UNIVERSITY of DENVER
DANIELS COLLEGE OF BUSINESS
Franklin L. Burns School of Real Estate & Construction Management

VAN KEUREN
FAMILY OFFICE REAL ESTATE™
INSTITUTE
EXECUTIVE EDUCATION

Mueller

Real Estate Market Cycle Monitor
Third Quarter 2021 Analysis

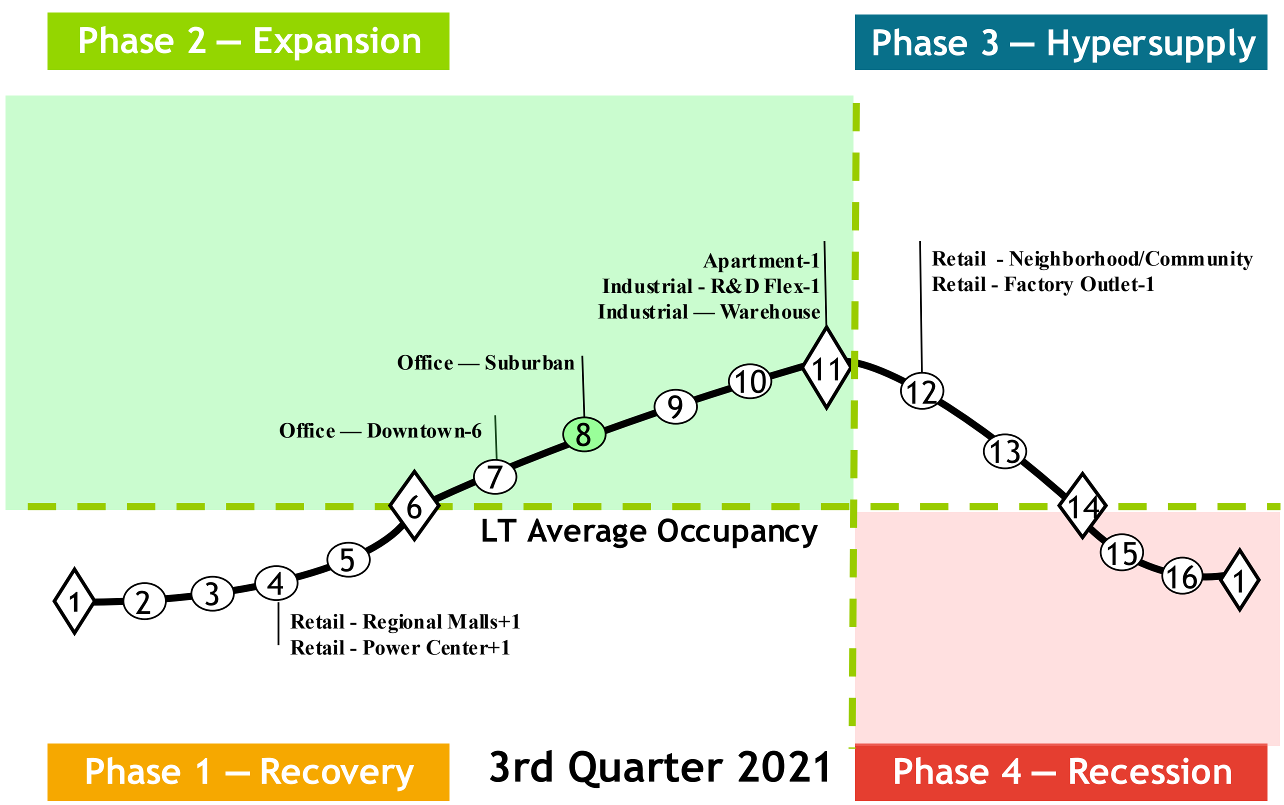
November 2021

The Physical Market Cycle Analysis of 4 Property Types in 54 Metropolitan Statistical Areas (MSAs).

GDP growth slowed to 2% in 3Q21 while inflation rose at over 4% due to supply chain disruption and strong demand for employment driving wages up. My Uber driver in Las Vegas was a hard-working immigrant who left his $21 per hour construction job three years ago, because he could make more driving Uber and was now being offered $400 bonuses if he drove Friday-Saturday-Sunday. Thus, one should expect higher construction labor costs for the near future. Real estate demand improved further in 3Q21 and is expected to continue as the economy opens further.

