

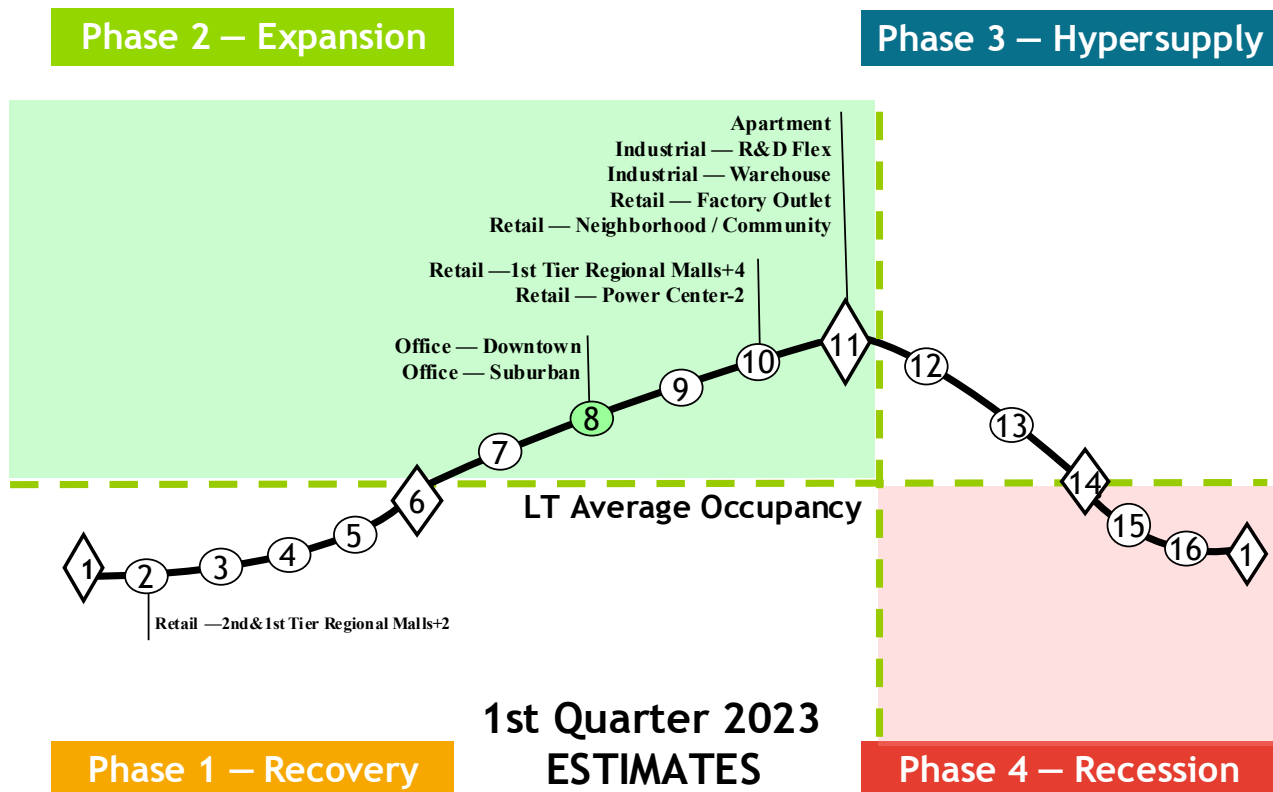
# MUELLER REAL ESTATE MARKET CYCLE FORECAST

## First Quarter 2023 Estimates

1Q2022 was a confusing start to the year. GDP growth was negative -1.4% while employment growth was positive the first 4 months, and unemployment at a long-term low. Projected 2023 employment growth just under 2% should continue to drive demand for all real estate property types as it has historically. US company earnings growth has also been strong through 1Q22, and a continuation of this trend also drives demand for additional space. (Office being the one exception as the work from home trend is still being sorted out.) Supply growth should continue to be constrained at under 2% from construction labor shortages, supply chain issues and higher interest rates constraining new development.

Office occupancies are forecast to **increase 0.1%** in 1Q23, with rents increasing 0.3% quarter-over-quarter. Industrial occupancies are forecast to **be flat** (at peak) in 1Q23, with rents increasing 3.2% quarter-over-quarter. Apartment occupancies are forecast to **be flat** (at peak) in 1Q23, with rents increasing 1.3% quarter-over-quarter. Retail occupancies are forecast to **increase 0.1%** in 1Q23, with rents increasing 1.5% quarter-over-quarter.

