DIVIDEND CAPITAL RESEARCH

Cycle Monitor — *Real Estate Market Cycles*

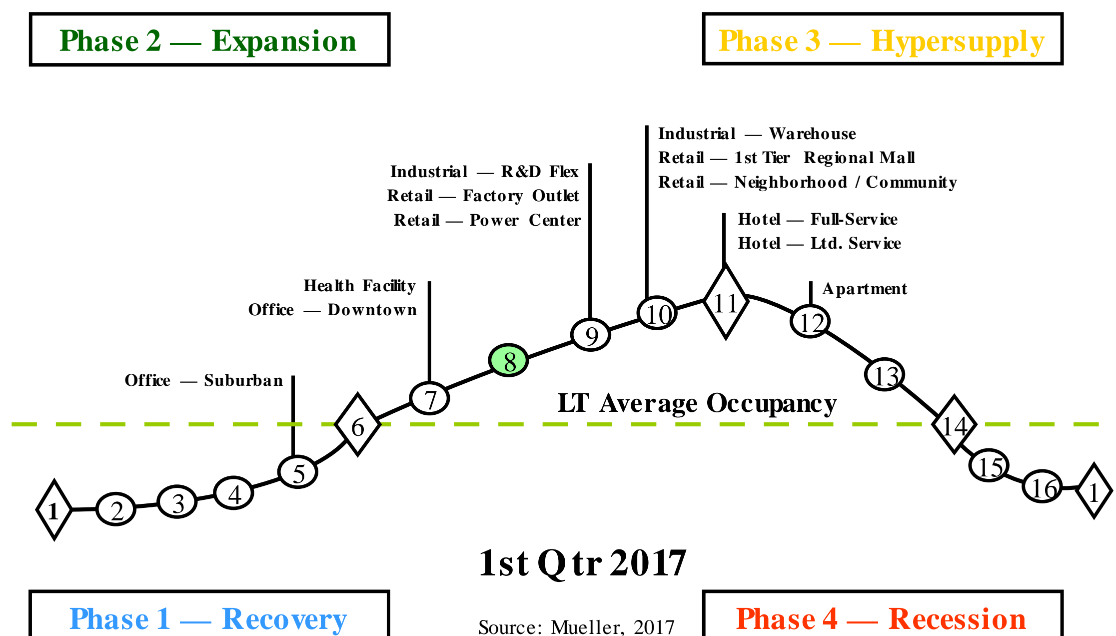
First Quarter 2017 Analysis

May 2017

Real Estate Physical Market Cycle Analysis of Five Property Types in 55 Metropolitan Statistical Areas (MSAs). Slow as we go! In 1Q17, Gross Domestic Product (GDP) growth was only 0.7% — the slowest growth in three years. However, non-residential business investment was up by 9.4% and, more importantly, the sub-category of investment in structures was up 22%. Personal consumption was up only 0.2% and is the largest component at two-thirds of overall GDP. Thus, most economists assume higher spending should happen in the second quarter of 2017. It appears the U.S. may be on a plateau of growth for the foreseeable future. Core personal consumption inflation was up 2% in 1Q17, which is the Fed's target inflation maximum. Reaching and sustaining a 3% GDP growth rate for the U.S. may be very difficult, as more baby boomers hit retirement age. Moderate growth is very good for real estate and it should continue through 2017.

Office occupancy was **flat** in 1Q17, and rents **grew** 0.4% for the quarter and 2.4% annually.
Industrial occupancy **increased** 0.3% in 1Q17, and rents **grew** 1.7% for the quarter and 7.1% annually.
Apartment occupancy was **flat** 1Q17, and rents **grew** 1.1% for the quarter and 2.4% annually.
Retail occupancy was **flat** in 1Q17, and rents **grew** 0.5% for the quarter and increased 2.7% annually.
Hotel occupancy was **flat** in 1Q17, and room rates **declined** 0.7% for the quarter and increased 3.6% annually.

National Property Type Cycle Locations



National Property Type Cycle Graph shows relative positions of sub-property types — major markets are reviewed inside.