Office occupancy **was flat** in 3Q21, and rents **increased 0.4%** for the quarter but were down 0.1% annually.
Industrial occupancy **improved 0.5%** in 3Q21, and rents **grew** 2.4% for the quarter and were up 7.2% annually.
Apartment occupancy **improved 0.6**% in 3Q21, and rents **grew** 3.3% for the quarter, and up 11.3% annually.
Retail occupancy **improved 0.2%** In 3Q21, and rents **grew** 0.7% for the quarter and were up 2.3% annually.

National Property Type Cycle Locations



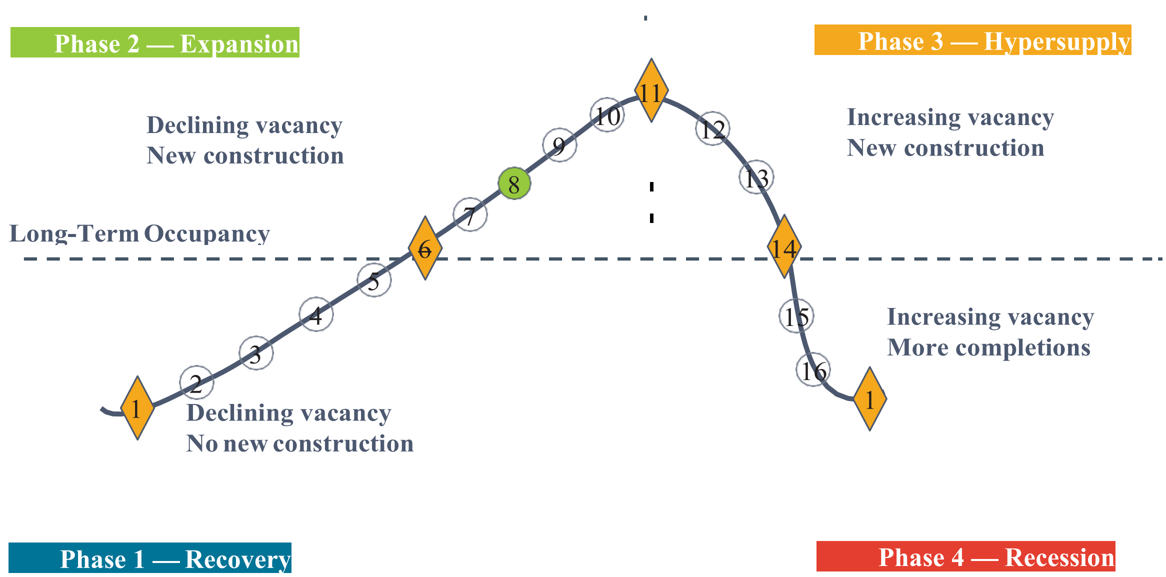
Source: Mueller, 2021

The National Property Type Cycle Locations graph shows relative positions of the sub-property types.

Glenn R. Mueller, Ph.D. – Professor – Denver University - Burns School RECM- glenn.mueller@du.edu
Academic Director - Family Office Real Estate Institute – glenn.mueller@fore.institute

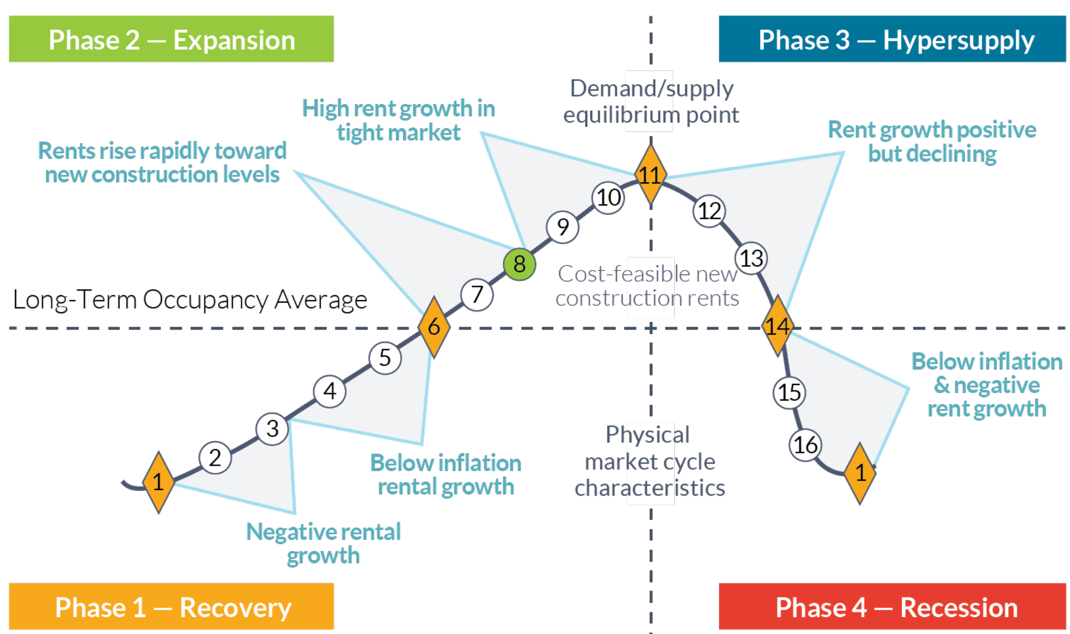
The cycle monitor analyzes occupancy movements in four property types in 54 MSAs. Market cycle analysis should enhance investment-decision capabilities for investors and operators. The five property type cycle charts summarize almost 300 individual models that analyze occupancy levels and rental growth 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 income and thus returns.

