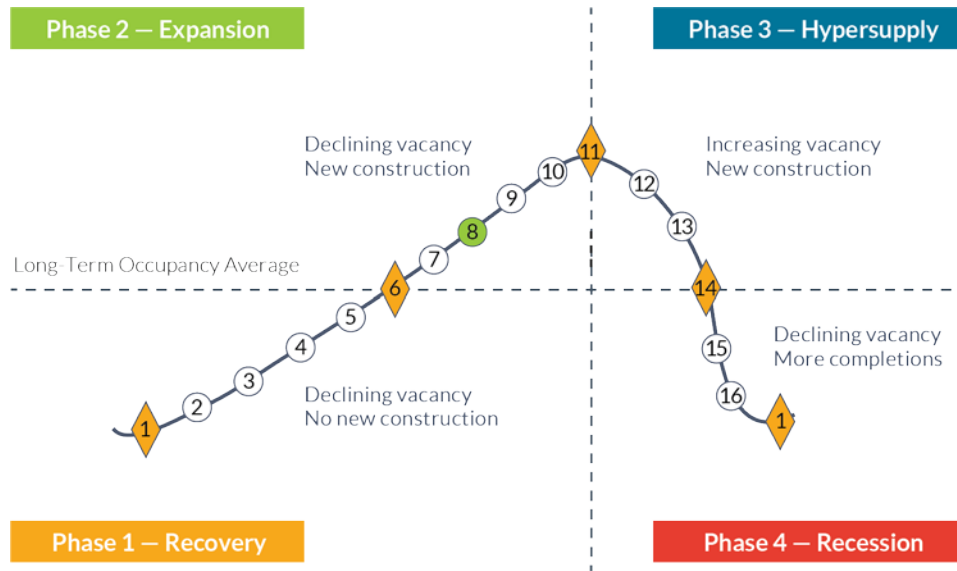
National Property Type Cycle Locations



National Property Type Cycle Locations graph shows relative positions of sub-property types – major markets are reviewed inside.

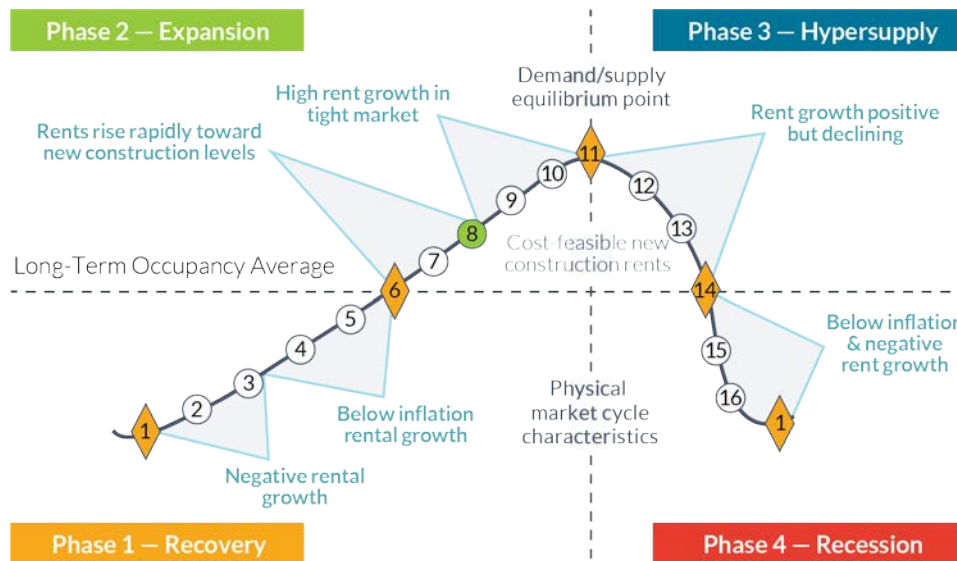
The cycle monitor analyzes occupancy movements in five property types in 54 MSAs. Market cycle analysis should enhance investment-decision capabilities for investors and operators. The five property type cycle charts summarize almost 300 individual models that analyze occupancy levels and rental growth rates to provide the foundation for long-term investment success. Commercial 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 commercial real estate returns.

Market Cycle Quadrants



Source: Mueller, Real Estate Finance, 2017.