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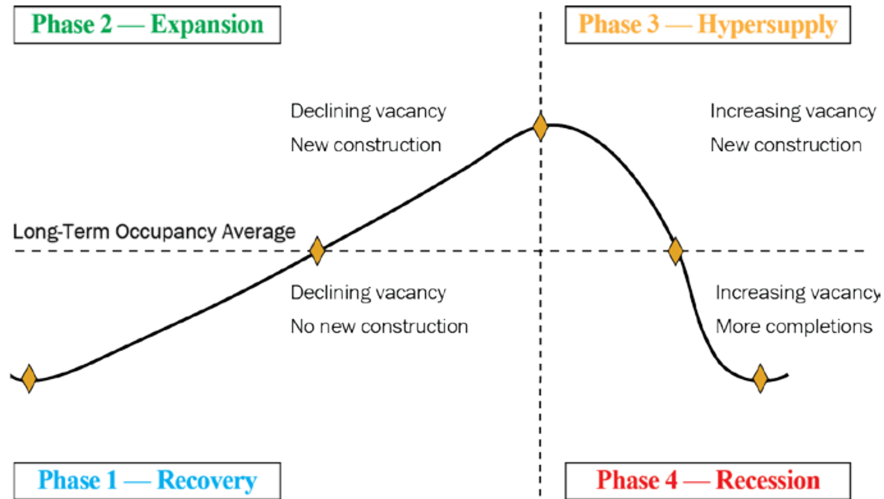
All relevant disclosures and certifications appear on page 9 of this report.

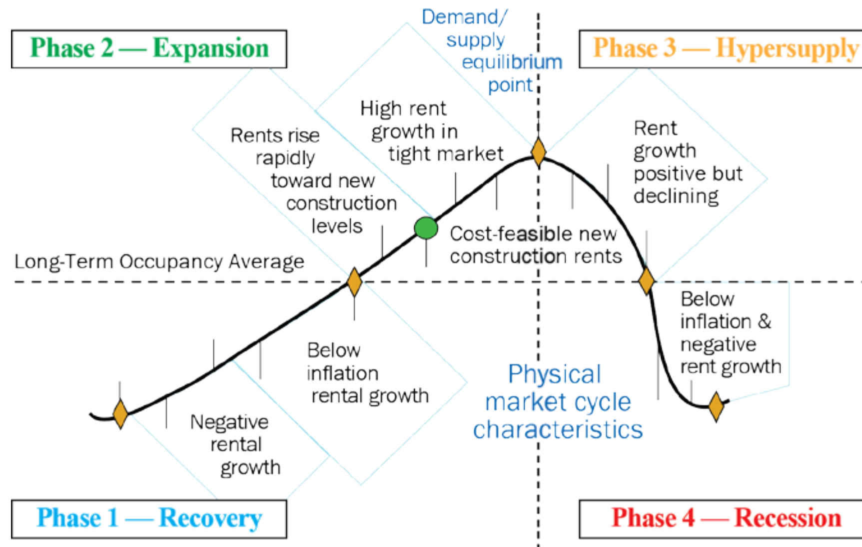
The cycle monitor analyzes occupancy movements in five property types in more than 50 MSAs. Market cycle analysis should enhance investment-decision capabilities for investors and operators. The five property type cycle charts summarize almost 300 individual models that analyze occupancy levels and rental 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, 1992.