Market Cycle Quadrants



Source: Mueller, Real Estate Finance, 1996.

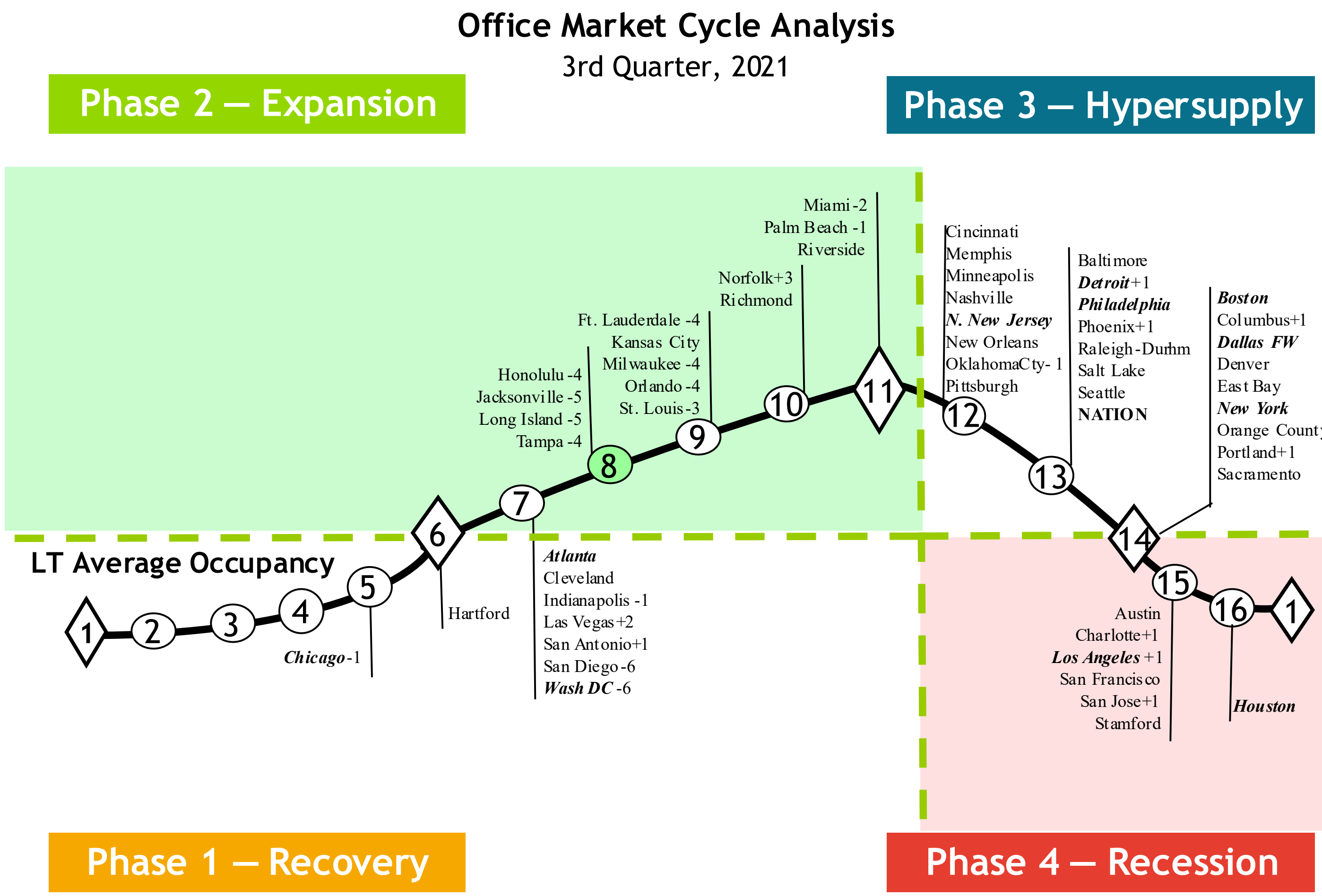
Rental growth rates can be characterized in different parts of the market cycle, as shown below.