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

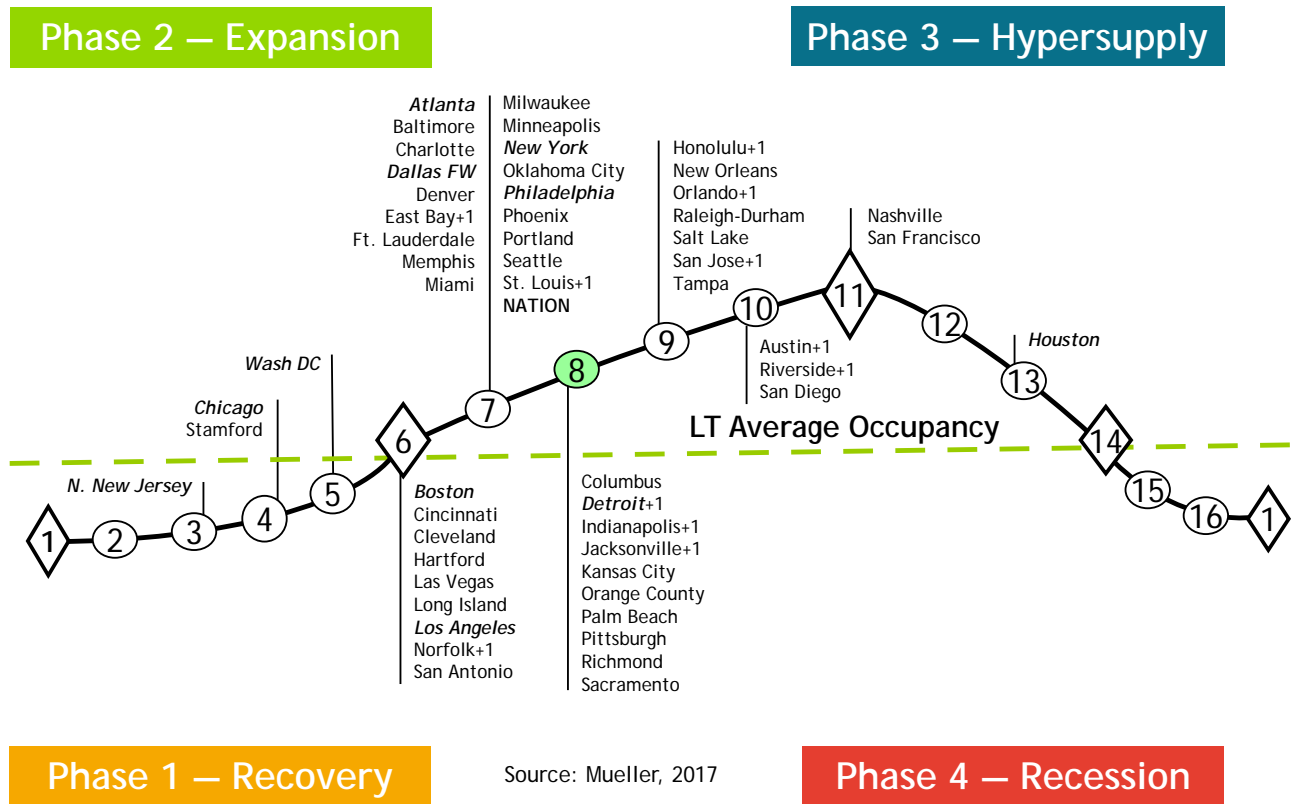


Source: Mueller, Real Estate Finance, 2017.

Office

The national office market occupancy level increased 0.1% in 2Q17 and increased 0.2% year-over-year. Continued growth in demand with moderate supply growth created another quarter of positive absorption. Employment growth slowed slightly in 2Q17 from the previous quarter to a near 200,000 people per month for the quarter. Eleven markets improved one point on the cycle graph — leaving only four markets left in the recovery phase of the cycle. Higher Central Business District (CBD) rents helped demand in suburban office and brought the national suburban office occupancy level up to its long-term average occupancy level. Average national rents increased 0.3% in 2Q17 and produced a 1.7% increase year-over-year.

