The "Golden" Era of U.S. Industrial Real Estate

November 2023

PLYMOUTH REIT

AVISON YOUNG

Key takeaways

High tech manufacturing on the rise
From electric vehicles to clean-tech, advanced manufacturing initiatives are reshaping the need for industrial space.

Shifting Port volume favors Tier II markets
Twenty-equivalent unit (TEU) import and export volume has shifted in favor of Atlantic ports over the last several years.

Diversifying ports of entry shifts demand
Markets within the Golden Triangle are greatly benefiting from emerging complementary clusters of supply chain networks within onshoring and reshoring sites.

Manufacturing favors Tier II markets
Tier II markets provide occupiers with a more dense base of manufacturing workers and less competitive labor environment.

Lower square footage, lower vacancy
Properties between 20k-150k in Tier II markets have seen the strongest occupancy compared to larger properties.

"Big Box" dominates supply injections
Most of the supply being injected into Tier I and Tier II markets comes from projects over 500k sf.

Construction starts taper off
A significant drop in construction starts, particularly in Tier II markets, will lead to less deliveries over the next 18-24 months.

Population trends favor Tier II markets
Population growth across Tier II markets is expected to outpace Tier I markets based on 2027 projections.

COL and labor favor Tier II markets
Tier II markets have a lower cost of living (COL) compared to Tier I markets along with cheaper industrial labor.

Contents

Source: Certified Commercial Investment Member (CCIM) Institute
*note: "Golden Triangle" was first used by the CCIM Institute in a thought capital piece published in Q2 2021. See Methodology and Criteria for more.

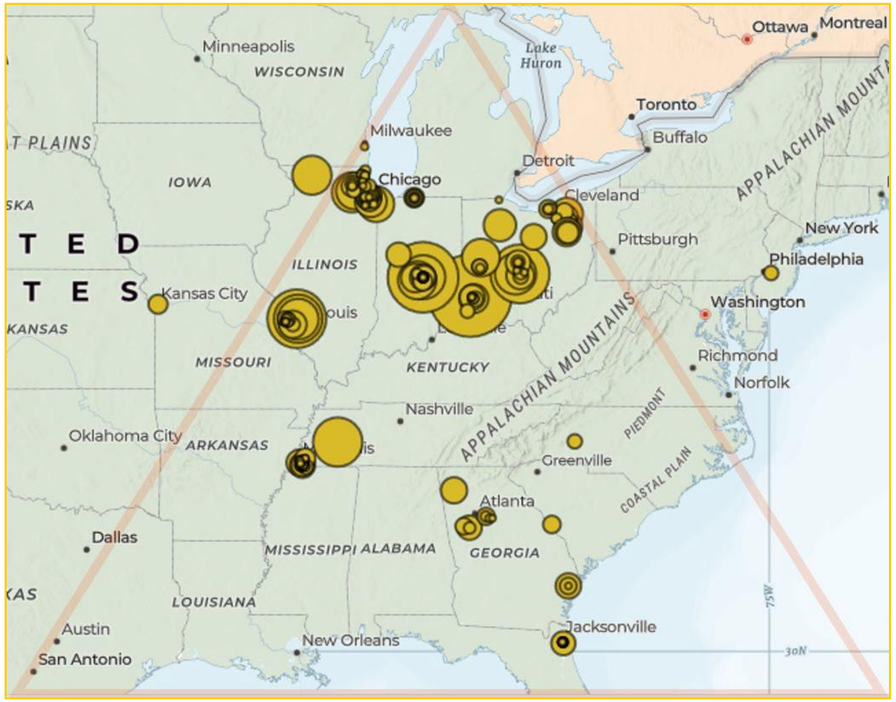
Section 01

The Golden Triangle*

Nearly all of Plymouth's portfolio resides inside the Golden Triangle states

The region is named the "Golden Triangle"(GT) as it:

- Within a day's drive-time to 70% of the US population.
- Includes more than half the U.S. GDP within its boundaries.
- Contains more ports than any other region in the country.
- Encompasses five of the seven Class I railroads.
- 90% of households live within a five-hour truck drive of primary. intermodal facilities and inland rail ports.
- Over the last five years, the average population growth for markets within the GT averages at 4.9%.



Source: Certified Commercial Investment Member (CCIM) Institute
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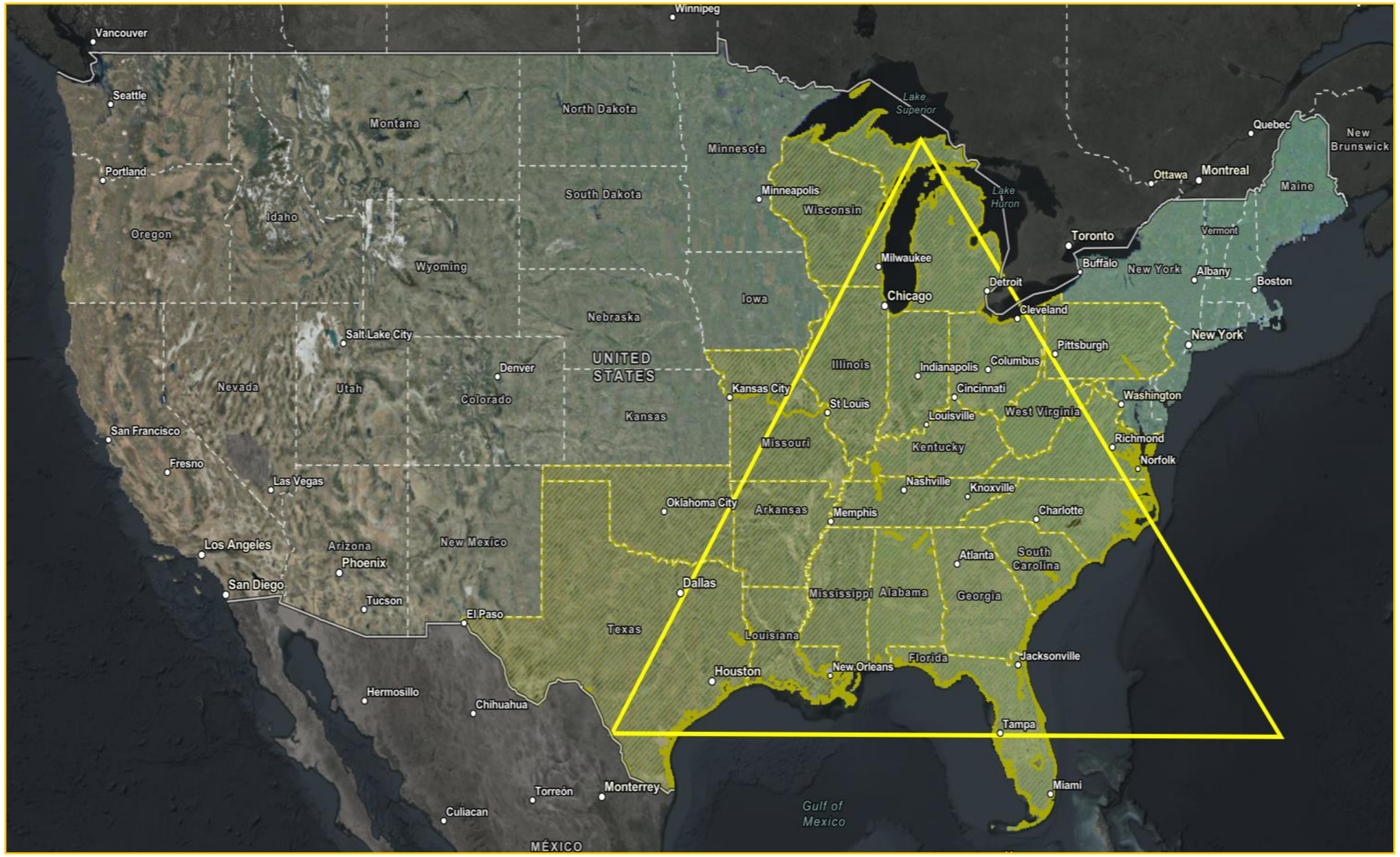
The Golden Triangle*