Source: Mueller, Real Estate Finance, 1996.

Office

The national office market occupancy level was flat in 3Q21 and was down 1.4% year-over-year. Many second-tier markets in the sunbelt and west appear to have turned the corner with leasing activity increasing by 8% providing occupancy increases, while many top tier "gateway" markets were still seeing occupancy decreases. The national average occupancy level still remains in the Hypersupply phase of the cycle at point #13. Many tenants are choosing class A properties with lots of amenities, as firms try to make coming back to work as attractive as possible for employees. Newer properties are also commanding a rent premium almost twice the pre-pandemic premium rates offered. CBD rents are also rising faster than suburban rents. Average national rents improved 0.4% in 3Q21 but were down 0.1% year-over-year.



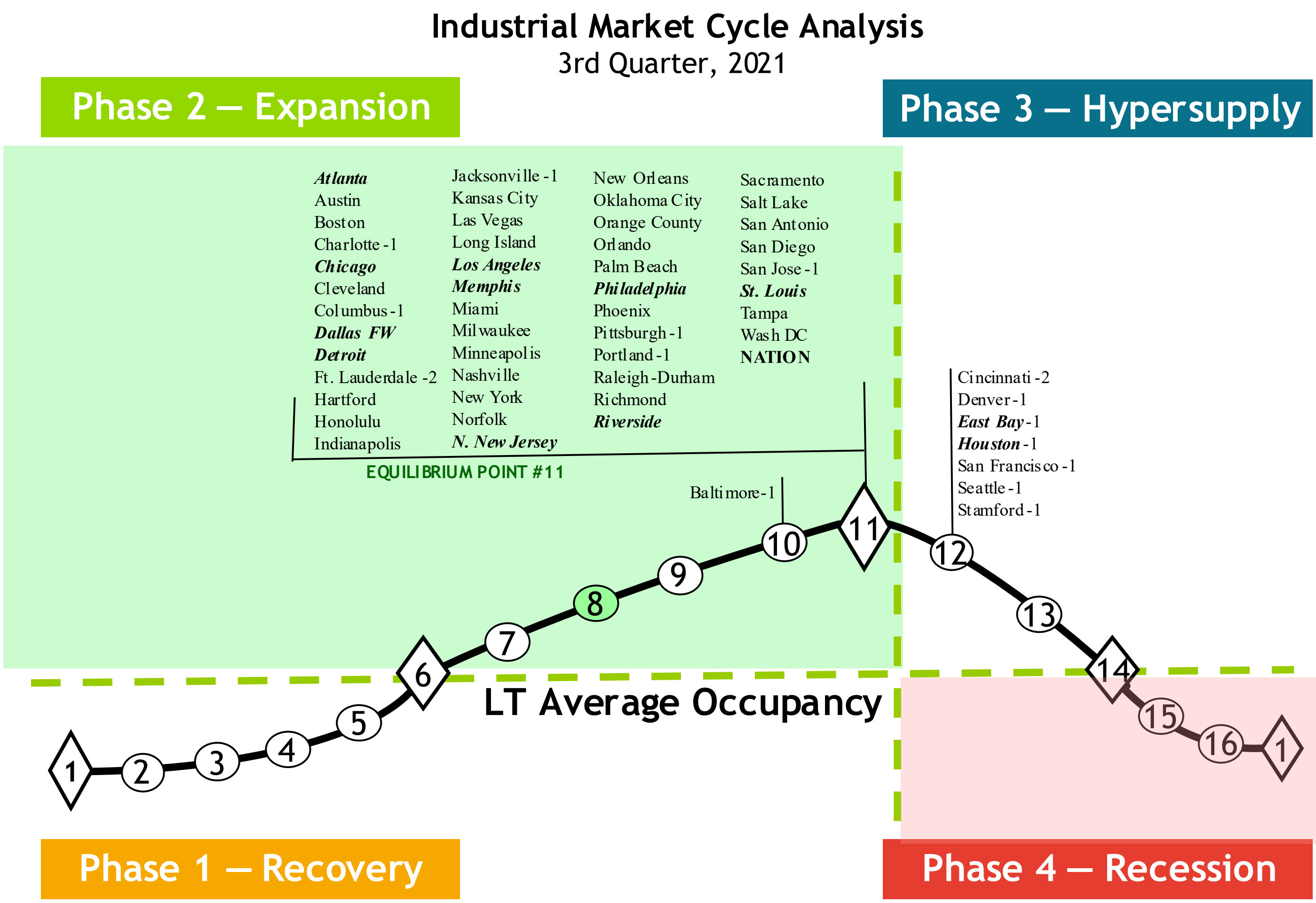
Source: Mueller, 2021

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 0.5% in 3Q21 and were up 1.0% year-over-year pushing the historic peak occupancy even higher than ever before. The demand surge from manufacturers expanding and reshoring plus retailers expanding internet sales continues. Supply chain problems have caused tenants to have an increased sense of the need to hold more "just in case" inventory