Office Market Cycle Analysis 2nd Quarter, 2017



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

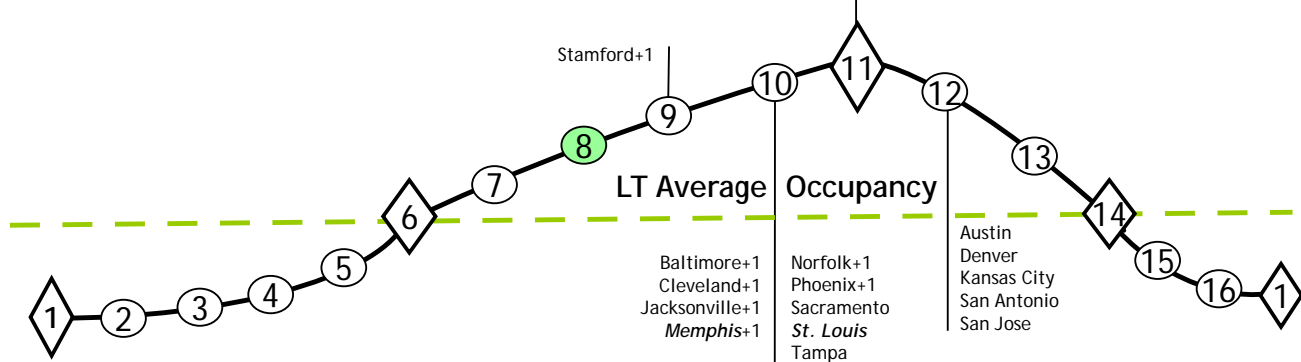
Industrial occupancies increased 0.1% in 2Q17 and increased 0.3% year-over-year. The Census Bureau reports that 8.5% of all retail sales are now online and CoStar shows that 9% of all industrial tenants are e-commerce while 23% are logistics companies and retailers. Amazon.com now leases more than 100 million SF of space – from multi-million square foot distribution facilities to small “Prime Now” spaces of less than 30,000 SF. Experts are estimating that it will take a full decade for retailers (including Walmart) to complete their e-commerce distribution networks as on-line sales grow – thus demand for industrial appears to have a long run ahead. Of the markets we cover, 73% are now at their peak cyclical occupancy levels. Our forecast model currently shows that this peak occupancy plateau could last through 1Q19. Remember that peak occupancy is also economic equilibrium where demand and supply are growing at the same rate. Industrial national average rents increased 1.4% in 2Q17 and increased 6.2% year-over-year.

Industrial Market Cycle Analysis 2nd Quarter, 2017

Phase 2 – Expansion

Phase 3 – Hypersupply

<i>Atlanta</i>	<i>East Bay</i>	<i>Los Angeles</i>	Oklahoma City+1	Richmond+1
Boston+1	Ft. Lauderdale	Miami	Orange County+1	<i>Riverside</i>
Charlotte	Hartford	Milwaukee	Orlando	Salt Lake
<i>Chicago</i>	Honolulu	Minneapolis	Palm Beach	San Diego
Cincinnati	<i>Houston</i>	Nashville	<i>Philadelphia</i> +1	San Francisco
Columbus+1	Indianapolis+1	New Orleans	Pittsburgh	Seattle
<i>Dallas FW</i>	Las Vegas	New York	Portland	Wash DC+1
<i>Detroit</i>	Long Island+1	<i>N. New Jersey</i>	Raleigh-Durham	<i>NATION</i> +1



