



Black Creek Research

Cycle Monitor – Real Estate Market Cycles
First Quarter 2018 Analysis

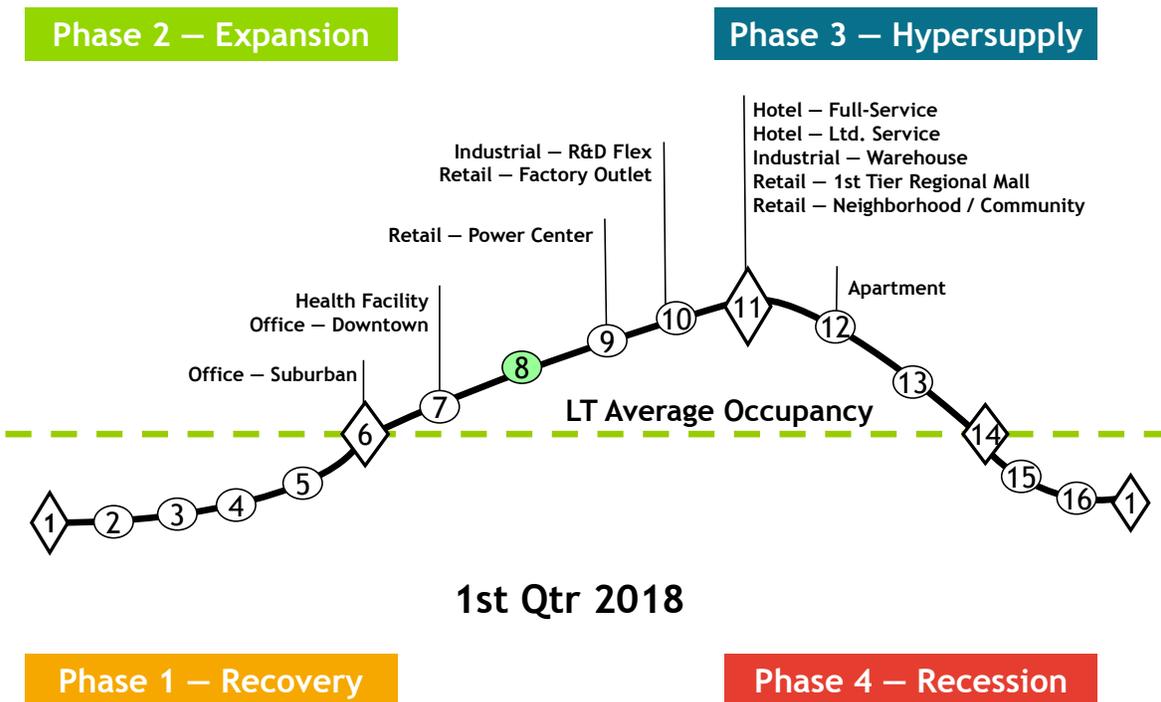
Real estate physical market cycle analysis of five property types in 54 Metropolitan Statistical Areas (MSAs).

Equilibrium – “a state of balance, due to the equal action of opposing forces.” This concept can easily apply to the U.S. economy and to many property types in many cities across the United States. The moderate (or slow) growth in demand since 2010 has been met with a relatively equal moderate

growth in supply. As always some cities lead and some lag the national average, based upon their economic-base industries and their attractiveness to employees as a place to live. U.S. real estate has had long-term secular growth for more than 500 years, with increasing incomes and values, but cyclical swings (some large, some small). It appears the United States is in a moderate, long-term upcycle today.