to keep their business operations running. Strong demand growth and constrained supply growth from labor and materials shortages should continue to push occupancies higher. Owners pushed rents up 2.4% in 3Q21, creating a 7.2% increase year-over-year.



Source: Mueller, 2021

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.

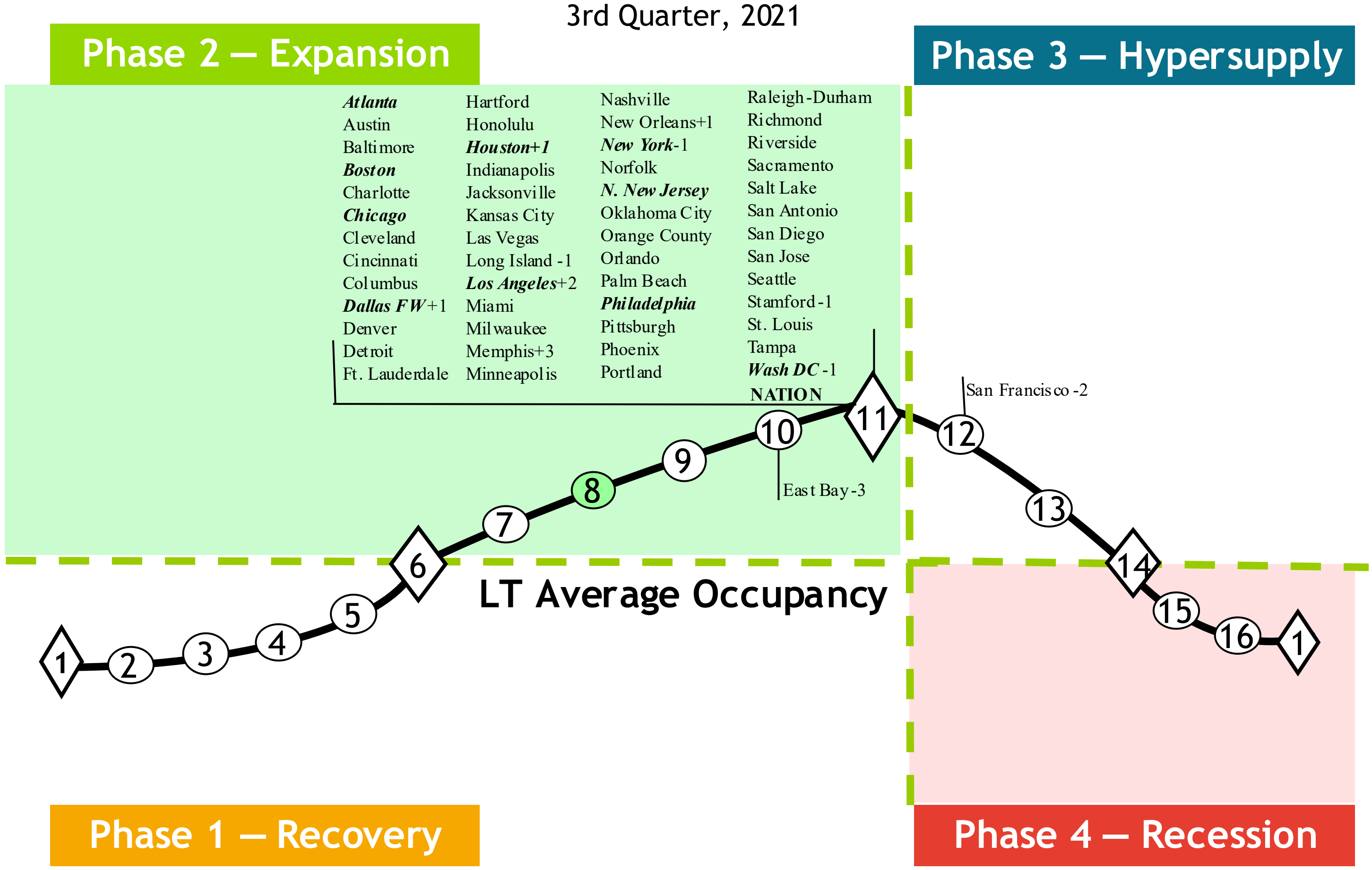
Markets that have moved since the previous quarter are now shown with a + or - symbol next to the market name and the number of positions the market has moved is also shown, i.e., +1, +2 or -1, -2. Markets do not always go through smooth forward-cycle movements and can regress or move backward in their 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 0.6% in 3Q21 and was up 2.3% year-over-year. The move out of the suburbs back to downtown accelerated and all the newly constructed apartments over the past decade filled to higher occupancies than their pre-pandemic levels. The need for more apartment space declined as renters could again go out for meals and entertainment. Many class A, high amenity apartments raised rents as much as 25% over pre-pandemic levels. National average apartment asking rent growth was 3.3% in 3Q21 and up an amazing 11.3% year-over-year. Apartments may end up being the best performing property type in 2021.