## National Property Type Cycle Forecast



Source: Mueller, 2022

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

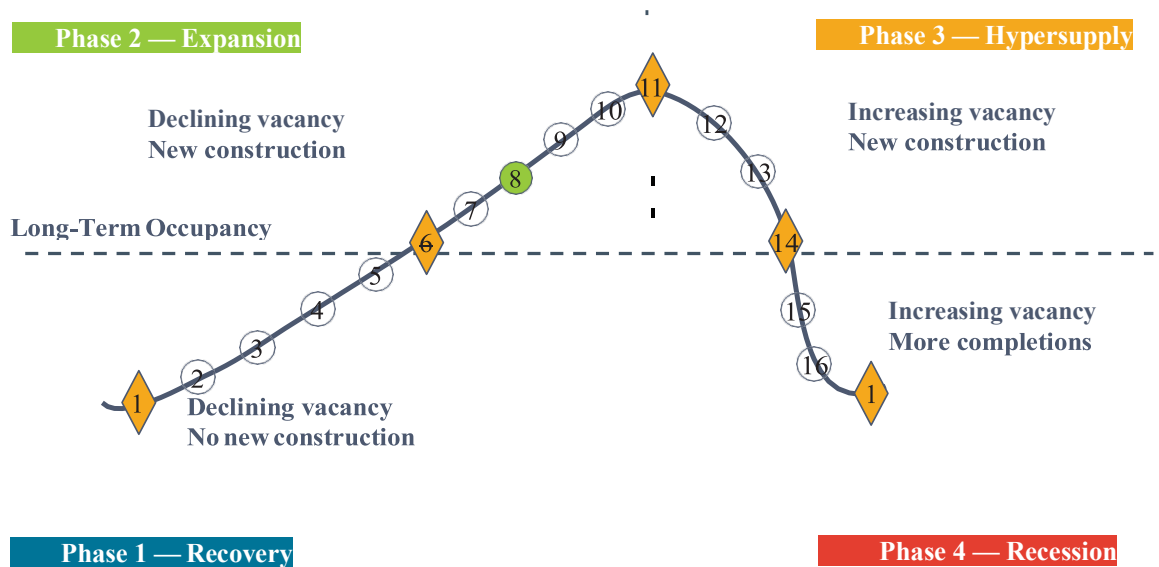
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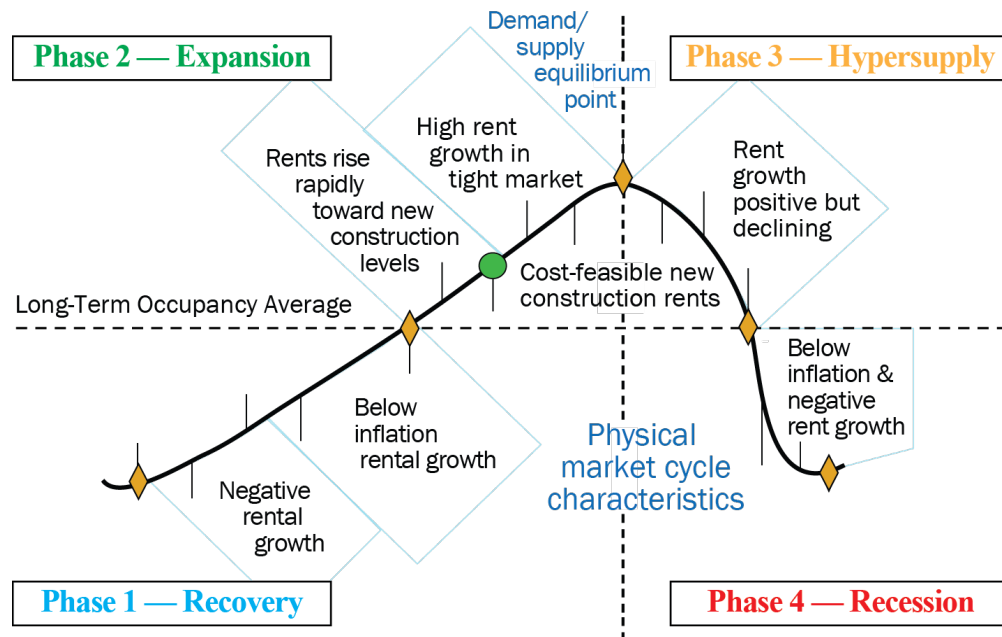
The **Cycle Forecast** analyzes occupancy movements in four property types in more than 50 Metropolitan Statistical Areas (MSAs). The market cycle analysis should enhance investment-decision capabilities for investors and operators. The four property type cycle charts summarize almost 300 individual 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. Long-term occupancy average is different for each market & each property type. **Long-term occupancy averages** (points #6 & #14) are a key factor determining rental growth rates that drive income affecting 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.