- Office occupancy was flat in 1Q18 and rents grew 0.4% for the quarter and 1.7% annually
• Industrial occupancy was flat in 1Q18 and rents grew 1.5% for the quarter and 6.0% annually
• Apartment occupancy increased 0.1% in 1Q18 and rents grew 1.3% for the quarter and 2.6% annually
• Retail occupancy was flat in 1Q18 and rents grew 0.2% for the quarter and 1.8% annually
• Hotel occupancy was flat in 1Q18 and room rates grew 1.9% for the quarter and 3.3% annually

National Property Type Cycle Locations



1st Qtr 2018

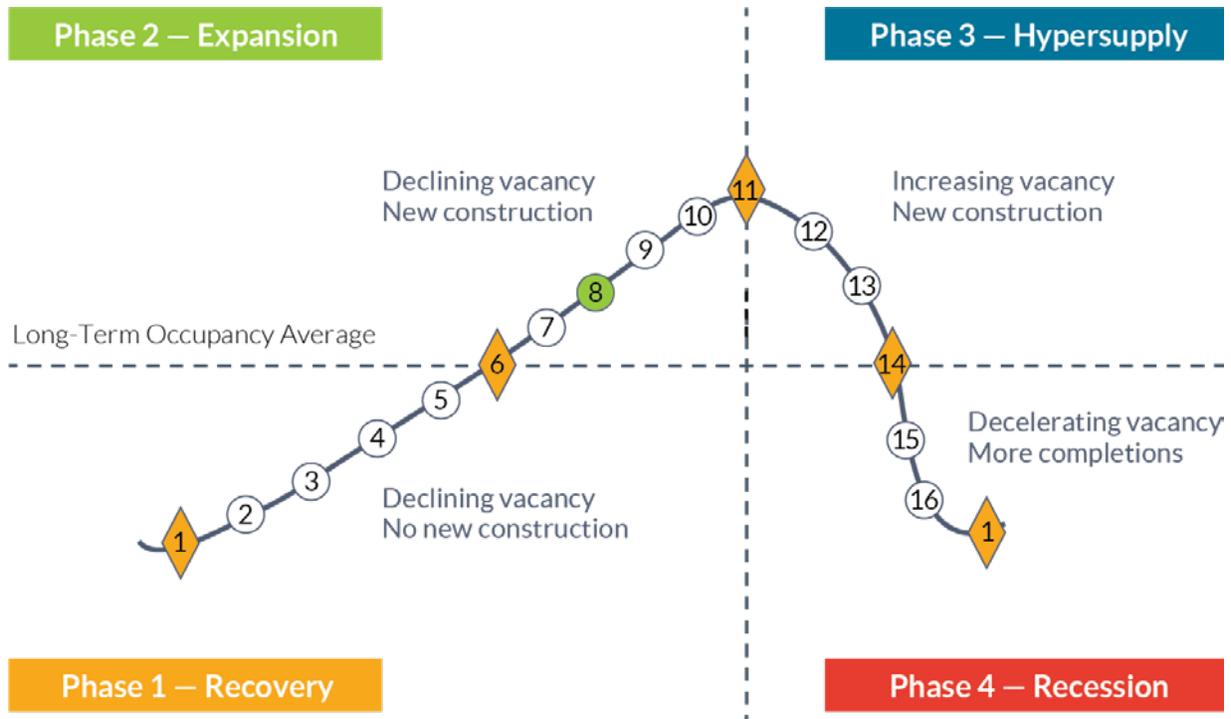
Source: Mueller, 2018

National Property Type Cycle Forecast graph shows relative positions of sub-property types.

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 270 individual models that analyze occupancy levels and rental growth rates to provide the foundation for long-term investment success. Commercial real estate markets are