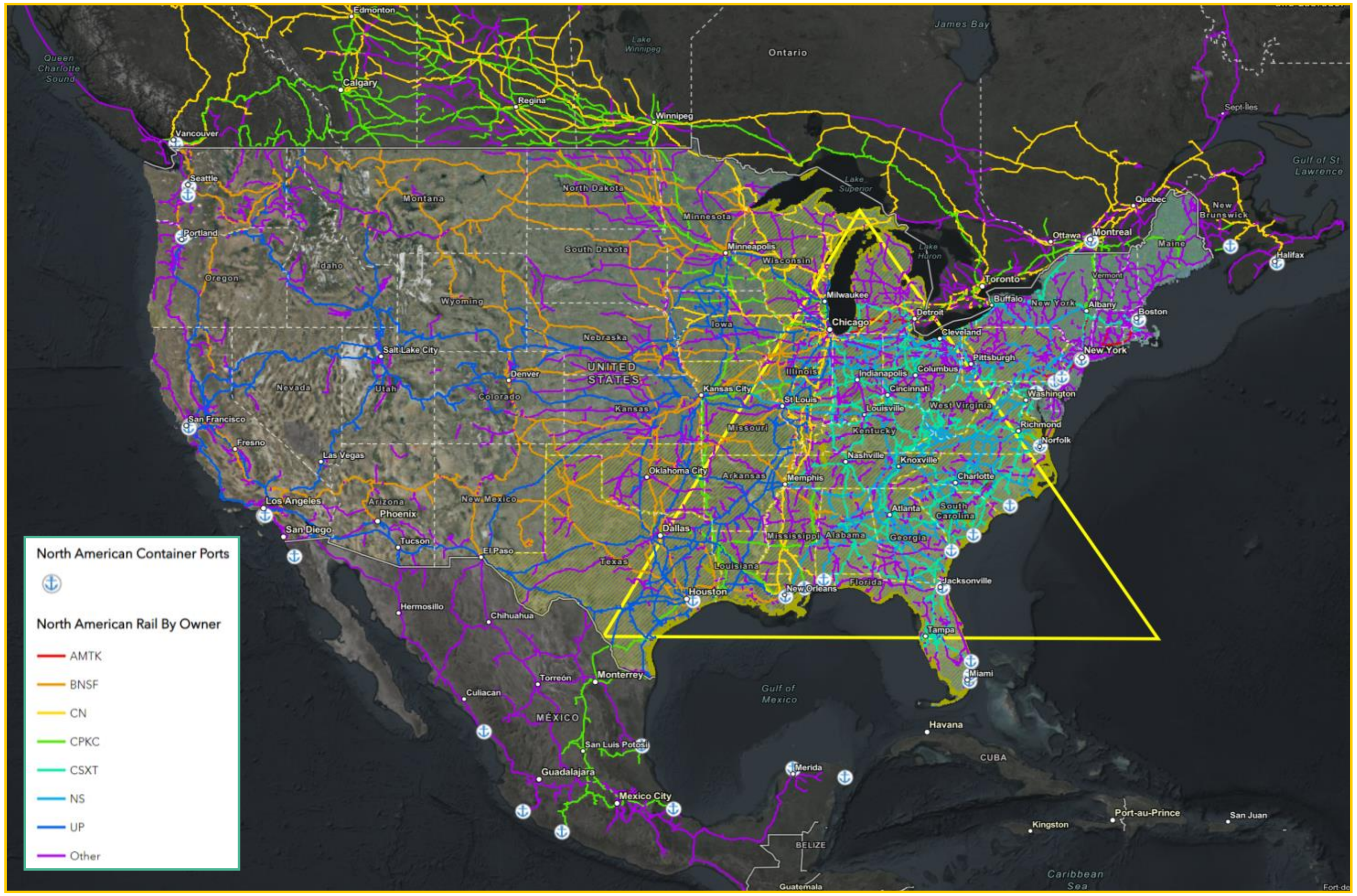
90.0%

U.S. households that live within a five-hour freight truck drive of primary intermodal & inland rail facilities.

The states that border the Golden Triangle are the largest beneficiaries of the surge in Eastern Port trade volume increases, as well as the largest growth in population trends in the U.S. Continued investment in advanced manufacturing and largely beneficial pro-business policy continues to attract new industrial users to this area.

Source: Certified Commercial Investment Member (CCIM) Institute
*note: "Golden Triangle" was first used by the CCIM Institute in a thought capital piece published in Q2 2021. See Methodology and Criteria for more.

Five of the seven Class I railroads encompassed within Golden Triangle



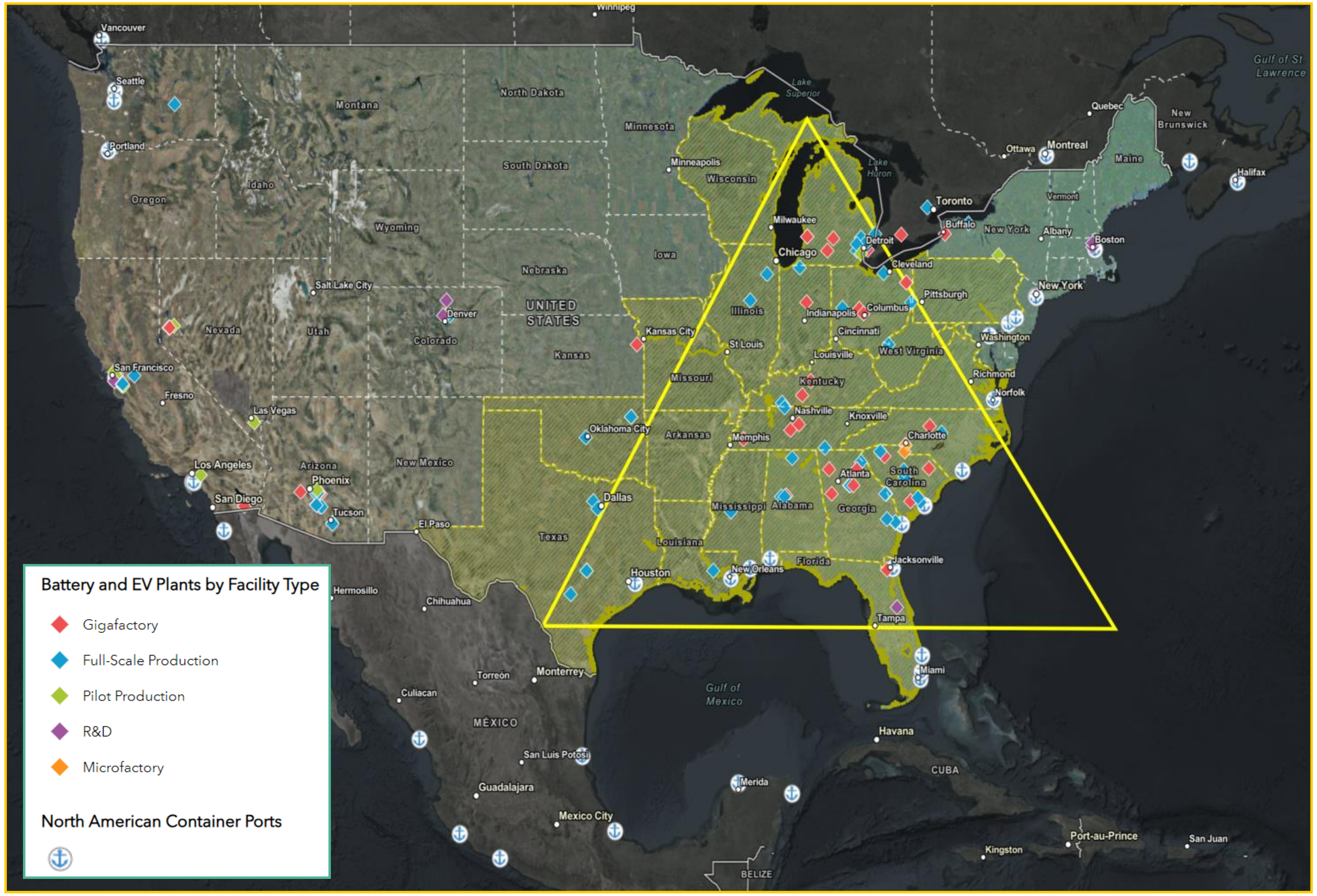
3.5 & 2.0M

Record TEU volume in 2022 for Mexico's Port of Manzanillo & Port of Lazaro Cardenas respectively.

Continued diversification of points of entry for imported materials is largely benefiting emerging port markets, and new investment in additional ports like the Port of Mobile will continue to offer many options to Supply Chain strategy, particularly as Class I rail owners such as Canadian Pacific merges with Kansas City Southern to provide true full North American coverage.

Source: AVANT by Avison Young, Individual Port Authorities

North America’s emerging advanced EV & Battery production cluster



+80%

EV & Battery production facility locations found within Golden Triangle states.

Continued advancement of the U.S. EV & Battery production manufacturing capacity will derive complementary demand from suppliers, further concentrating opportunities within the Golden Triangle as production networks mature.