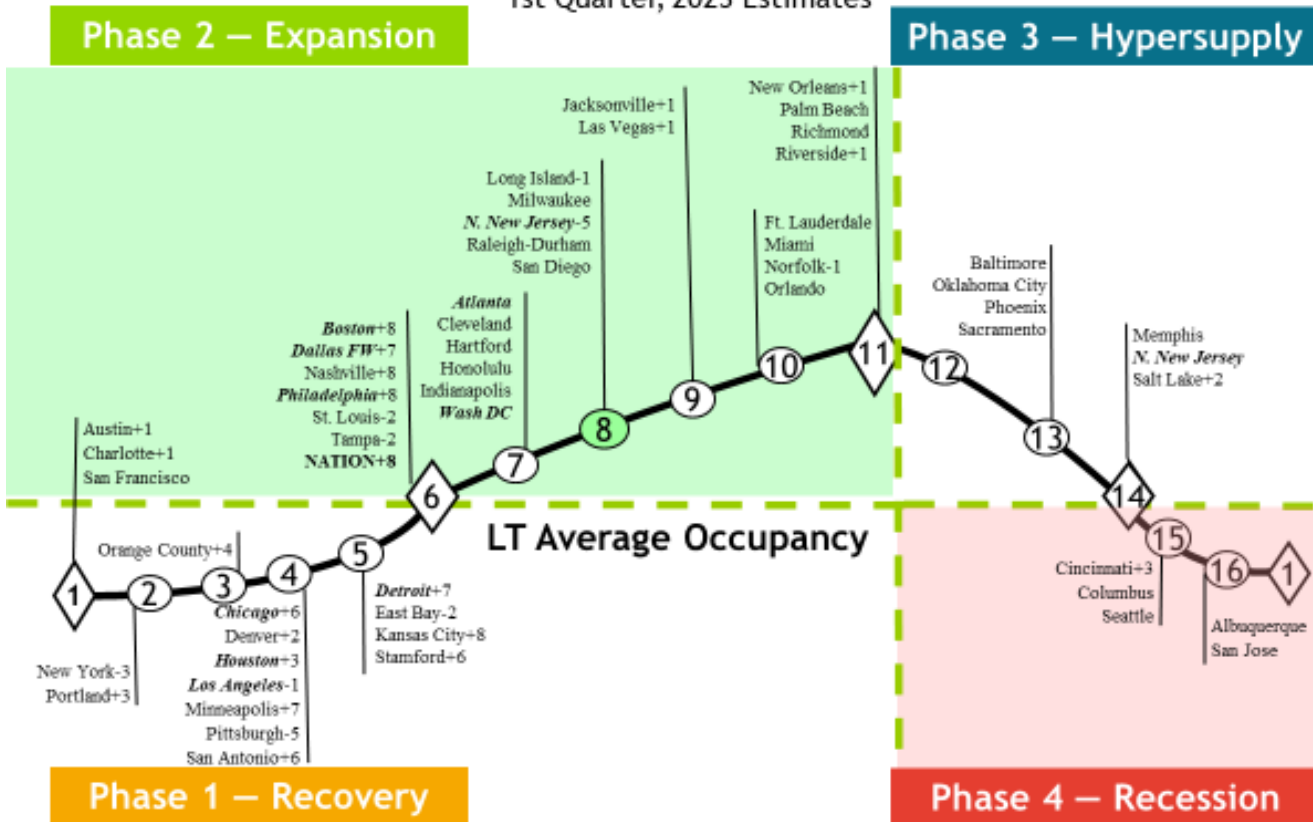
Source: Mueller, Real Estate Finance, 1996.