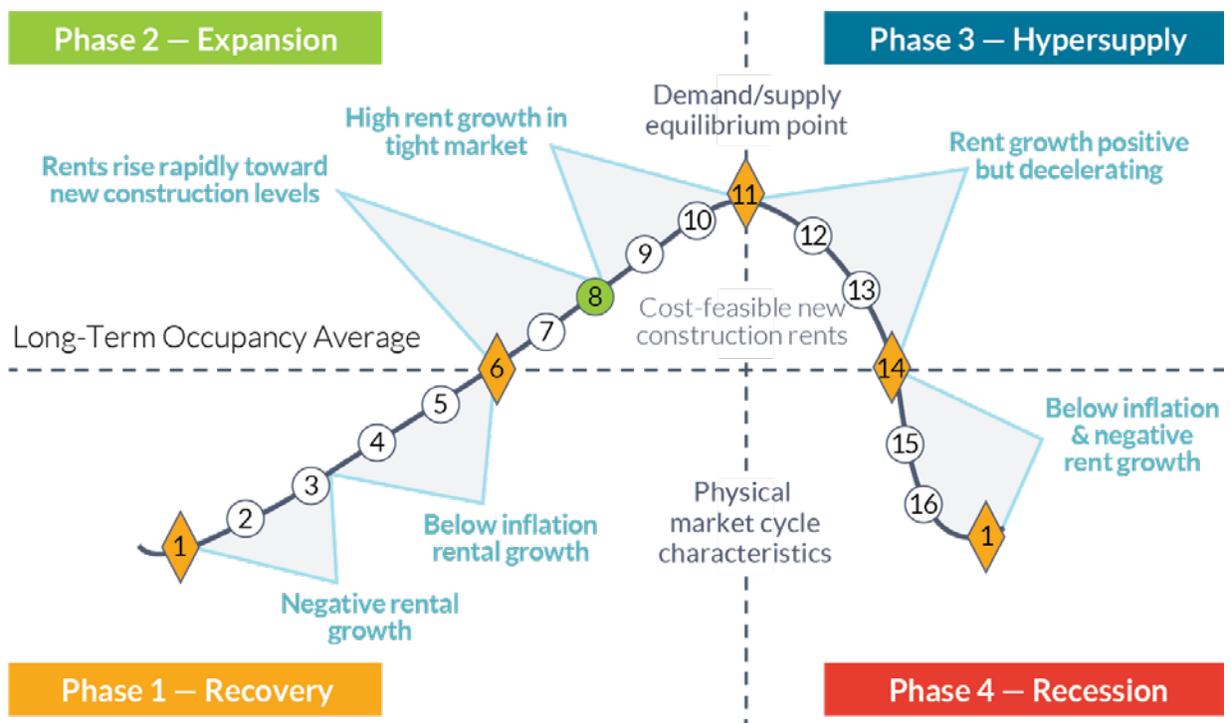
cyclical due to the lagged relationship between demand and supply for physical space. The long-term occupancy average is different for each market and each property type. **Long-term occupancy average** is a key factor in determining rental growth rates — a critical indicator of commercial real estate returns.