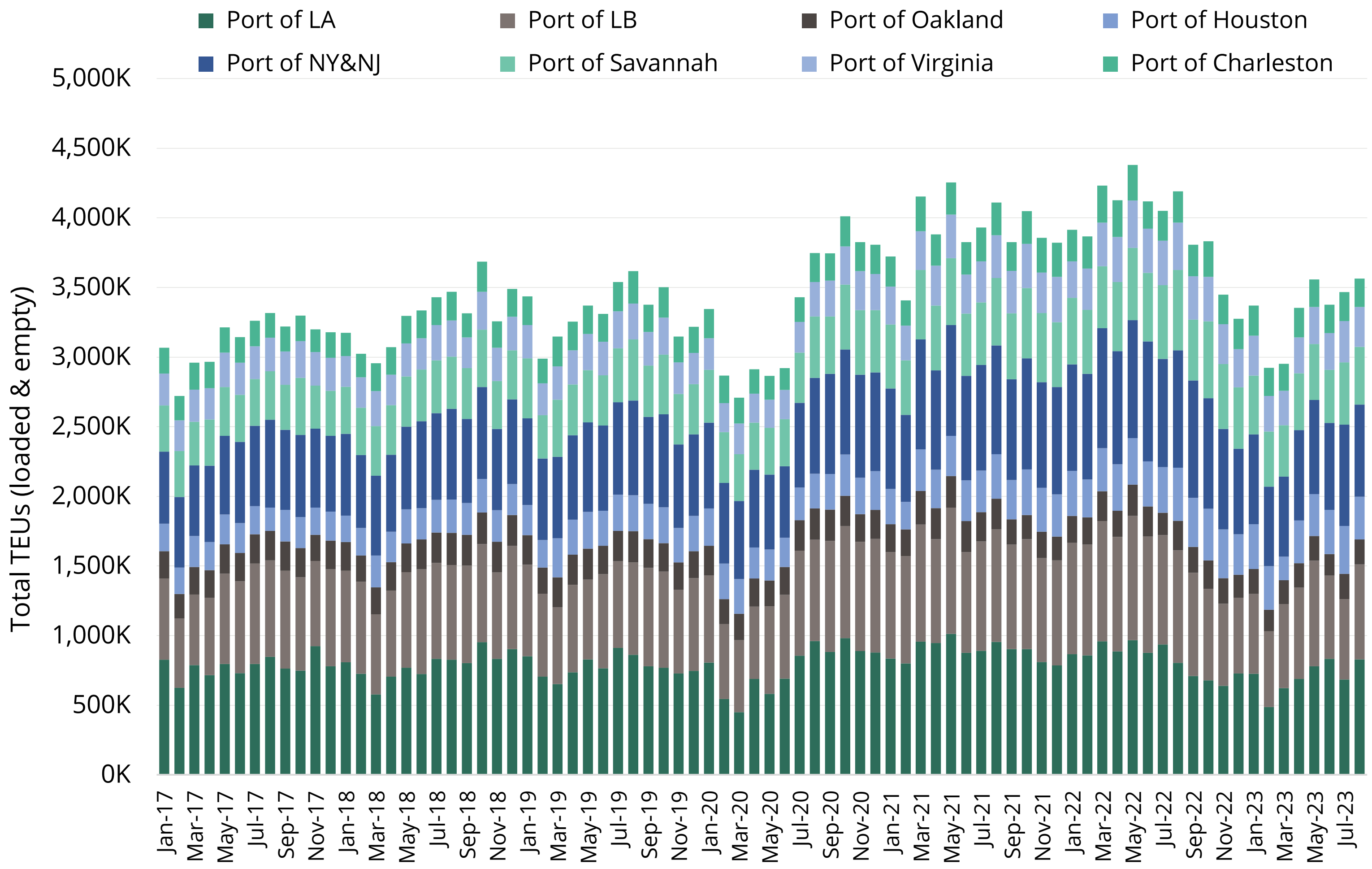
Source: Avant by Avison Young, Certified Commercial Investment Member (CCIM) Institute

Section 02

Onshoring and nearshoring

Continued infrastructure investment throughout North America is enabling emerging supply chain clusters to occur in conjunction with diversified ports of entry by industrial users.

Port activity accelerating



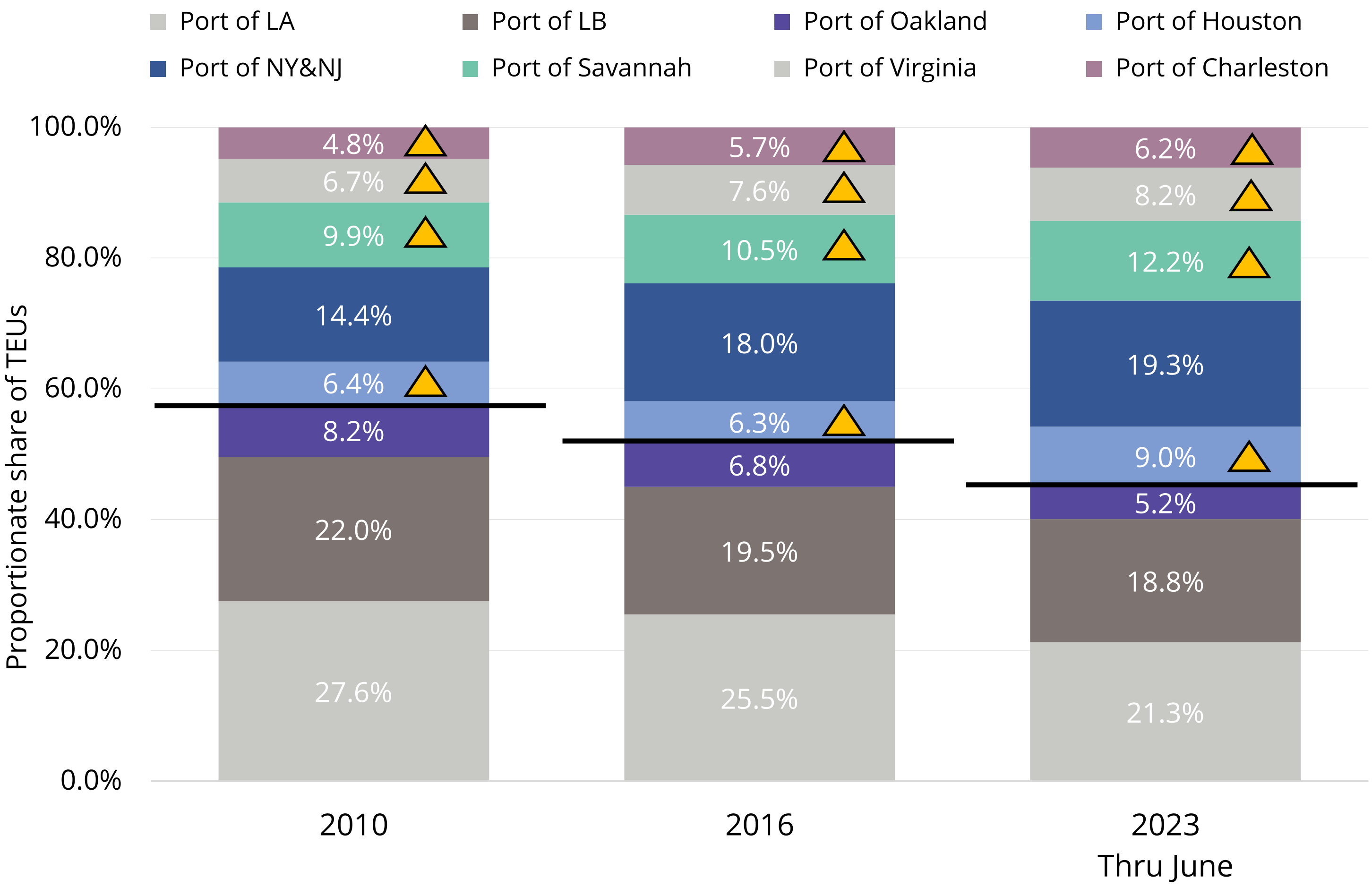
Source: AVANT by Avison Young, Individual Port Authorities
*Most recent data through August totals

21.9%

Increase in TEU volume since the recent low point in March 2023.

Port activity continues to accelerate despite economic concerns. Mexico's two largest ports also contribute close to 5M TEUs to North American volumes, offering supply chains ever more options.

East Coast ports continue to build significant market share as firms seek diversified risk



Denotes port within the Golden Triangle*

Note: Percentage of activity for specific Ports listed.
Source: AVANT by Avison Young, Individual Port Authorities

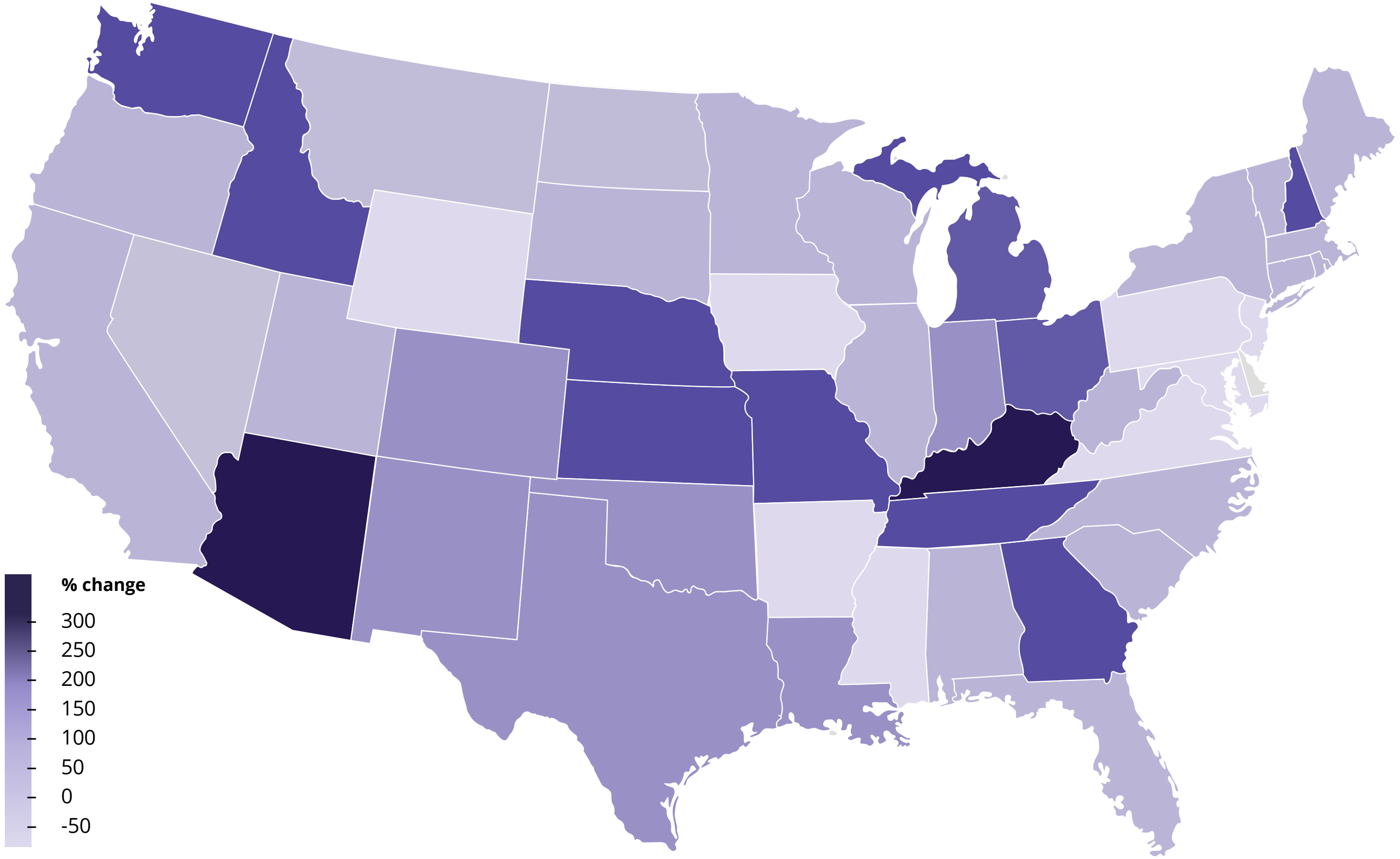
-19.2%

Fall in West Coast port total proportion of volume from 2010 to mid-year 2023.