## OFFICE FORECAST

Office occupancies are forecast to improve 0.1% in 1Q23 and increase only 0.3% year-over-year. Employment growth is still the major driver of office space demand, and we expect solid job growth into 2023. Currently the probability of recession has risen from 18% to 28% amongst economists surveyed, and the Fed Funds rate increases by the Fed to control inflation may push the recession probability higher. A majority of markets now have a positive future occupancy forecast, placing them in the recovery and expansion phases of the cycle. Note the major gateway markets like New York and San Francisco are forecast at or near their cyclical bottom of occupancy, as workers continue to migrate to second tier markets where living costs are lower. The high volume of new space leasing should drive the national average office asking rents to increase 0.3% in 1Q23 and be up 1.9% year-over-year.

### Office Market Cycle FORECAST

1st Quarter, 2023 Estimates



Source: Mueller, 2022

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

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 FORECAST

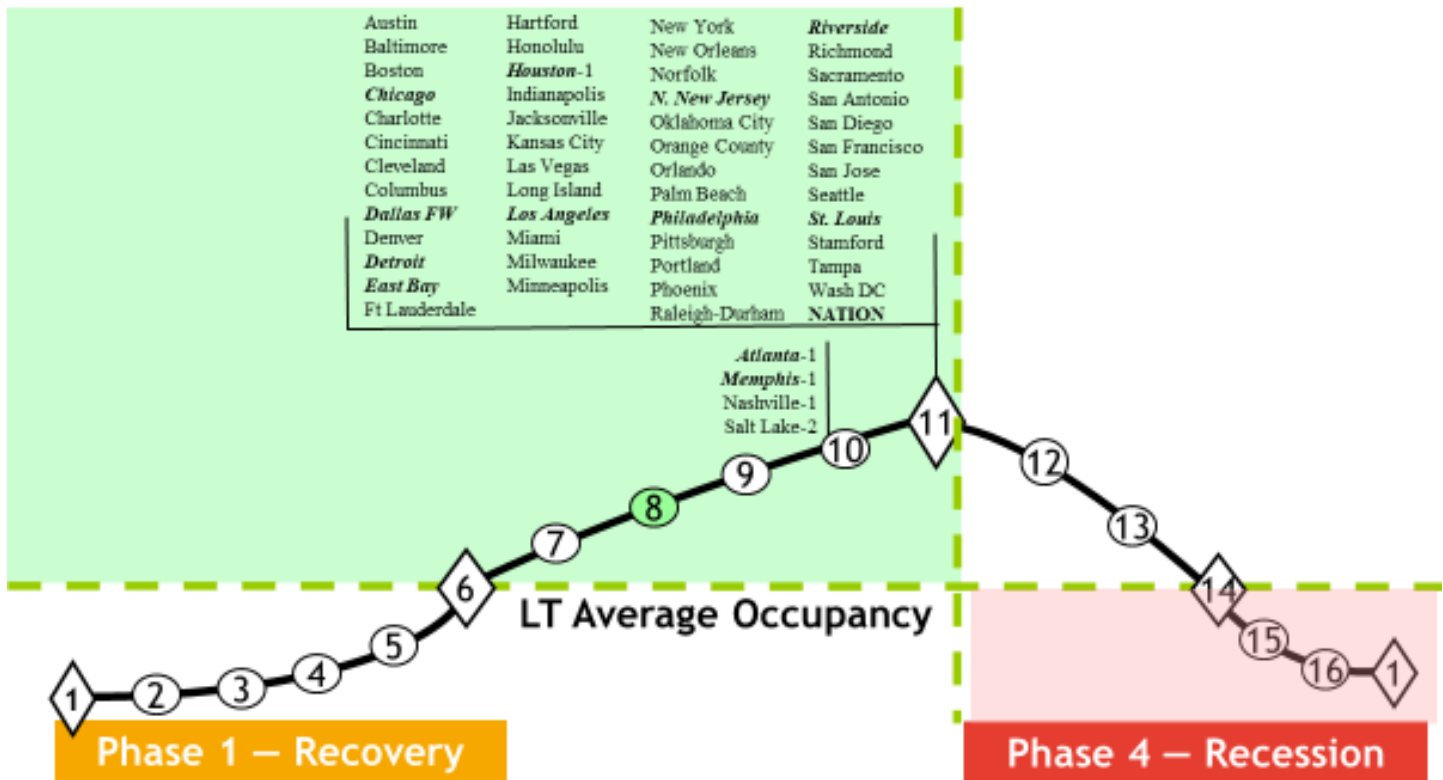
The national industrial occupancy growth is forecast to be flat at *peak-equilibrium* level in 1Q23 and be flat year-over-year. 10-year historic retail sales growth averaged 1.9% per year, until 2021 when sales exploded to a 10% growth rate. Demand for storage space to meet that demand from both brick-&-mortar retailers and ecommerce retailers has not been satisfied yet, thus there is at least a five-year strong demand growth projected. Only 4 markets are forecast to be below their *peak-equilibrium* occupancy level point # 11 on the cycle graph in 1Q23. There is a strong supply response expected in 2023 from the high demand growth of 2021 that should alleviate the supply shortage, but rents must grow to pay for the higher construction costs. We expect national average asking rents to increase 3.2% in 1Q23 and be **up 15.6%** year-over-year.