Market Cycle Quadrants



Source: Mueller, Real Estate Finance, 1996

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



Source: Mueller, Real Estate Finance, 1996

Office

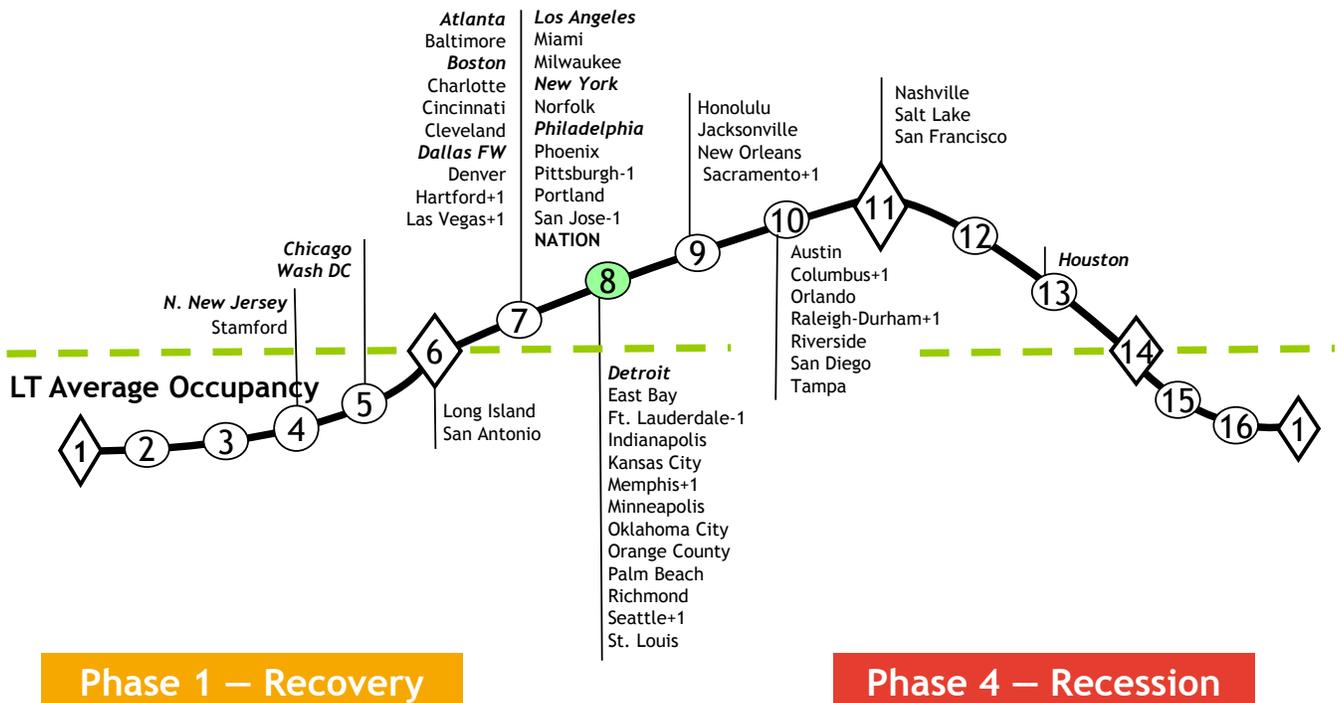
The national office market occupancy level remained flat in 1Q18 and increased 0.1% year-over-year. Good demand helped to decrease concessions from landlords in tech employment cities, while other cities saw concessions rise an average of 3.5%. Many landlords are also dedicating space for

short-term leases to small start up companies to compete with WeWork and other short-term flex leasing companies. Supply growth continues to be moderate, providing an equilibrium force in many markets. Average national rents increased 0.4% in 1Q18 and produced a 1.7% increase year-over-year.

Office Market Cycle Analysis 1st Quarter, 2018