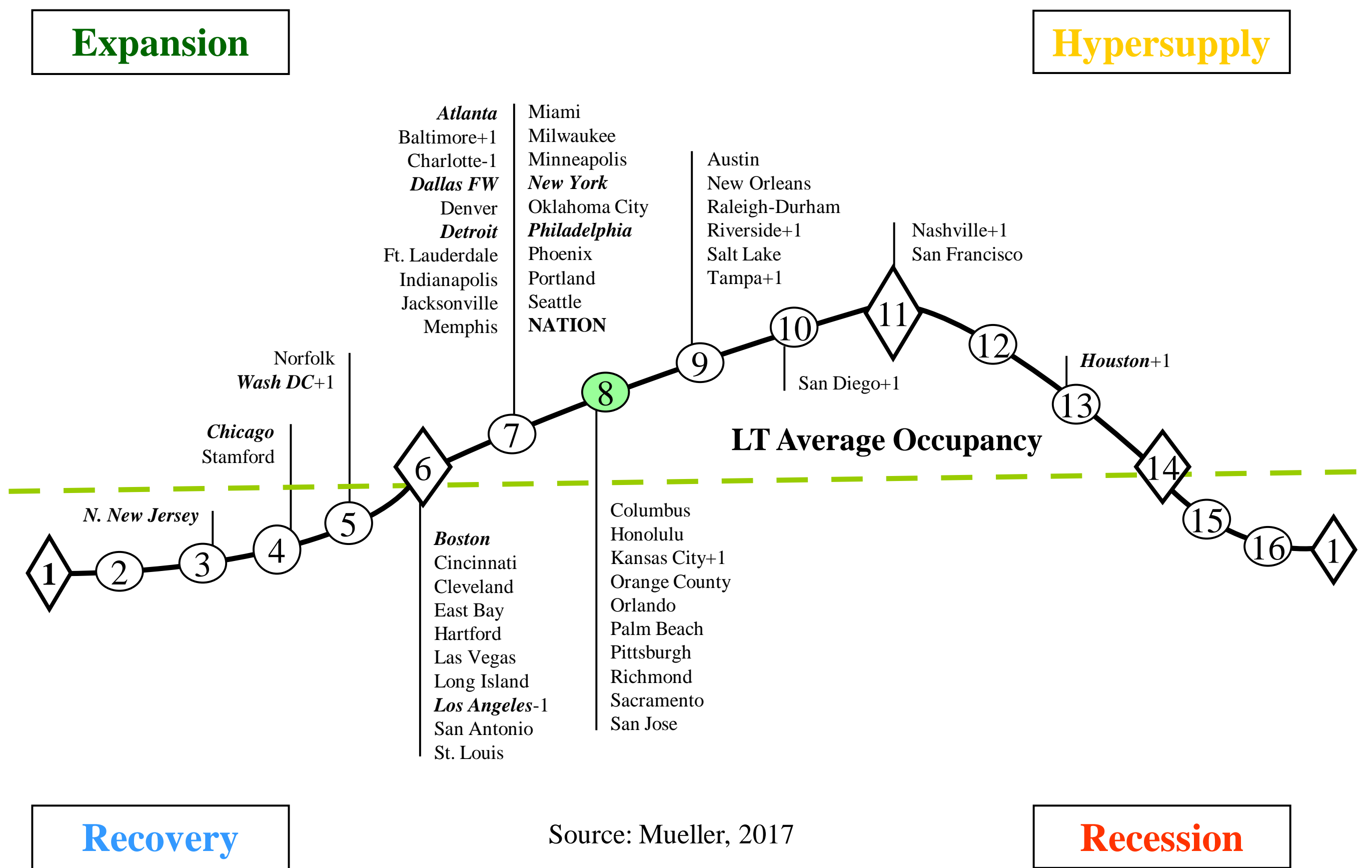
Rental growth rates can be characterized in different parts of the market cycle, as shown below.



Source: Mueller, Real Estate Finance, 1992.

OFFICE

The national office market occupancy level was flat in 1Q17 and increased 0.3% year-over-year. Absorption was only 6.6 million square feet in 1Q17, which is about half the rate seen over the last five years. This is also about half the amount of completions seen in the quarter. Washington, D.C. absorbed as much space in 1Q17 as it did for the total year of 2016. Employment growth has averaged above 220,000 people per month for the quarter and should provide good demand for the entire year if it can be sustained. Supply is variable by market, but mostly at reasonable levels. Average national rents increased 0.4% in 1Q17 and produced a 2.4% increase year-over-year.