### Industrial Market Cycle FORECAST

1st Quarter, 2023 Estimates

Phase 2 – Expansion

Phase 3 – Hypersupply



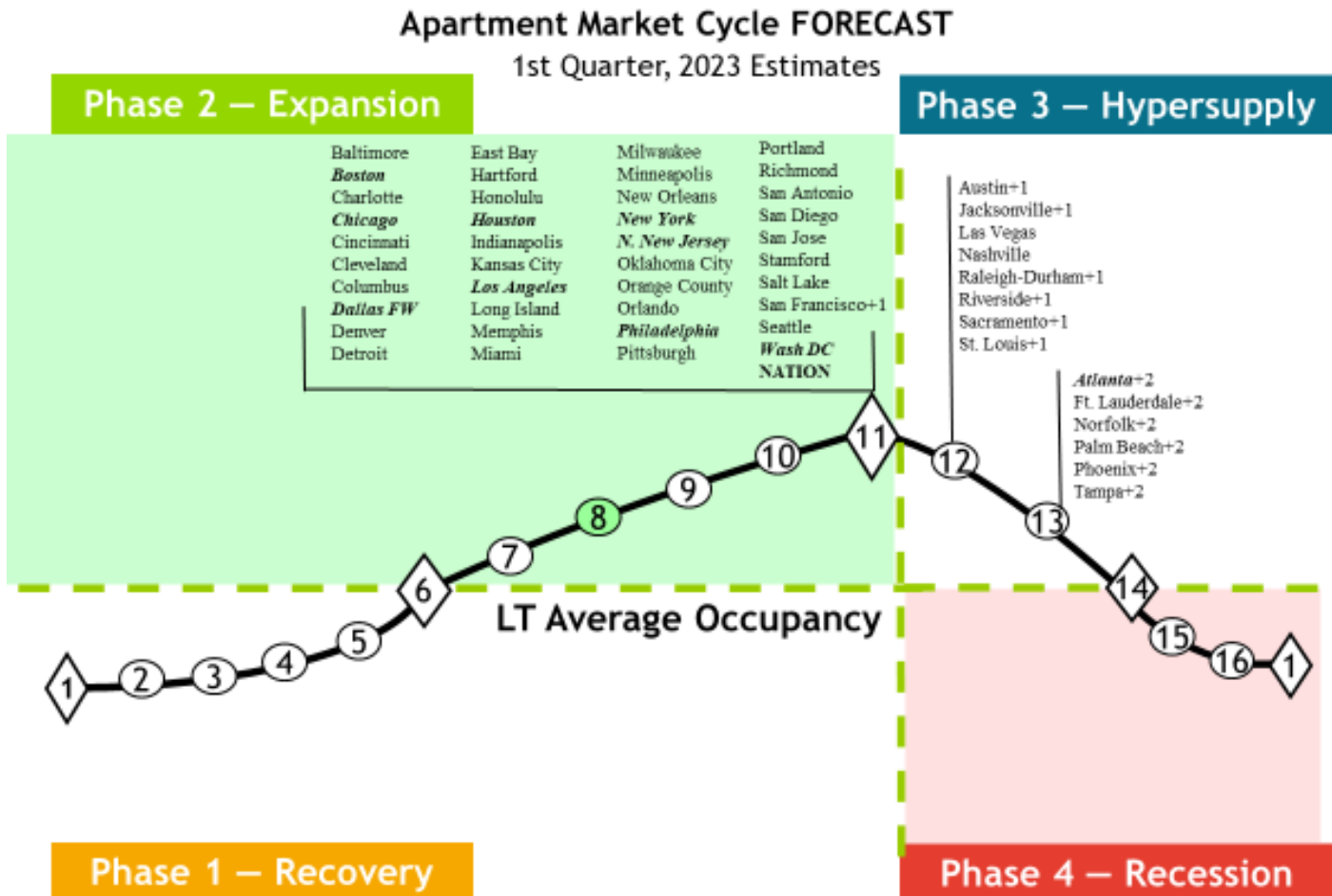
Source: Mueller, 2022

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

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 FORECAST

Apartment occupancies are forecast to be flat at *peak-equilibrium* levels in 1Q23 and be down -0.3% year-over-year. While demand growth is expected to settle back down from 100,000 units in 1Q22 to the more long-term average 75,000 per quarter, there is a new -space supply boom in 2022 that pushes occupancies down in many of the fast growing second tier markets. We forecast 14 markets to be in the Hypersupply phase of the cycle by 1Q23 from the strong supply response of the economy re-opening. The national apartment asking rental rate may increase by 2.3% in 1Q23 and be **up 15.9%** year-over-year, even higher than the 12.3% experienced in 2021.