Phase 2 – Expansion

Phase 3 – Hypersupply



Source: Mueller, 2018

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 were flat in 1Q18 and were unchanged year-over-year — a sign of equilibrium in demand and supply as shown by peak point #11 in the cycle graph demonstrating demand and supply growing at the same rate. There are currently no signs of hyper-supply in the future from either a decline in demand or a large increase in supply above needed

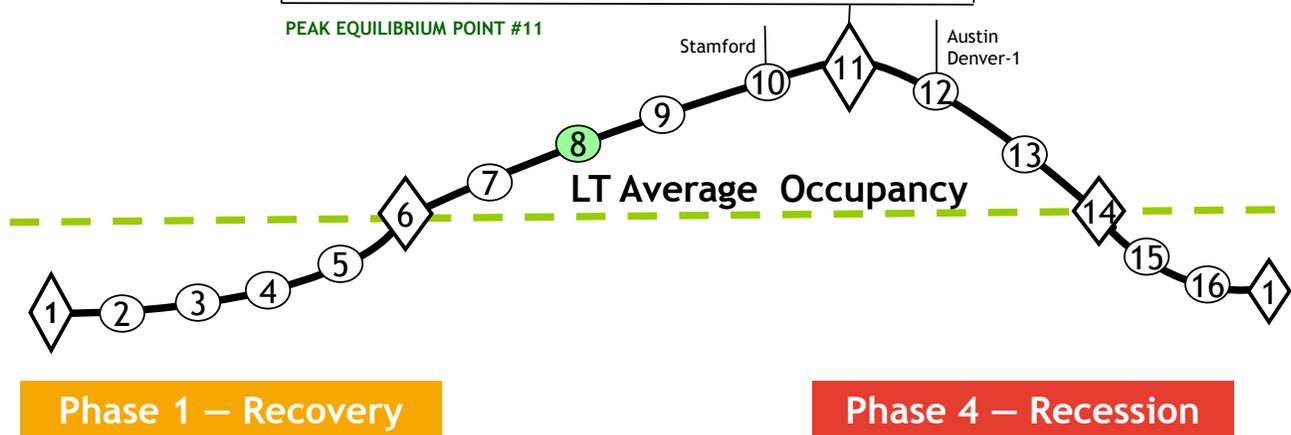
levels. Many industrial experts believe it could take 10 years to build out the needed e-commerce storage space for retailers. The continued moderate growth of the U.S. economy could provide a peak equilibrium point #11 situation for many years to come. Industrial national average rents increased 1.5% in 1Q18 and increased 6.0% year-over-year.