Phase 1 – Recovery

Source: Mueller, 2017

Phase 4 – Recession

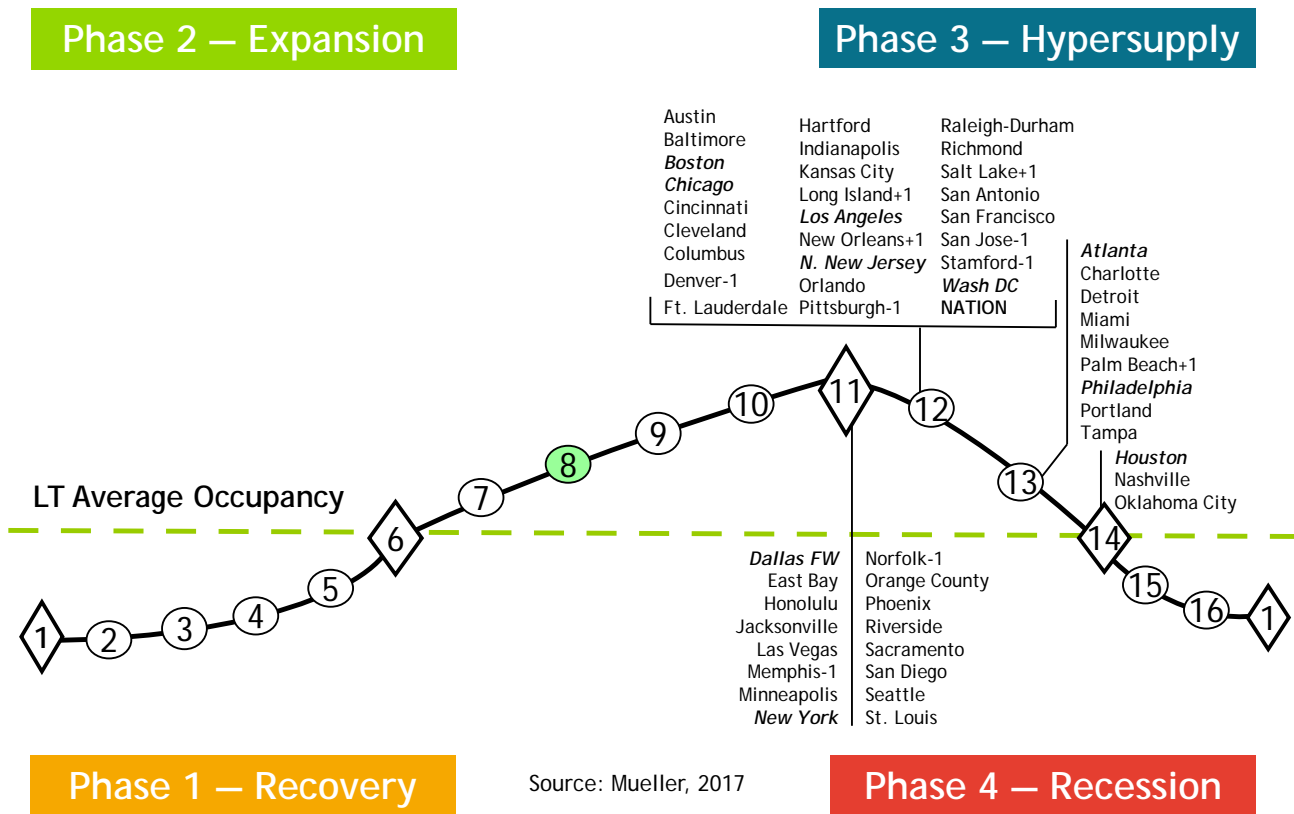
Note: The 12-largest industrial markets make up 50% of the total square footage of industrial space we monitor. Thus, the 12-largest industrial markets are in ***bold italic*** type to help distinguish how the weighted national average is affected.

Markets that have moved since the previous quarter are 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.

Apartment

The national apartment occupancy average improved 0.3% in 2017, but decreased 0.2% year-over-year. The millennial generation continues to show preference for rental housing even though their home purchases have started to accelerate. The good news is that apartment ground breakings finally declined by a few percent in 2017. If this decelerating supply trend continues, it is possible that the demand / supply growth balance could come back and allow markets to move backwards in the cycle graph towards the cyclical peak that occurred in 3Q14. While CBD apartment rent growth has stalled from numerous years of above inflation growth levels, suburban apartment rent growth has improved allowing average national apartment rent growth to improve 1.3% in 2017 and increased 2.5% year-over-year.

Apartment Market Cycle Analysis 2nd Quarter, 2017



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.