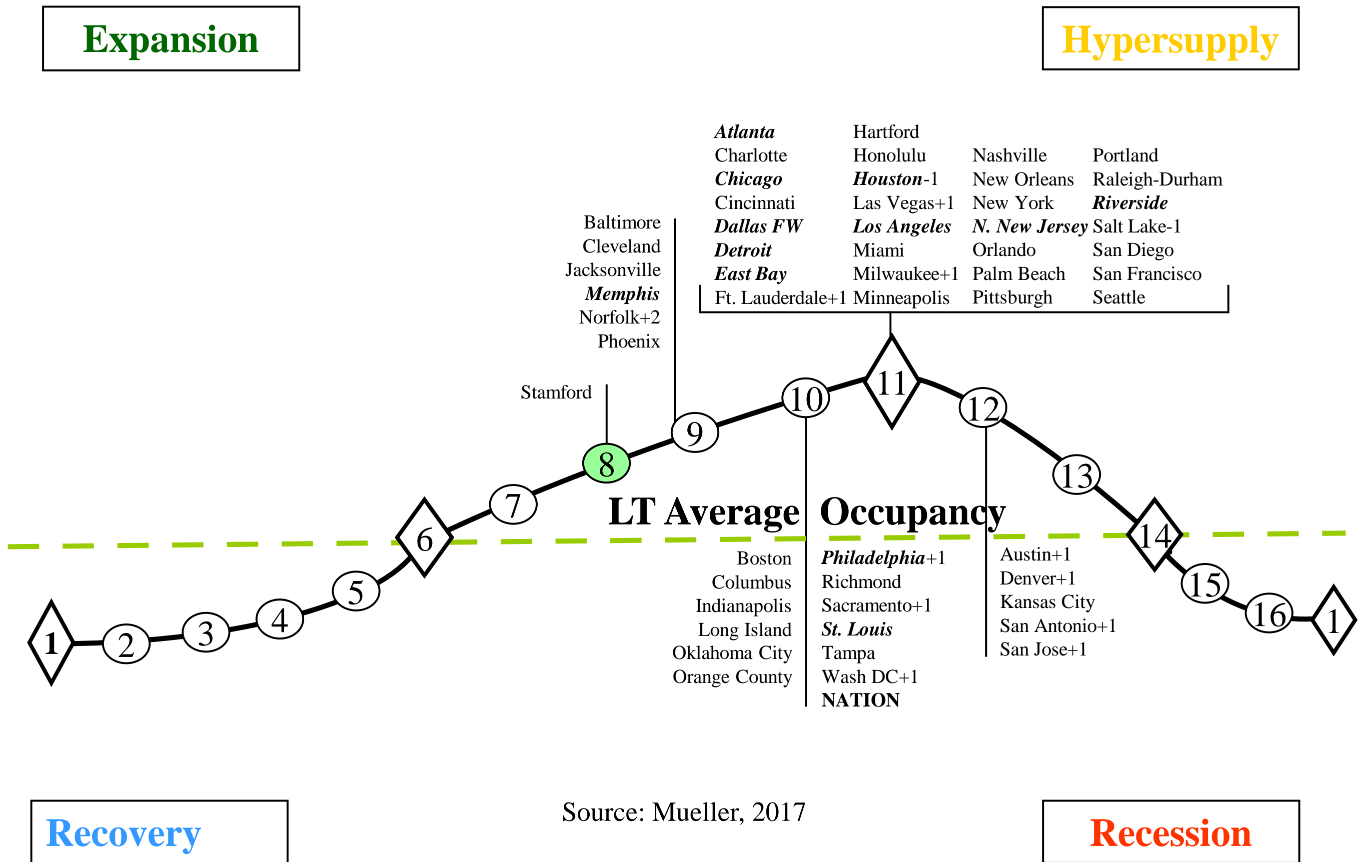
Note: The 11-largest office markets make up 50% of the total square footage of office space we monitor. Thus, the 11-largest office markets are in ***bold italic*** type to help distinguish how the weighted national average is affected.