Industrial Market Cycle Analysis 1st Quarter, 2018

Phase 2 — Expansion

Phase 3 — Hypersupply

| | | | | |
|------------------|--------------------|----------------------|---------------------|------------------|
| <i>Atlanta</i> | Ft. Lauderdale | Miami | Palm Beach | San Antonio |
| Baltimore | Hartford | Milwaukee | <i>Philadelphia</i> | San Francisco |
| Boston | Honolulu | Minneapolis | Phoenix | San Jose |
| Charlotte | <i>Houston</i> | Nashville | Pittsburgh | Seattle |
| <i>Chicago</i> | Indianapolis | New Orleans | Portland | <i>St. Louis</i> |
| Cincinnati | Jacksonville | New York | Raleigh-Durham | Tampa |
| Cleveland | Kansas City | Norfolk | Richmond | Wash DC |
| Columbus | Las Vegas | <i>N. New Jersey</i> | <i>Riverside</i> | NATION |
| <i>Dallas FW</i> | Long Island | Oklahoma City | Sacramento | |
| <i>Detroit</i> | <i>Los Angeles</i> | Orange County | Salt Lake | |
| <i>East Bay</i> | <i>Memphis</i> | Orlando | San Diego | |



Source: Mueller, 2018

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.

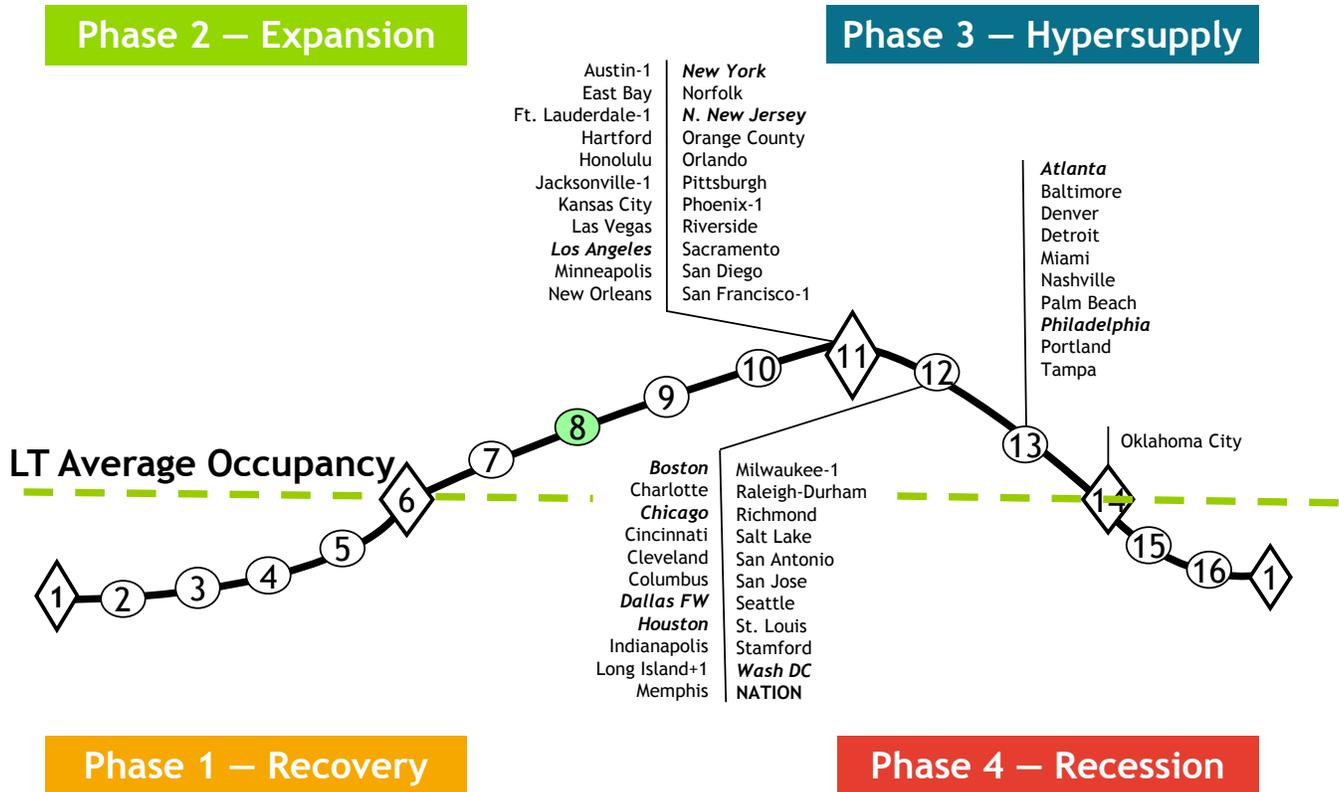
Apartment

The national apartment occupancy average increased 0.1% in 1Q18 but was flat year-over-year. Demand continued its moderate growth rate, while supply growth slowed enough in six markets to allow their occupancy levels to rise and improve their position on the cycle chart. Five of the six markets actually returned to their peak equilibrium

occupancy levels. Higher interest rates and rising construction costs should help to slow new apartment supply in the future, allowing markets to come back into equilibrium. Average national apartment rent growth increased 1.3% in 1Q18 and 2.6% year-over-year.

Apartment Market Cycle Analysis

1st Quarter, 2018



Source: Mueller, 2018

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.