Led by reshoring and an elevated focus on diversification, supply chain strategies begun in 2016 are now well into their execution, largely benefiting U.S. Eastern Ports, and increasingly Mexico's Western Ports.

U.S. manufacturing construction

Total put-in-place, 2022-2023 versus 10-year average



Source: Oxford Economics

6 of top 10 States with a notable increase in manufacturing construction are located within the Golden Triangle*.

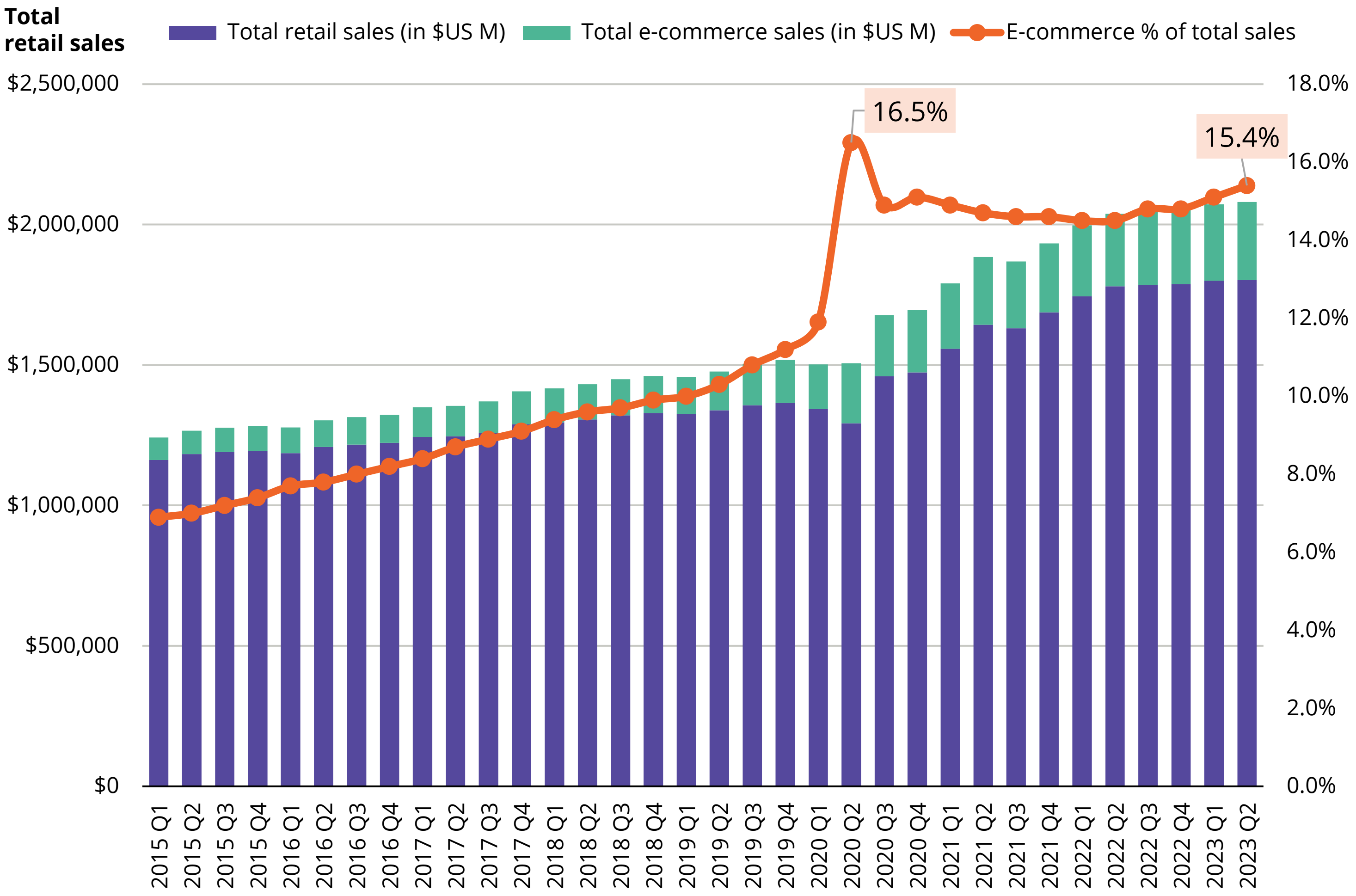
Top 10 states

1. Arizona
2. Michigan △
3. Ohio △
4. Kentucky △
5. Tennessee △
6. Georgia △
7. New Hampshire
8. Missouri △
9. Kansas
10. Nebraska

△ Denotes state within the Golden Triangle*

*note: "Golden Triangle" was first used by the CCIM Institute in a thought capital piece published in Q2 2021. See Methodology and Criteria for more.

U.S. total retail and e-commerce sales



Note: As of August 17, 2023 (most recent update)
Source: Federal Reserve Bank of St. Louis

15.4%

E-commerce share of overall retail sales in Q2 2023.

Despite trends downward after the initial surge of purchasing in the first quarter of full-COVID policies, e-commerce retail spend has increased at +30.2% since start of 2020, indicating sustained e-commerce source of industrial demand.

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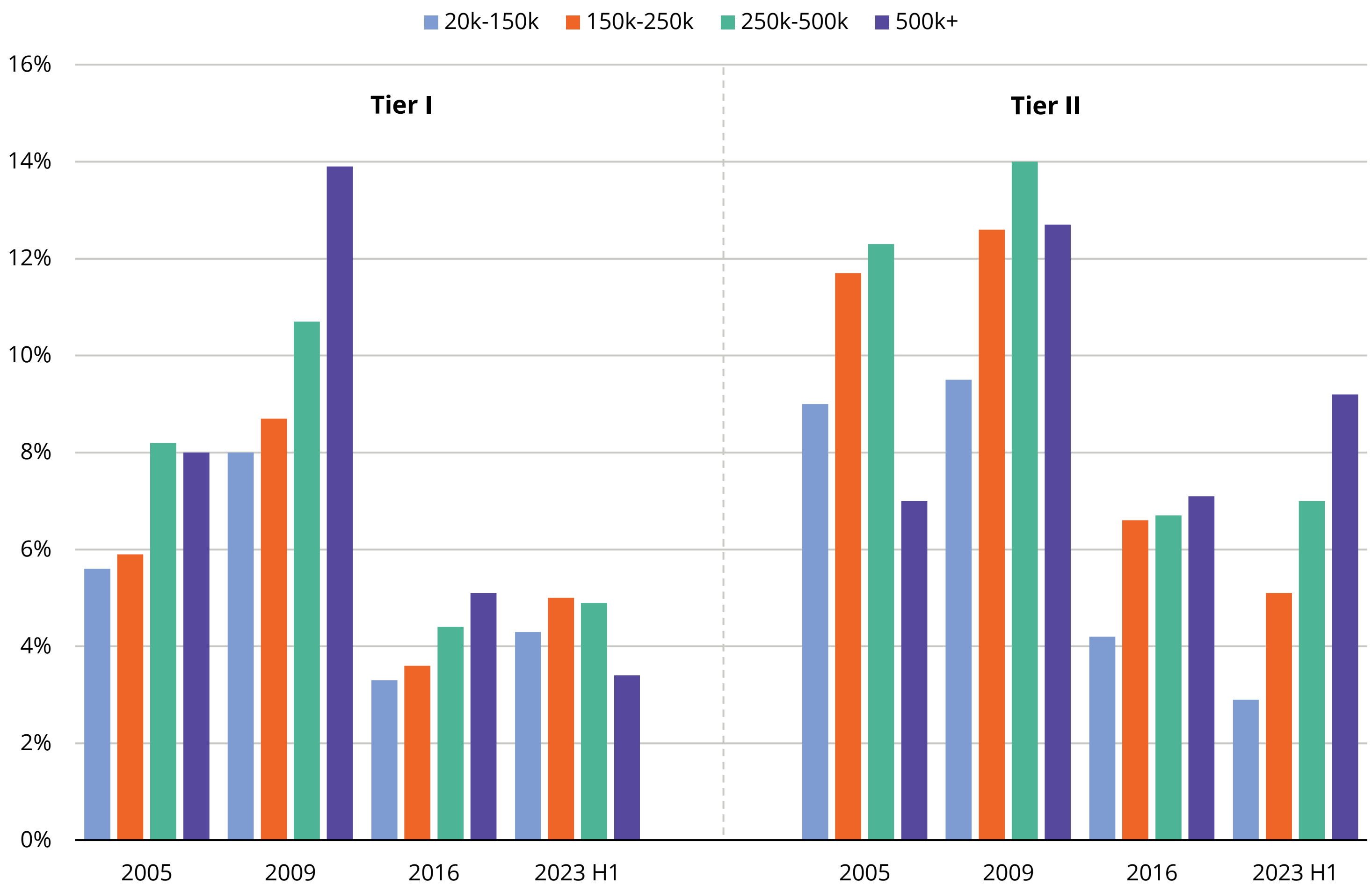
Section 03

Industrial market fundamentals

A tale of two markets emerging throughout Tier I & II, as big box deliveries increase vacancy rates, however smaller building vacancy rates remain at historic lows, & rent growth remains constant & steady.