Apartment Market Cycle Analysis

3rd Quarter, 2021



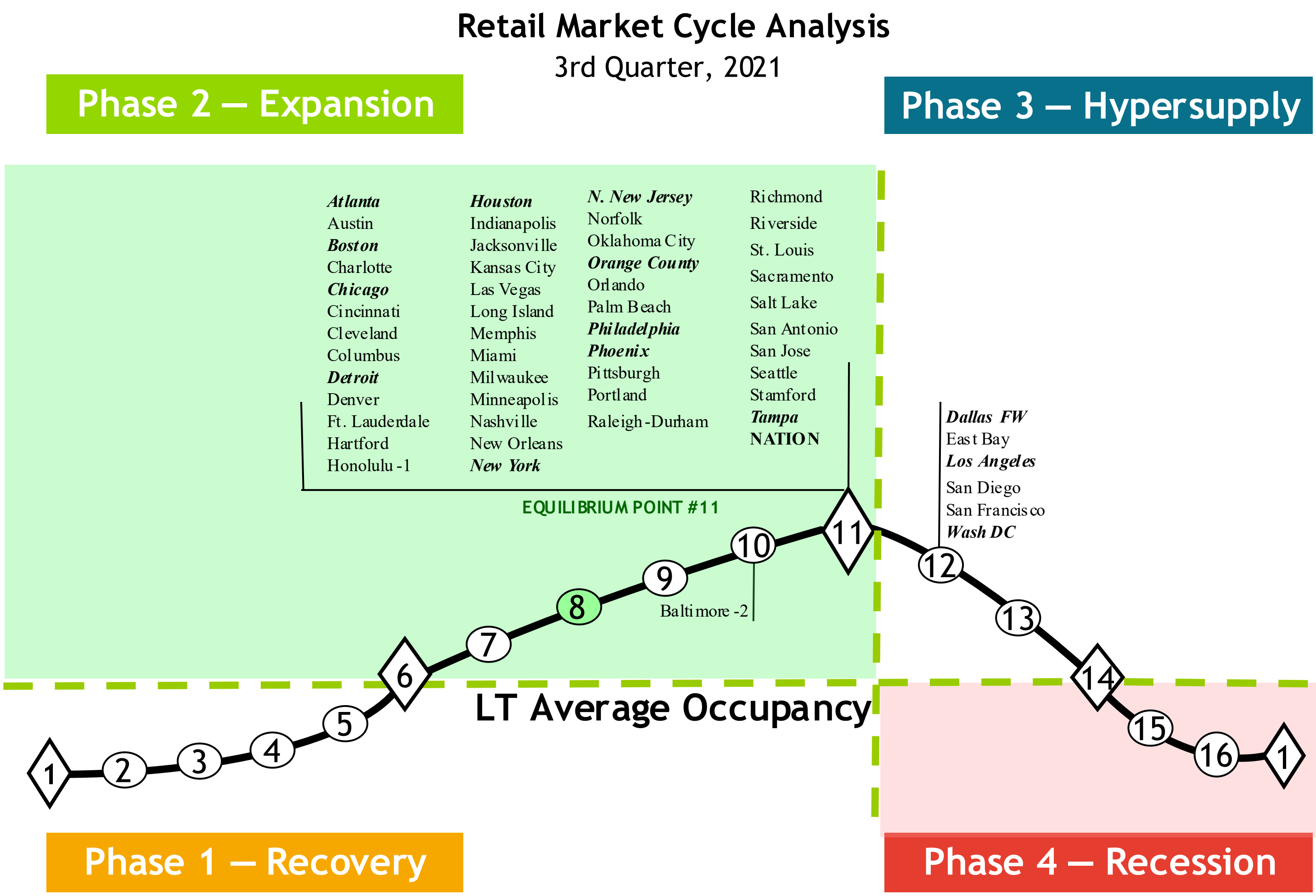
Source: Mueller, 2021

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 up 0.2% in 3Q21 and up 0.2% year-over-year as retail leasing turned the corner. Mall leasing improved as owners became creative with new tenant ideas. Healthcare providers and offices in malls help create foot traffic and one mall even leased to a Porsche dealer, so people could shop while their car was being serviced. Movie theaters and restaurants reopened creating more foot traffic as well. Net supply growth continued to be slow as retail was converted into office, apartments and close in warehouse uses. National average retail asking rents were up 0.7% for the quarter and were up 2.3% year-over-year.



Source: Mueller, 2021