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

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## RETAIL FORECAST

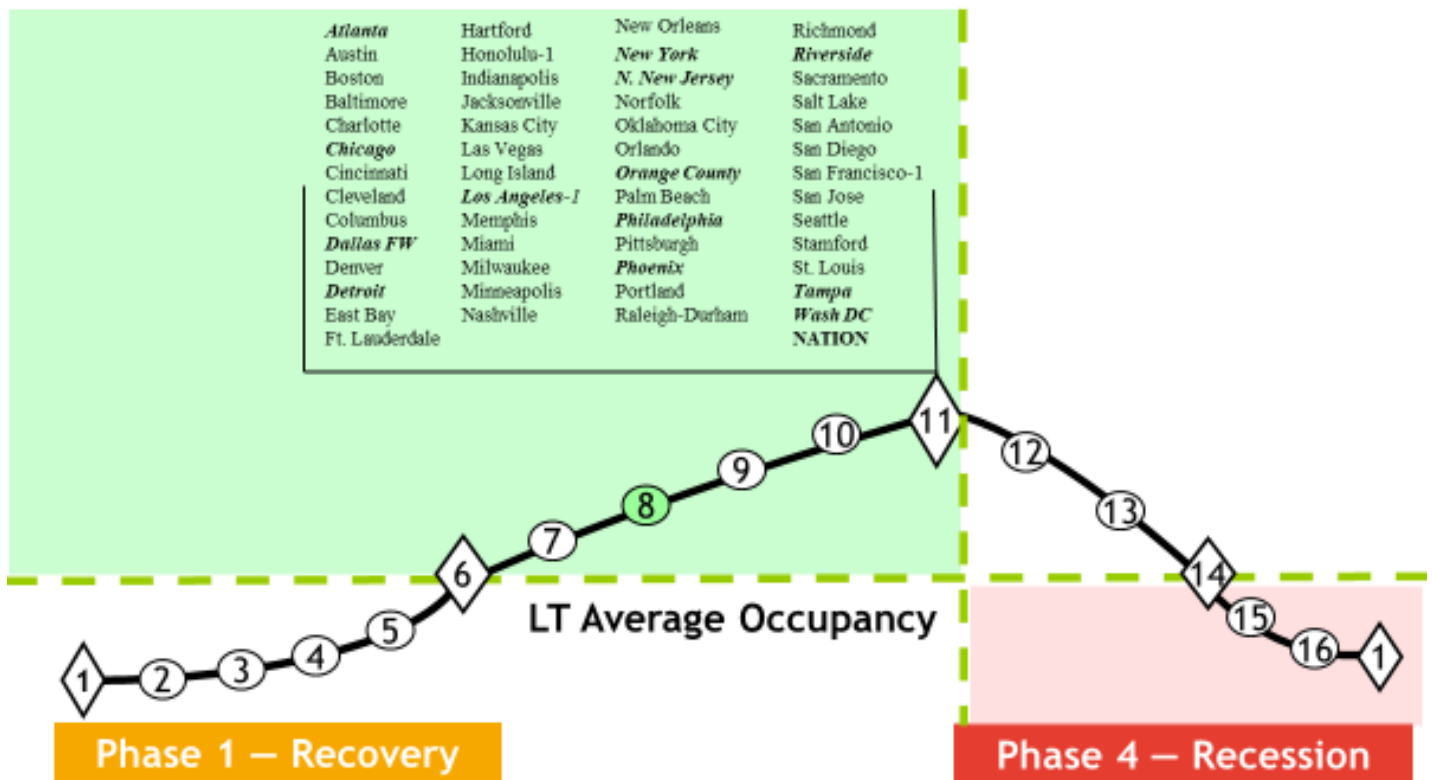
Retail occupancy is forecast to increase 0.1% in 1Q23 and increase 0.2% year-over-year. We expect demand for space to continue to grow at a 15 MSF per quarter through 2023, with supply growth being slightly lower, thus keeping occupancies high. Once retail proves itself to the investor community, supply could rise in 2024 to levels above demand growth. Many new retail formats are unproven at this time, and this could mean lower rent growth. Retail asking rental rates are expected to increase 1.5% in 1Q23 and be up 5.1% year-over-year.