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 0.3% in 1Q17 and increased 0.3% year-over-year. Absorption of space was above 50 million square feet for the tenth consecutive quarter with almost 20 markets absorbing more than one million square feet. E-commerce hubs like Atlanta, Riverside, Dallas and Chicago led the way. There are more than 50 mega projects under construction that are one million square feet or more across the U.S. It appears industrial is reaching a peak plateau in occupancy that could last for the next two years due to e-commerce demand. Industrial national average rents increased 1.7% in 1Q17 and increased 7.1% year-over-year.

Industrial Market Cycle Analysis
1st Quarter, 2017



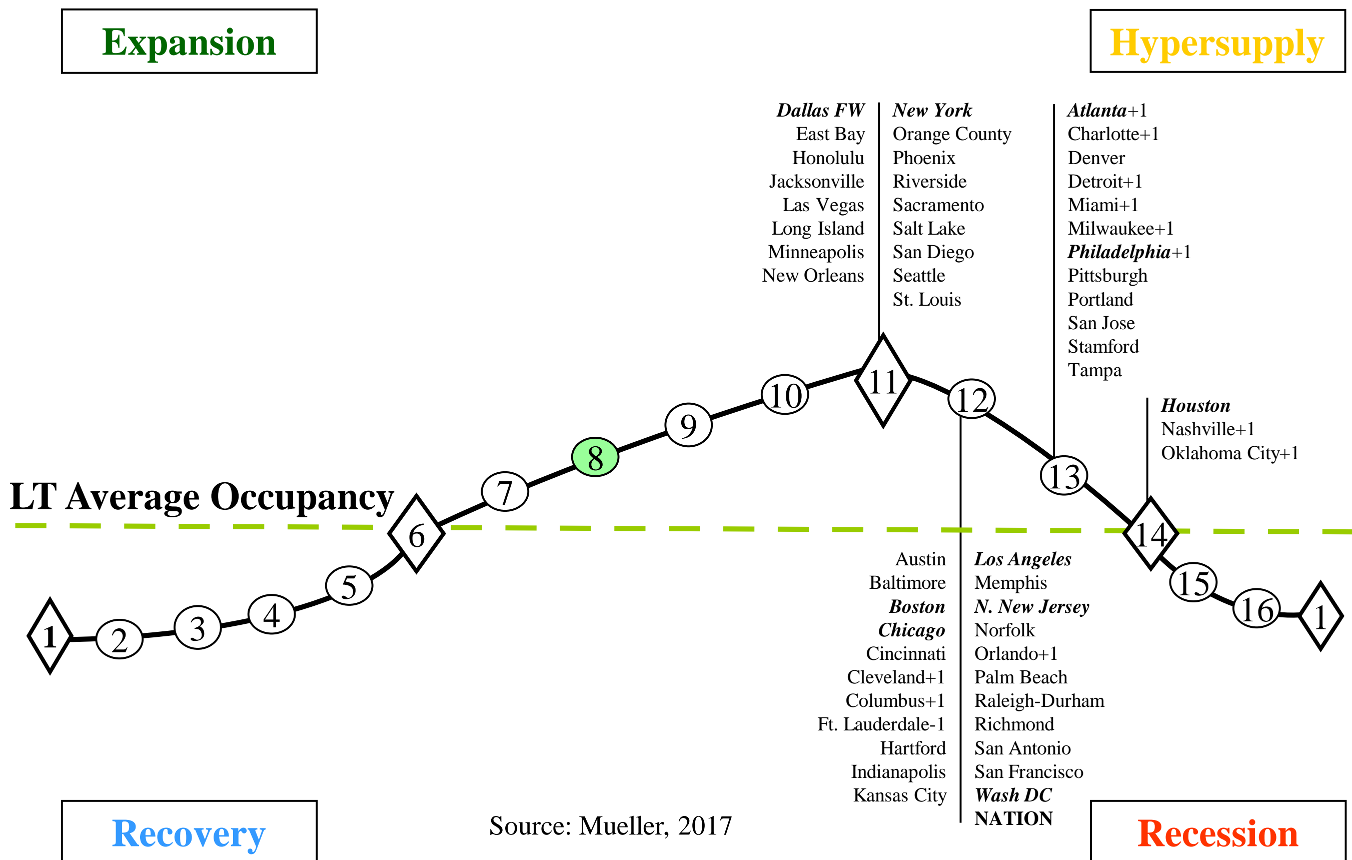
Source: Mueller, 2017

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 was flat in 1Q17 and decreased 0.6% year-over-year. Positive employment growth of mainly Millennial generation workers is the demand driver for apartments and the monthly average employment growth was more than 220,000 in 1Q17. Strong new construction completions continued in most analyzed markets, creating the hypersupply phase of the cycle. We do not forecast this continued oversupply to reverse course over the next year. There are too many projects in the pipeline that should complete in the next 12 months. Average national apartment rent growth increased 1.1% in 1Q17, and increased 2.4% year-over-year, a clear deceleration in rent growth.