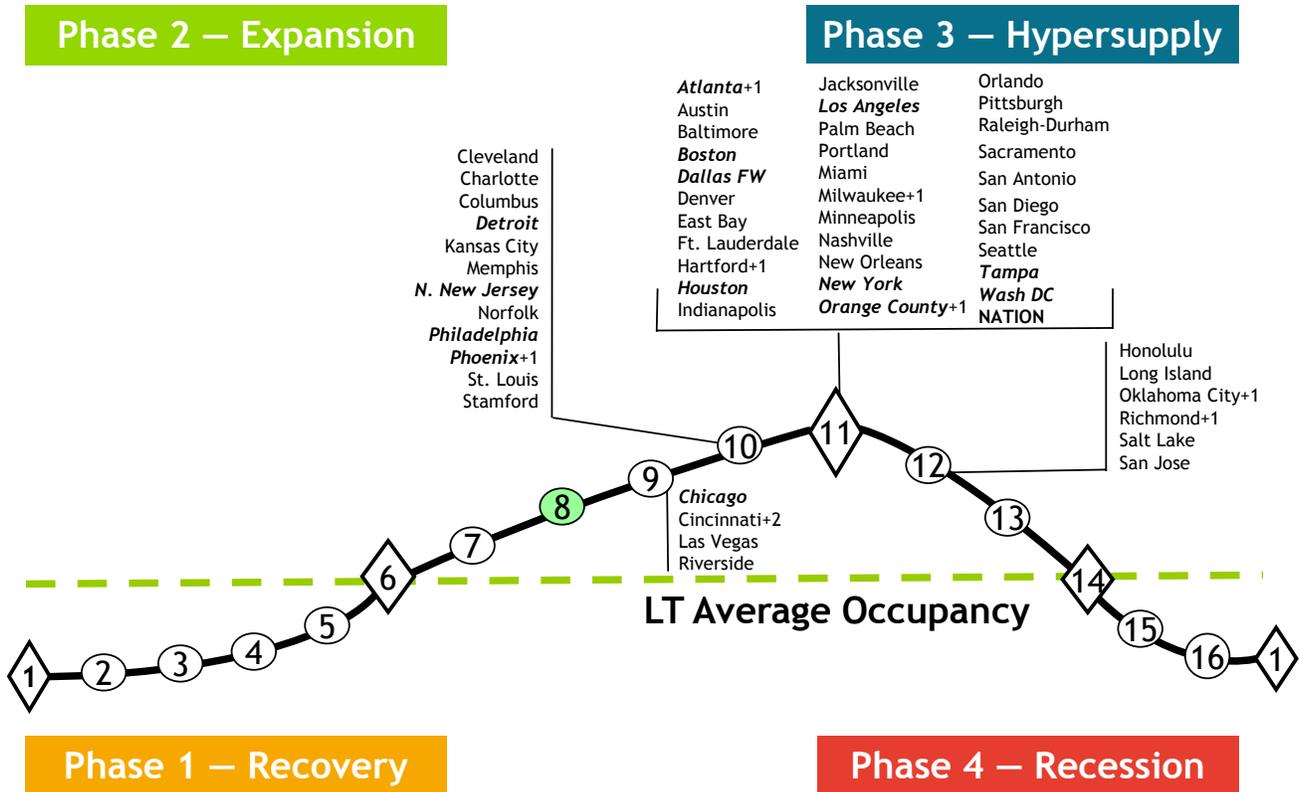
Retail

Retail occupancies were flat in 1Q18 and were flat year-over-year. This is a sign of equilibrium that is also seen in the national average retail occupancy being at point #11 on the cycle graph. With most of the cities at peak point #11 and most of the others just behind or ahead by one point, a demand supply balance is quite apparent.

New retail concepts are filling the space of failed retailers and more e-commerce companies are renting brick and mortar stores for multiple reasons, including Amazon. Very low levels of new construction continue, which supports market balance. National average retail rents increased 0.2% in 1Q18 and 1.8% year-over-year.

Retail Market Cycle Analysis

1st Quarter, 2018



Source: Mueller, 2018

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.