### Retail Market Cycle FORECAST

1st Quarter, 2023 Estimates

Phase 2 – Expansion

Phase 3 – Hypersupply



Source: Mueller, 2022

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

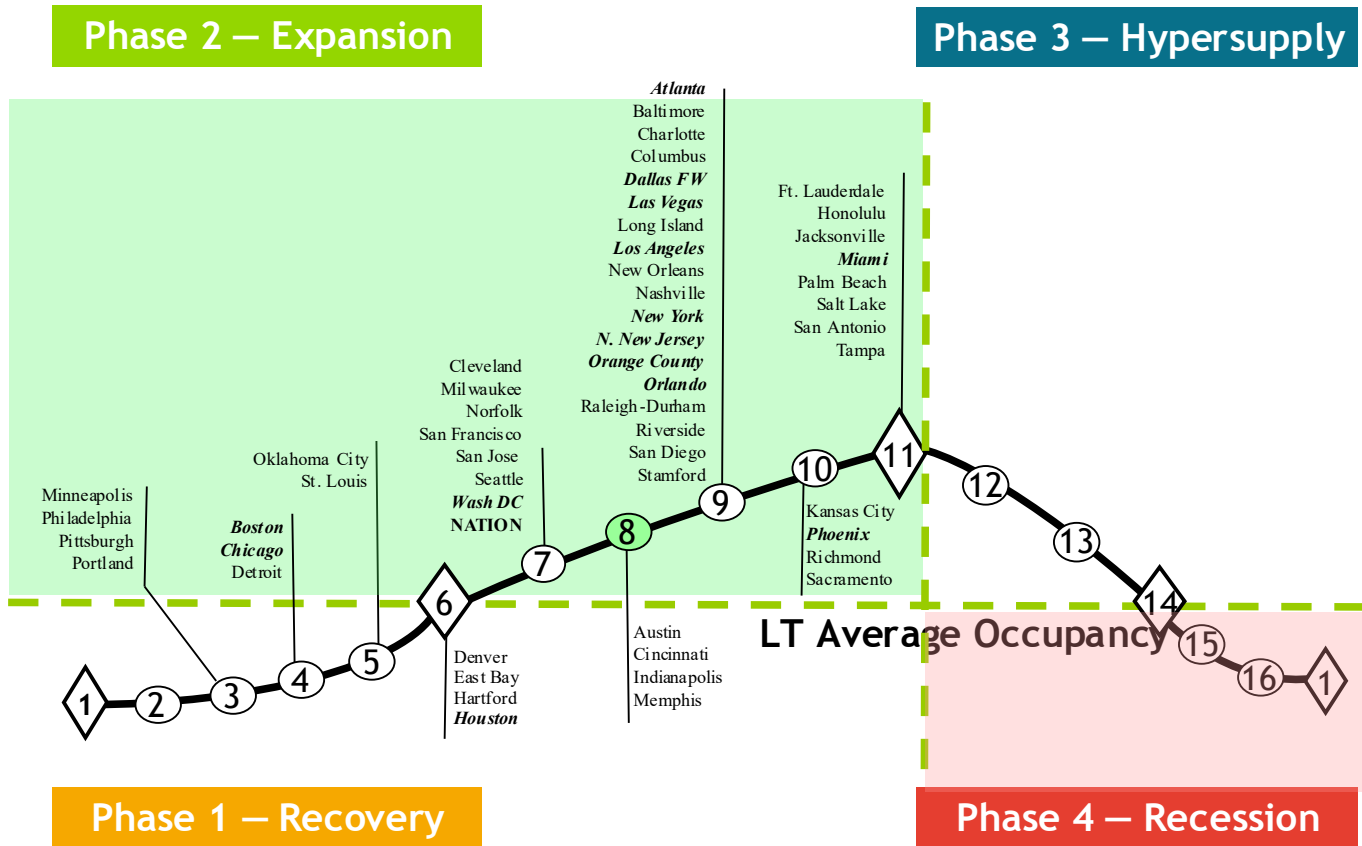
Markets do not always go through smooth forward-cycle movements and can regress or move backward in their cycle position when occupancy levels reverse their usual direction. This can happen when the marginal rate of change in demand increases (or declines) faster than originally estimated or if supply growth is stronger (or weaker) than originally estimated.