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 Occupancy recovered further in 3Q21, with many hotels reopening. Leisure travel drove strong demand in many markets. Business travel also picked up in 3Q21 with in-person conferences commencing again.

Data is not available from the normal source –
thus, Hotel coverage is suspended till further notice.

UNIVERSITY of DENVER
DANIELS COLLEGE OF BUSINESS
Franklin L. Burns School of Real Estate & Construction Management

VAN KEUREN
FAMILY OFFICE REAL ESTATE™
INSTITUTE
EXECUTIVE EDUCATION

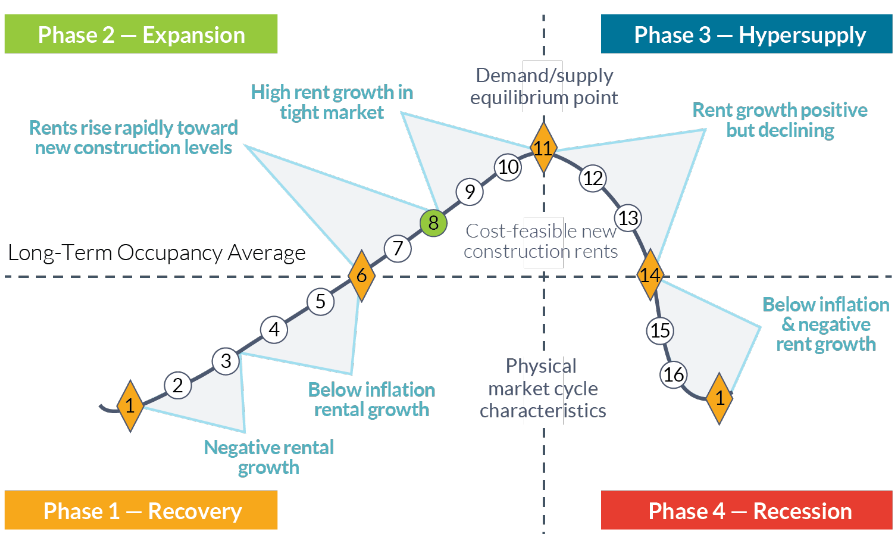
Market Cycle Analysis — Explanation

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 should 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 is 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 could 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.

Denver University - Burns School of Real Estate & Construction Management - glenn.mueller@du.edu
Family Office Real Estate Institute – glenn.mueller@fore.institute