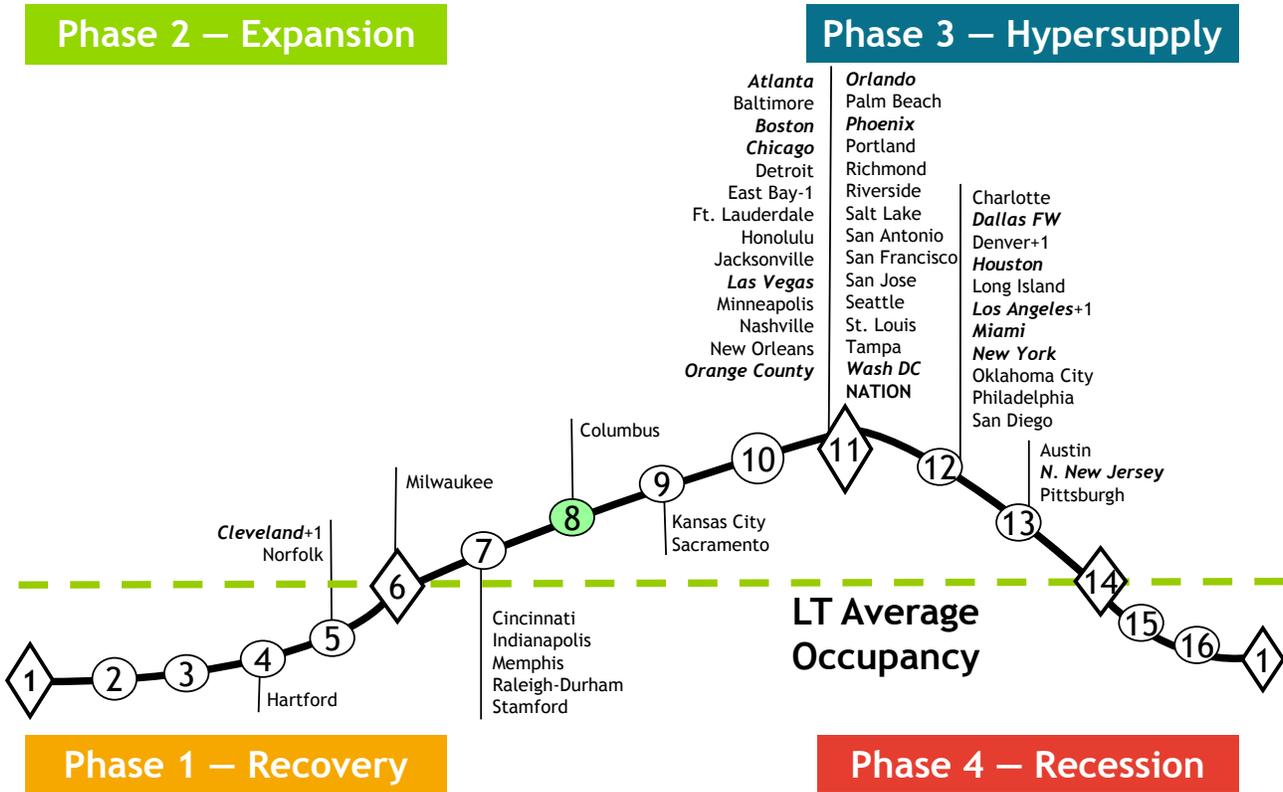
Markets that have moved since the previous quarter are now shown with a + or - symbol next to the market name and the number of positions the market has moved is also shown, i.e., +1, +2 or -1, -2. Markets do not always go through smooth forward-cycle movements and can regress, or move backward in their 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 flat in 1Q18 and increased 0.2% year-over-year. Equilibrium occupancy is evident as the national hotel average remains at peak point #11 in the cycle. Business and leisure travel demand continues to grow moderately, and this demand is being met by moderate supply growth in most

cities. There appears to be an increase in micro-size hotel units in some major cities where room rates are higher. The national average hotel room rate increased 1.9% in 1Q18 and 3.3% year-over-year.

Hotel Market Cycle Analysis 1st Quarter, 2018



Source: Mueller, 2018

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.

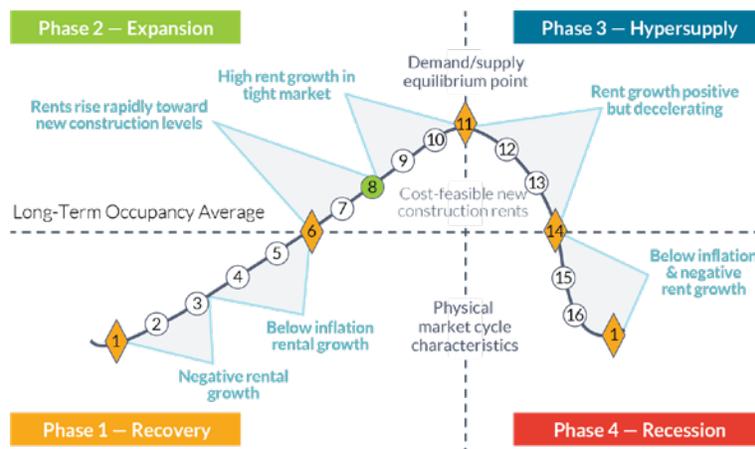
Market Cycle Analysis – Explanation

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, 1996

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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