## HOTEL FORECAST

Hotel occupancies are forecast to be up 1.8% in 1Q23 and up 5.5% year-over-year. We expect moderate economic growth to continue that should allow travel to grow. Most markets are expected to see increased occupancy over the next year. Leisure travel is expected to continue to grow at a faster rate than business travel, thus most of the markets near the top of their occupancy cycles are mainly leisure travel markets. Business hotels are expected to improve also, but many are still below their long-term average occupancy level (point # 6 on the cycle graph). A small amount of older supply is expected to be removed, much of it being converted into apartments. The Average Daily Rate (ADR) is forecast to be up 5.6% for the quarter and up 3.4% year-over-year. National average Revenue Per Available Room RevPAR is forecast to be up 7.4% for the quarter and up 10.5% year-over-year.

### Hotel Market Cycle FORECAST 4th Quarter, 2018 Estimates



Source: Mueller, 2022

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

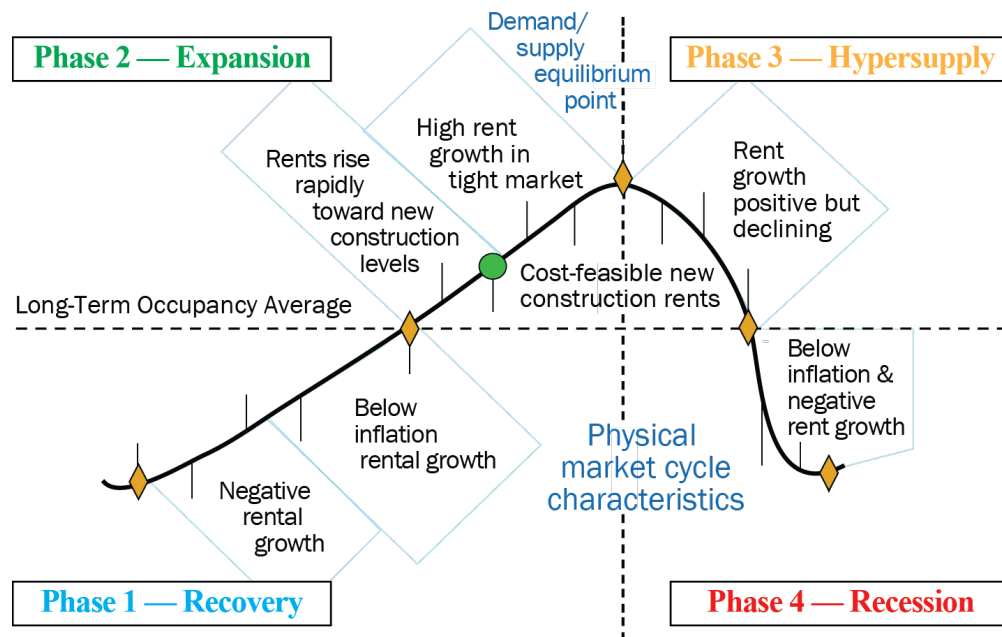
**MARKET CYCLE ANALYSIS — Explanation**

**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 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; 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.

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