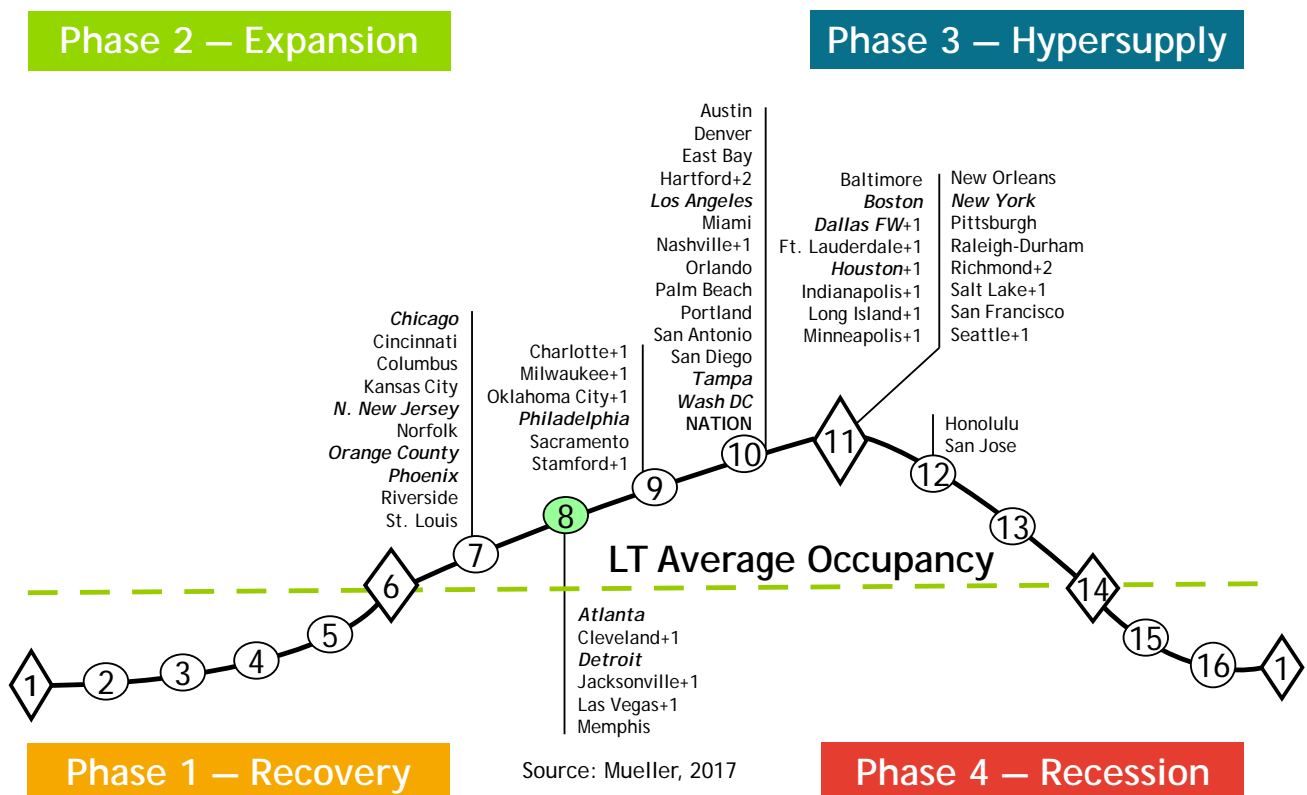
Markets that have moved since the previous quarter are now shown with a + or - symbol next to the market name and the number of positions the market has moved is also shown, i.e., +1, +2 or -1, -2. Markets do not always go through smooth forward-cycle movements and can regress, or move backward in their 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.

Retail

Retail occupancies were flat in 2Q17 and increased 0.2% year-over-year. Retail sales were up 0.6% in July and up 4.2% year-over-year. With e-commerce sales being only 8.5% of all retail sales, brick and mortar retail should not die over the next few decades. Remember that not every item should be purchased online. Human tactile desires and experiences still drive many purchase decisions. Even with Amazon.com buying Whole Foods, do not expect most consumers to buy fresh lettuce online and pay for the luxury of home delivery. Whole Foods was a strategic start to see how much wealthy consumers might pay for online grocery convenience and delivery. Most retailers are working on their e-commerce strategies and many are discussing the use of current stores as distribution centers – including using older malls for last mile distribution strategies. National average retail rents increased 0.5% in 2Q17 and increased 2.1% year-over-year.

Retail Market Cycle Analysis

2nd Quarter, 2017



Note: The 14-largest retail markets make up 50% of the total square footage of retail space we monitor. Thus, the 14-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 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.