Vacancy performance vs. present



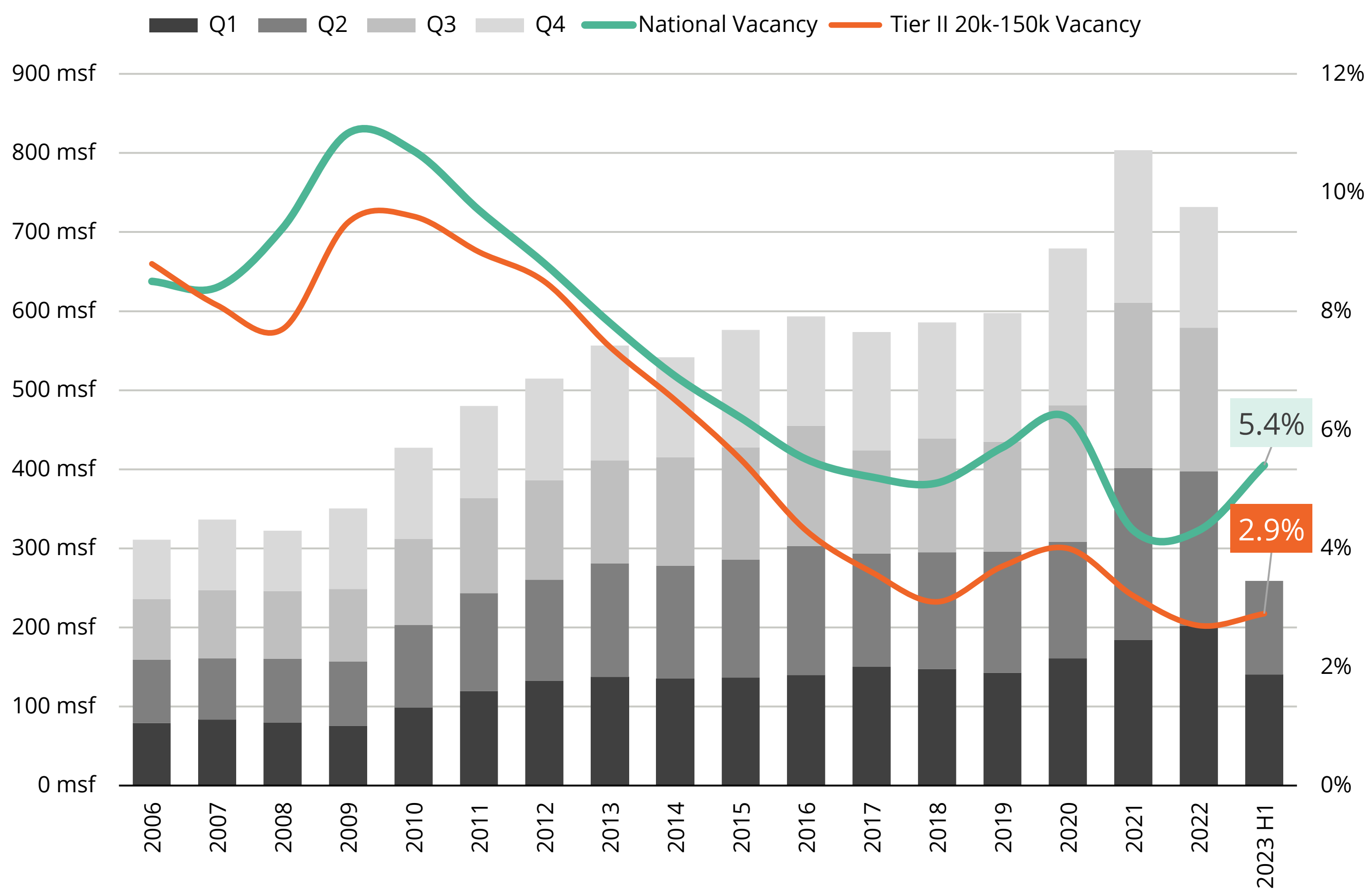
<4.0%

20k-150k sf sized spaces are more stable during recessions than any other size bucket.

The 20k-150k sf assets retained the least amount of volatility among Tier I and II market size buckets since 2005. This lack of volatility can be attributed to the occupier base and their ability to weather economic turmoil.

Source: AVANT by Avison Young, CoStar

Industrial leasing activity



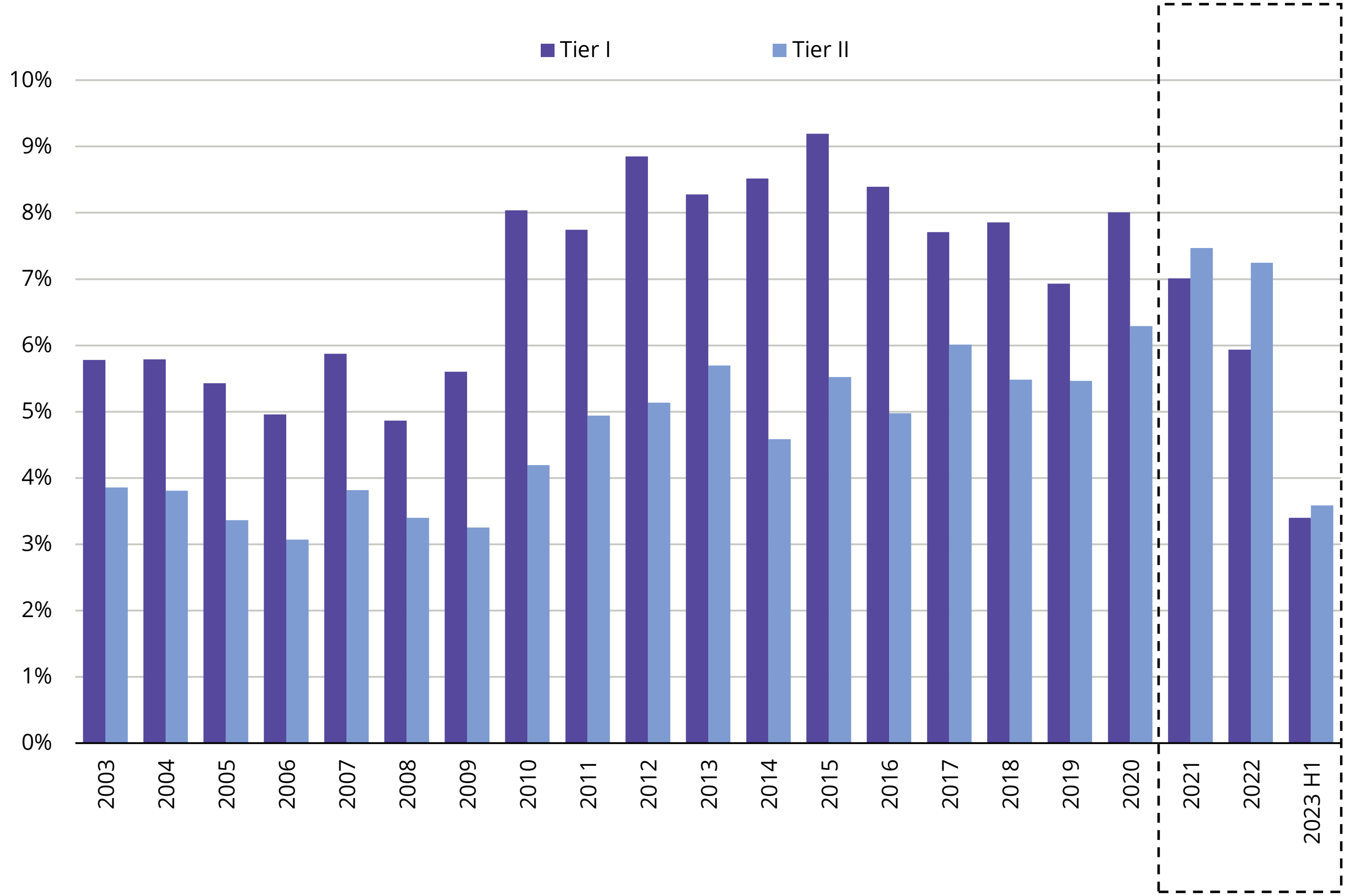
-250 bps

Tier II 20k-150k sf building vacancy under National average.

National leasing volumes decline as 2023 H1 activity drops below historical averages due to historic deliveries coming to market, with vacancy rates normalizing.