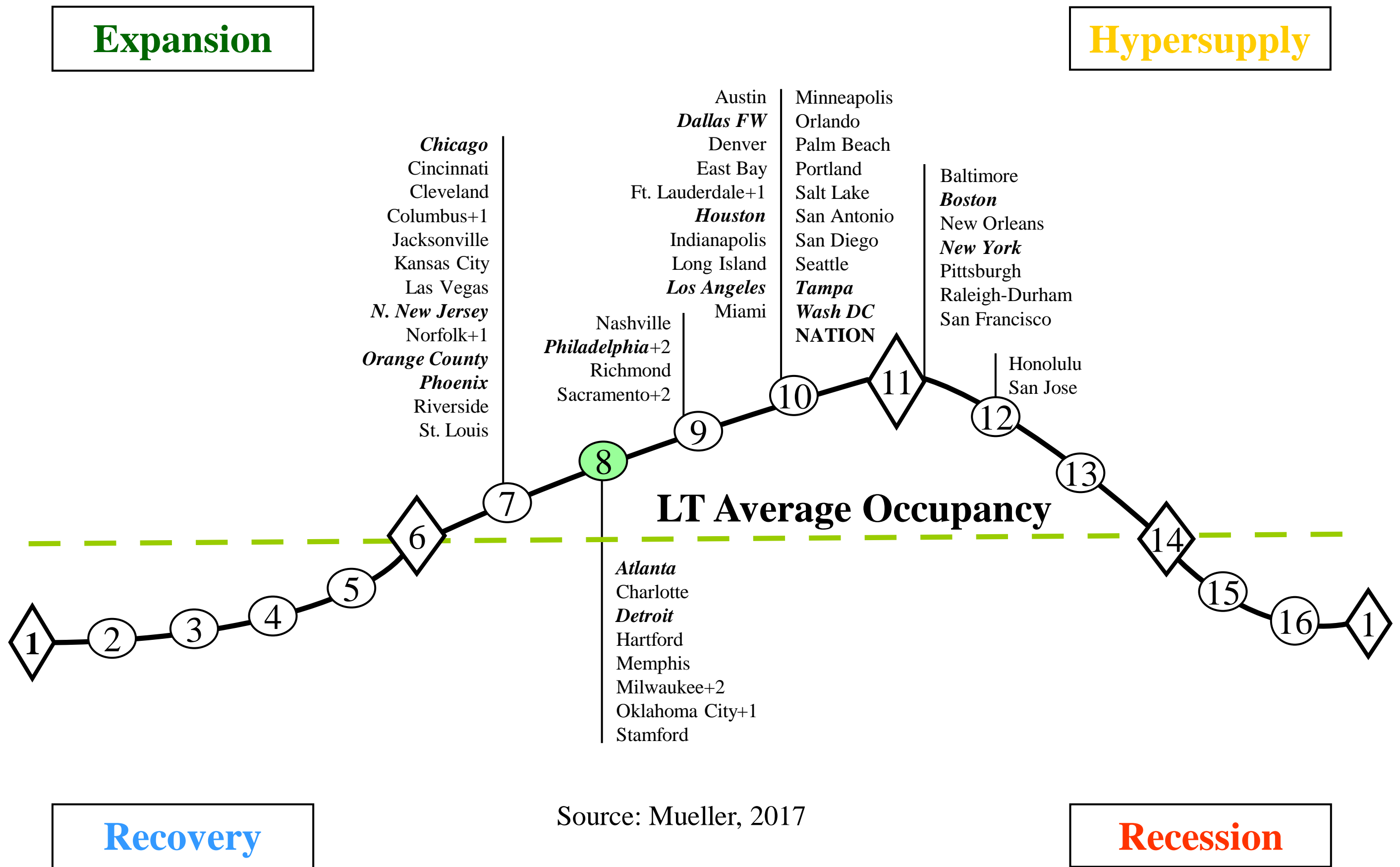


Note: The 10-largest apartment markets make up 50% of the total square footage of multifamily space we monitor. Thus, the 10-largest apartment markets are in ***bold italic*** type to help distinguish how the weighted national average is affected.

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 were flat in 1Q17 and increased 0.5% year-over-year. Retail sales were weak in the first quarter with the Easter holiday being later in the year. Department store closings continue to be backfilled by experience-based retailers and restaurants in the A-quality malls. Second-tier malls continue to lose occupancy. Look for repurposing and reuse plans in these B-quality and C-quality malls. Grocery-anchored community centers appear to be the only fortress retail type in a constantly changing retail landscape. New construction continues to run at very low levels, providing good demand / supply balance. National average retail rents increased 0.5% in 1Q17 and increased 2.7% year-over-year.