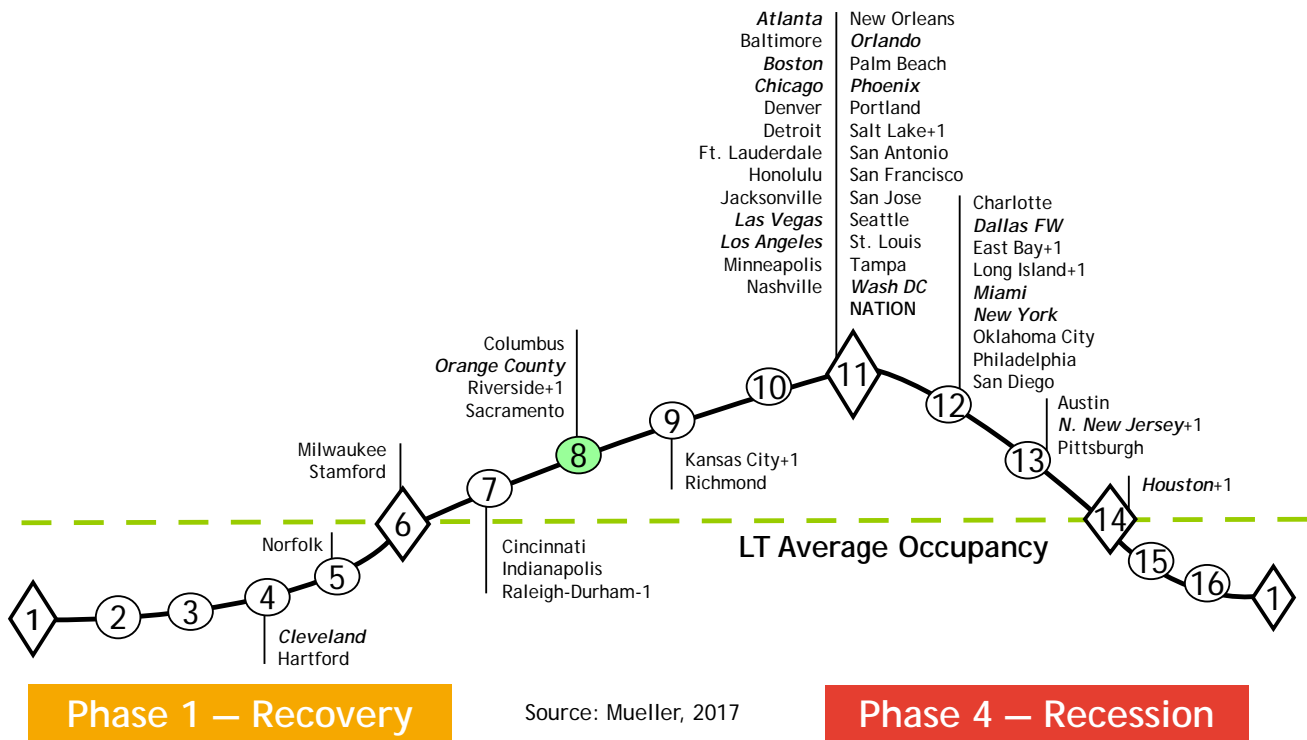
Hotel

Hotel occupancies were down 0.1% in 2Q17 and increased 0.4% year-over-year. It appears that the hotel national average cyclical occupancy rate peak may have occurred in 1Q17, but one quarter with a 0.1% decline is not a definitive turning point. Gross Domestic Product (GDP) growth is still the best indicator of hotel demand and it continues to be positive and moderate. Thus, we expect demand growth to continue for the foreseeable future. Strong supply growth pushed only two markets into the hypersupply phase of the cycle and two markets deeper into hypersupply in 2Q17. The national average hotel room rate increased 1.7% in 2Q17 and increased 3.3% year-over-year.

Hotel Market Cycle Analysis 2nd Quarter, 2017

Phase 2 – Expansion

Phase 3 – Hypersupply



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 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.

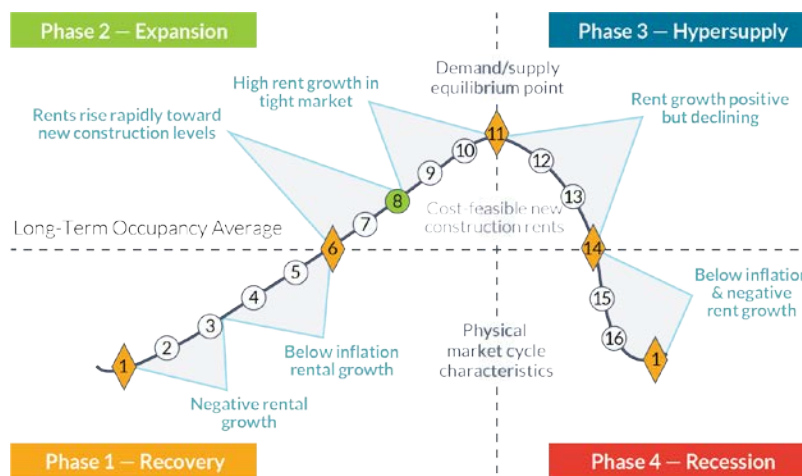
Market Cycle Analysis — Explanation

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 either 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. As a result, 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, 2017.

This research currently monitors five property types in 54 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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