Source: AVANT by Avison Young, CoStar

Leasing activity as a % of inventory



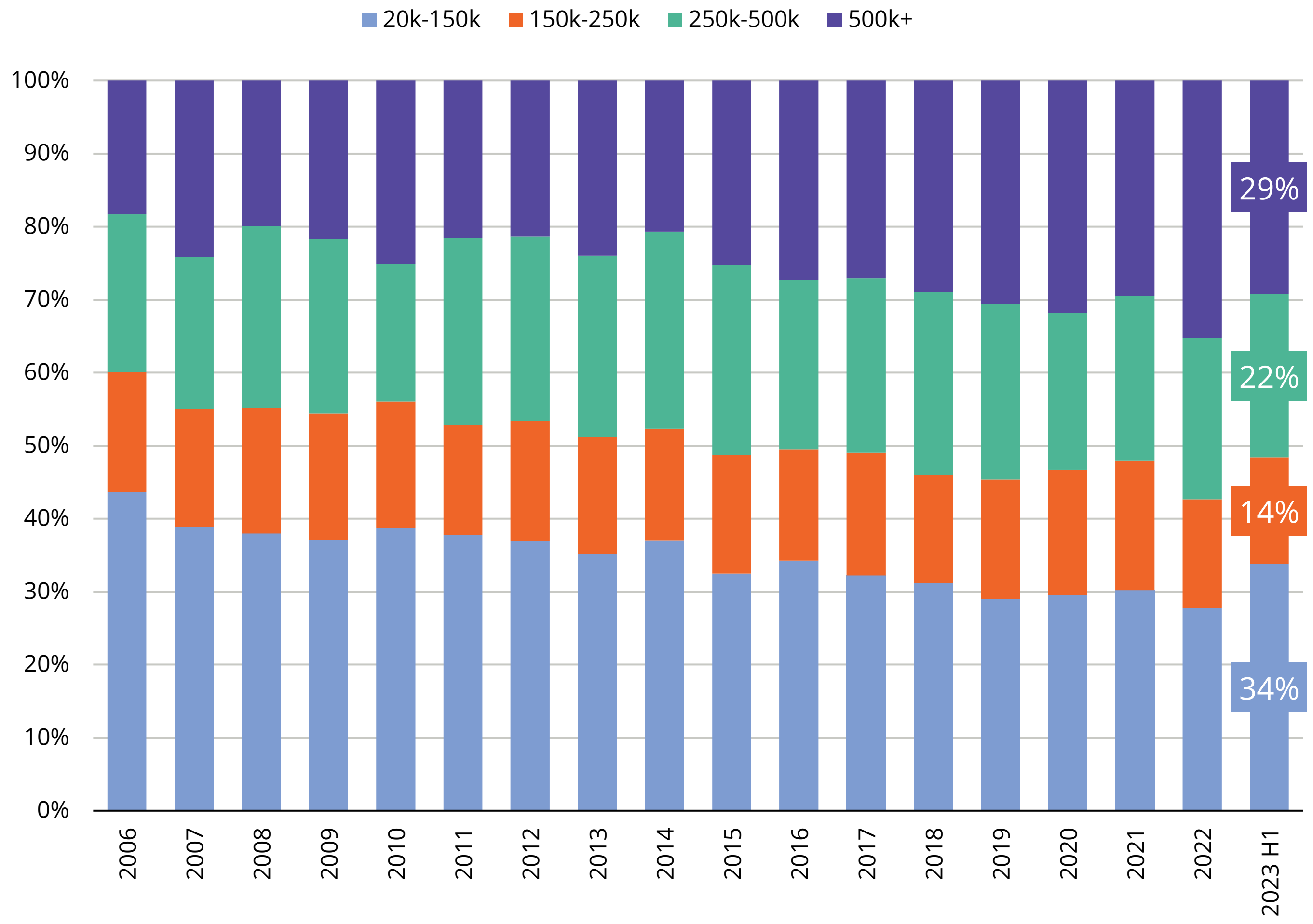
3.4%

Leasing activity as a percentage of inventory in Tier II markets.

Tier II markets saw a larger amount of leasing activity as a percentage of inventory compared to Tier I markets in 2021, 2022 and 2023 H1.

Source: AVANT by Avison Young, CoStar

Tier I & II industrial leasing activity



Source: AVANT by Avison Young, CoStar

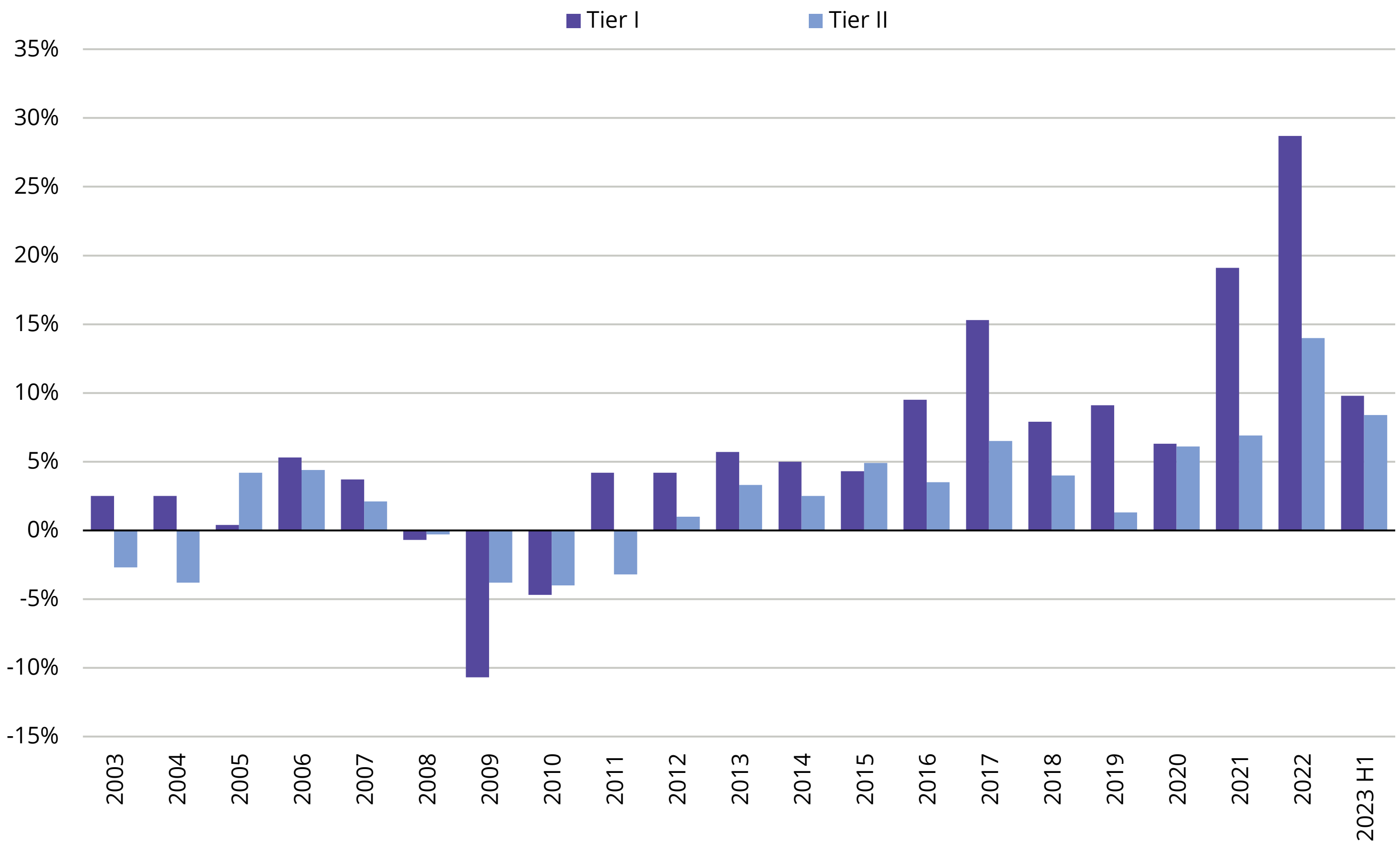
34%

Of leasing activity across Tier I & II markets has taken place in the 20k-150k building size bucket.

Leasing volume recedes from the peak of 2021, with 97.5 msf of leasing activity in the first-half of 2023. The vacancy rate for Tier I & Tier II markets remains below the national average.

Annualized rent growth

Annualized rent growth in %



+7.3%

5-year rent Compounded Annual Growth Rate (CAGR) for Tier II markets.

Rental growth in Tier II markets has performed with more stability. Rental growth in Tier I markets has been sporadic with a significant decline taking place in 2023.