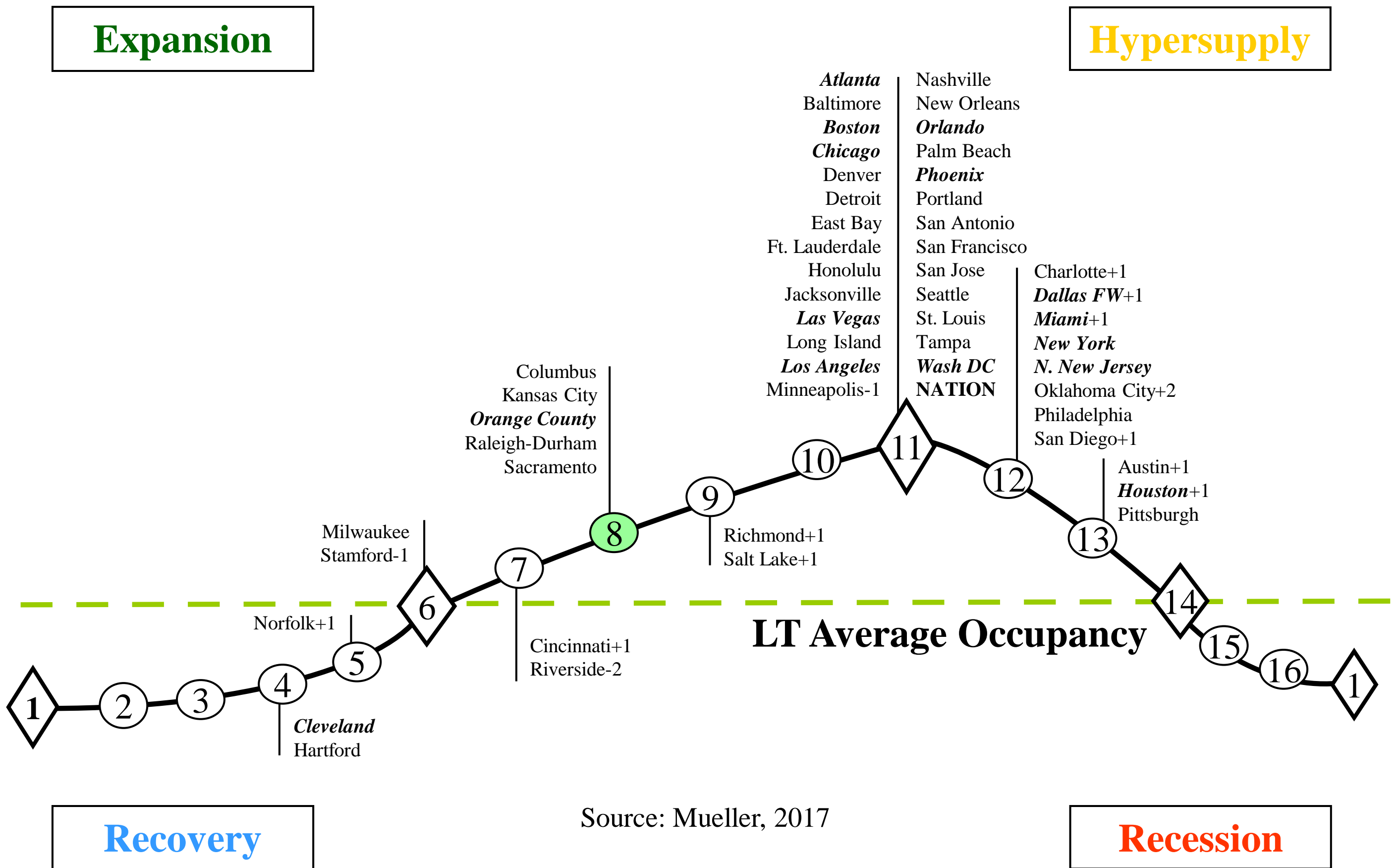


Note: The 14-largest retail markets make up 50% of the total square footage of retail space we monitor. Thus, the 14-largest retail markets are in ***bold italic*** type to help distinguish how the weighted national average is affected.

Markets that have moved since the previous quarter are 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 were flat in 0.1% in 1Q17 and increased 0.7% year-over-year. Hotels maintained their national average *cyclical occupancy rate peak* of 72.3% for a second quarter, an all-time historic high over the last 30 years. Demand growth continued, driven by stronger employment growth and moderate GDP growth in 1Q17. We are seeing stronger