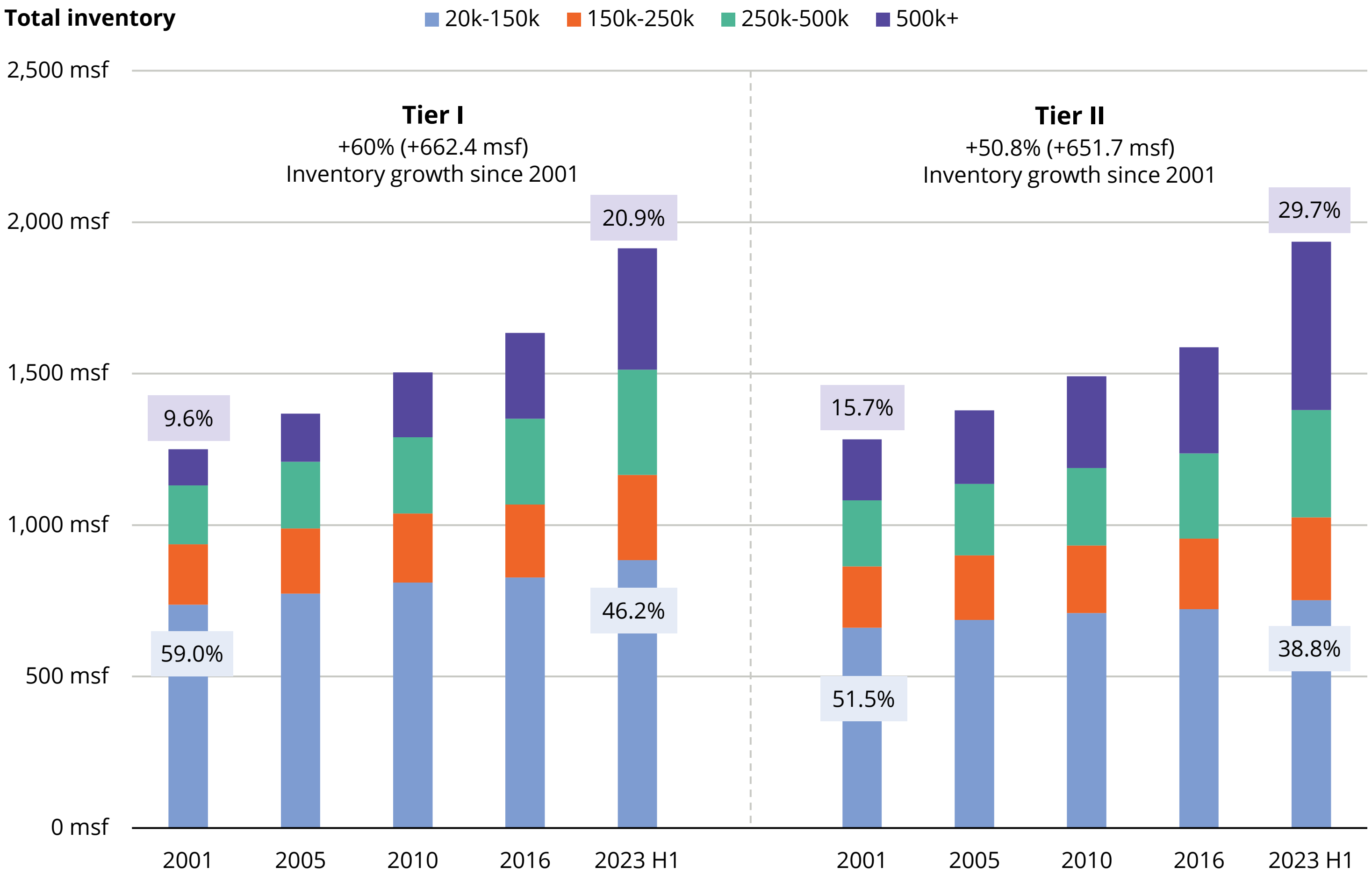
Source: AVANT by Avison Young, CoStar

Section 04

Industrial market inventory breakdown

Development since 2010 has been largely & disproportionately focused on the Big Box space, with limited new space options in the 20k-150k sf building segment.

Industrial inventory by size bucket



+197.8%

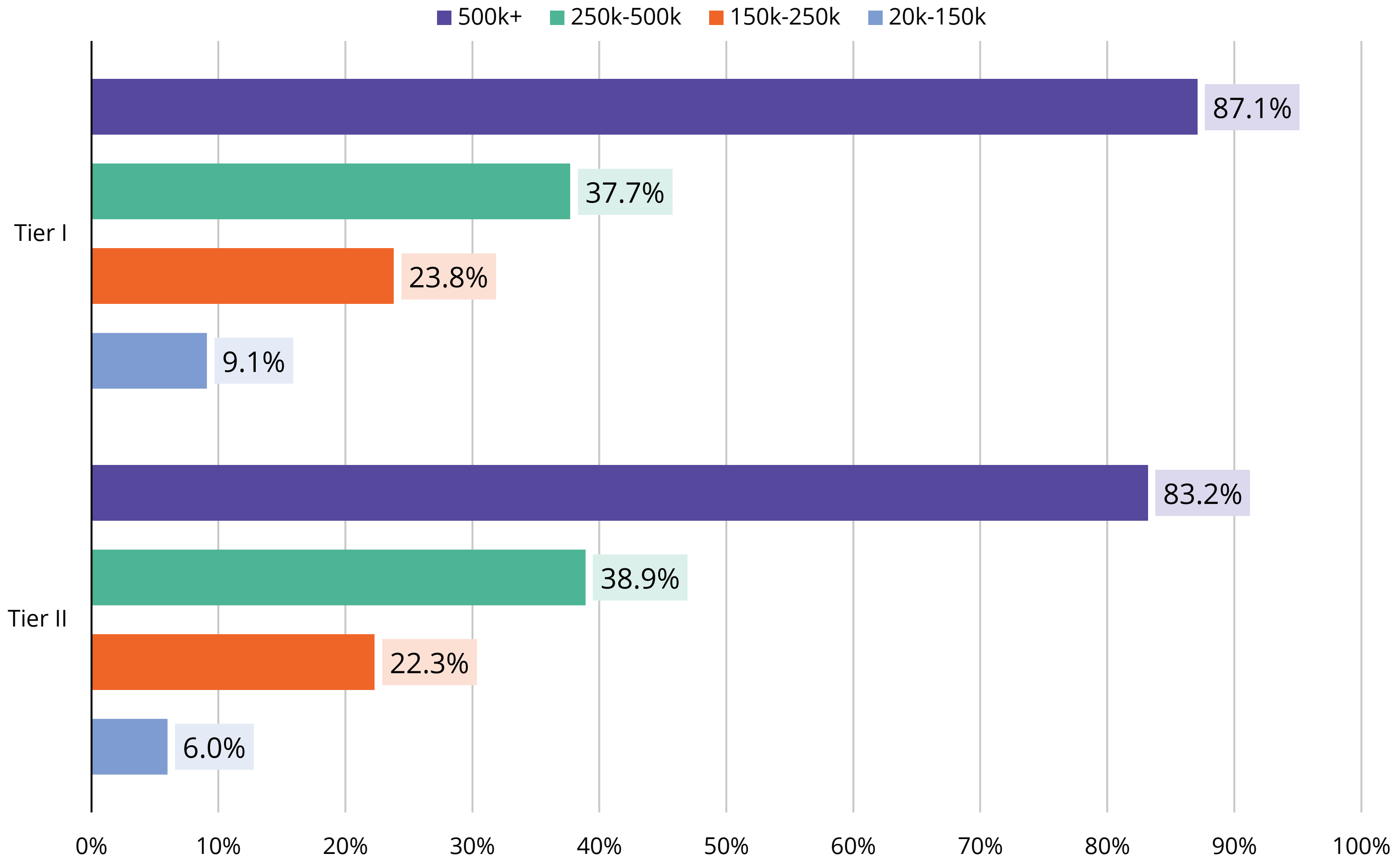
Growth in 500k+ sf size bucket inventory since 2001.

The 20k-150k sf size bucket has diminished as a total proportion of overall inventory by nearly 23% in both Tier I and II markets. Development has been focused in the 500k+ sf range, as this bucket represents nearly a third of all inventory in Tier II markets.

Source: AVANT by Avison Young, CoStar

Inventory growth focused on big box

Total change in inventory since 2010



+6.0%

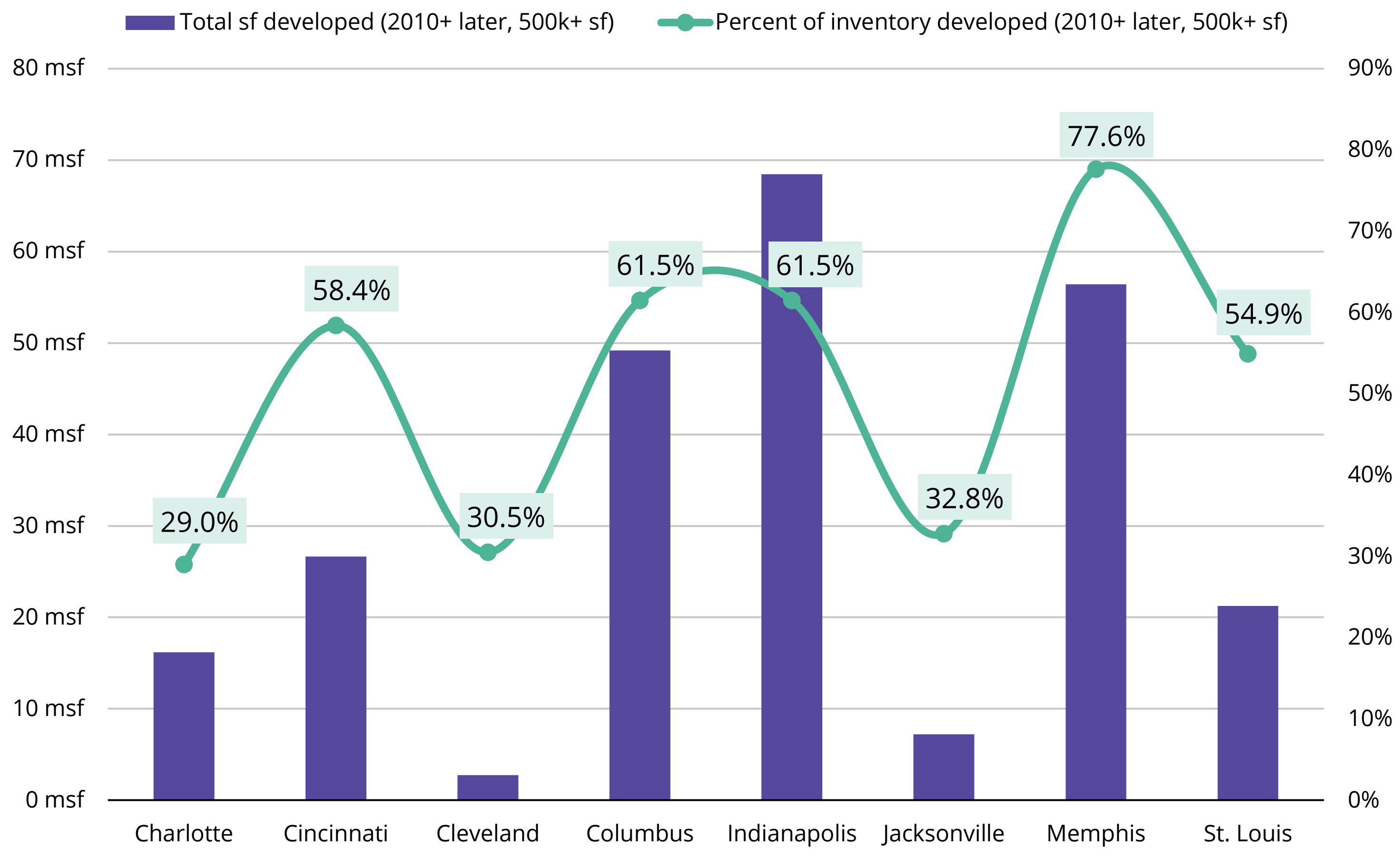
Growth in Tier II inventory for 20k-150k size bucket.