completions in many markets, pushing five additional markets into the hypersupply phase of the cycle and two markets deeper into hypersupply. The national average hotel room rate declined 0.7% in 1Q17, but increased 3.6% year-over-year.



Note: The 15-largest hotel markets make up 50% of the total square footage of hotel space that we monitor. Thus, the 15-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.

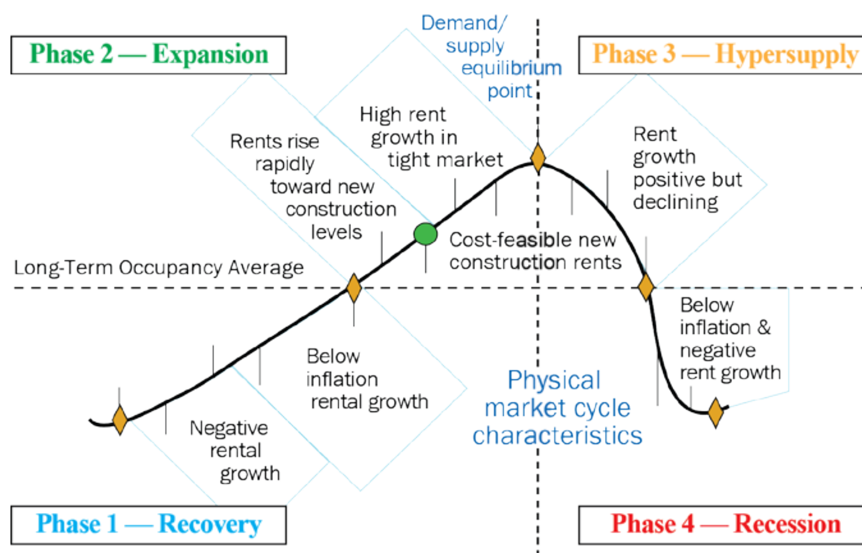
MARKET CYCLE ANALYSIS — Explanation

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 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, 2016.

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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