Development has largely been focused on delivering buildings over 250k sf since the Global Financial Crisis, leaving the 20k-150k sf size bucket inventory relatively under supplied in both Tier I and II markets.

Source: AVANT by Avison Young, CoStar

Tier II inventory delivered since 2010 (500k+ sf)

Tier II markets



248m sf

Inventory delivered since 2010 among Tier II markets.

Since 2010, 60.9% of total additional square footage in Tier II markets belong to big-box sites greater than 500k sf. Indianapolis leads the field for production in this size bucket, while Cleveland and Jacksonville have seen less deliveries of this size.

Source: AVANT by Avison Young, CoStar

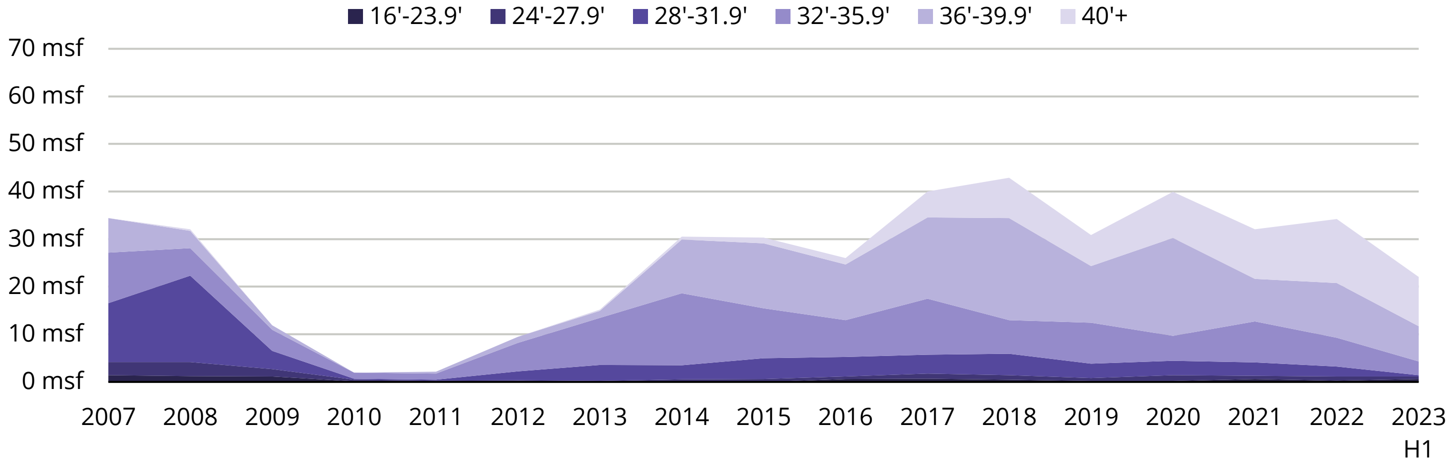
Section 05

Industrial development by market

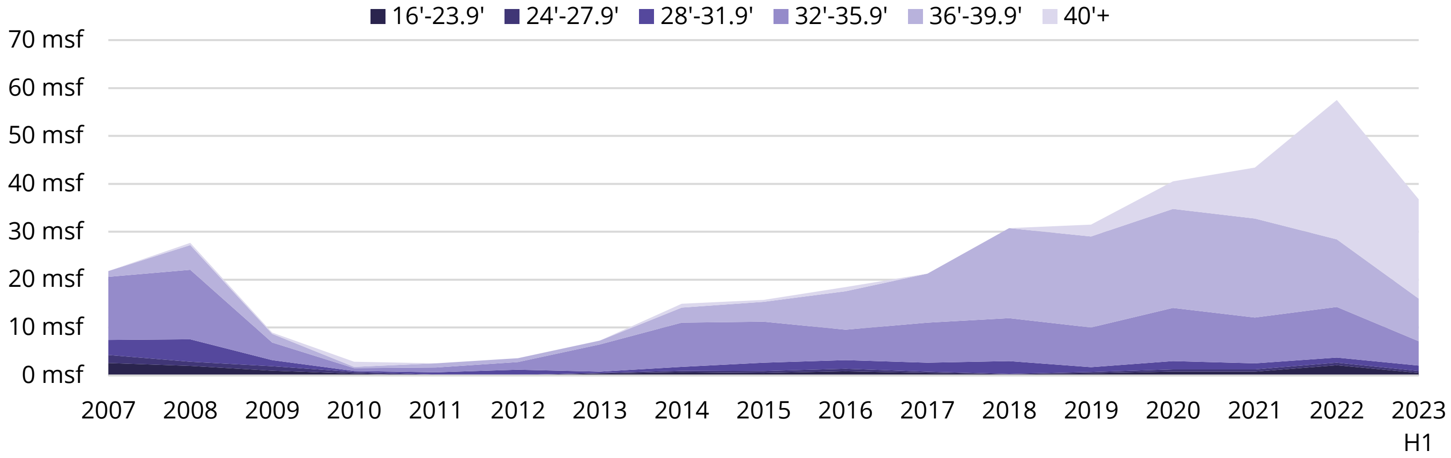
Historic ground-breakings in Q2 2022 have led to historic deliveries, particularly in the Big Box segment. However, significant drops in new ground-breakings starting in Q4 2022 suggest limited options for new space beginning at the end of 2024.

Deliveries by clear height

Tier I markets



Tier II markets



+21.9%

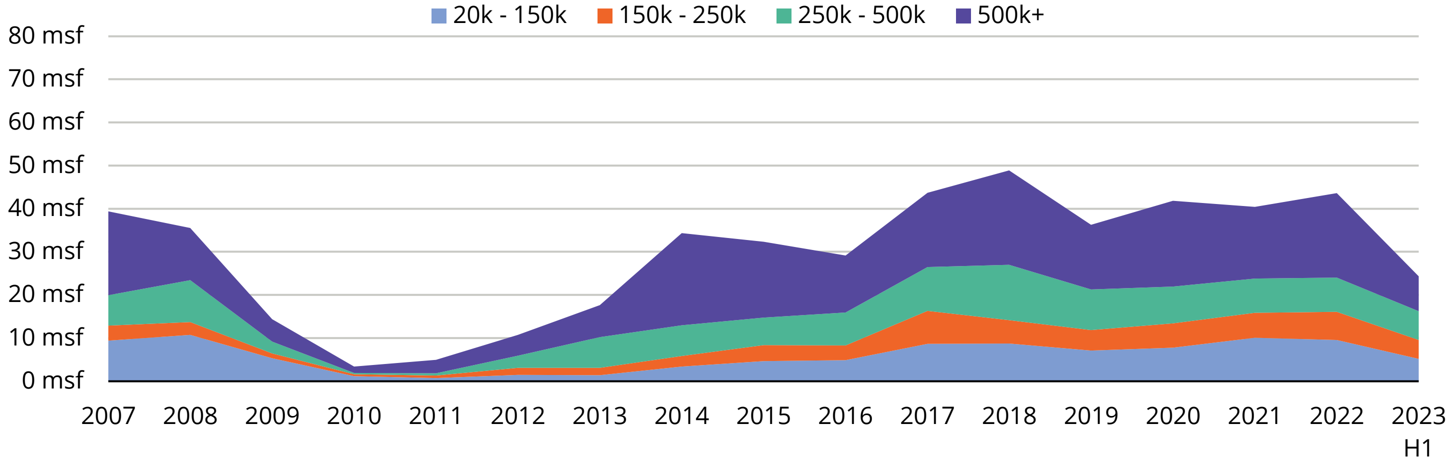
Growth in the share of Tier I and II deliveries of 36'+ since 2018.

The shift for developers toward buildings of at least 36' clear height now represents over 70.4% of all construction since 2018. However, small to mid-size industrial occupiers in Tier I & II markets do not fully utilize 40'+ clear heights.

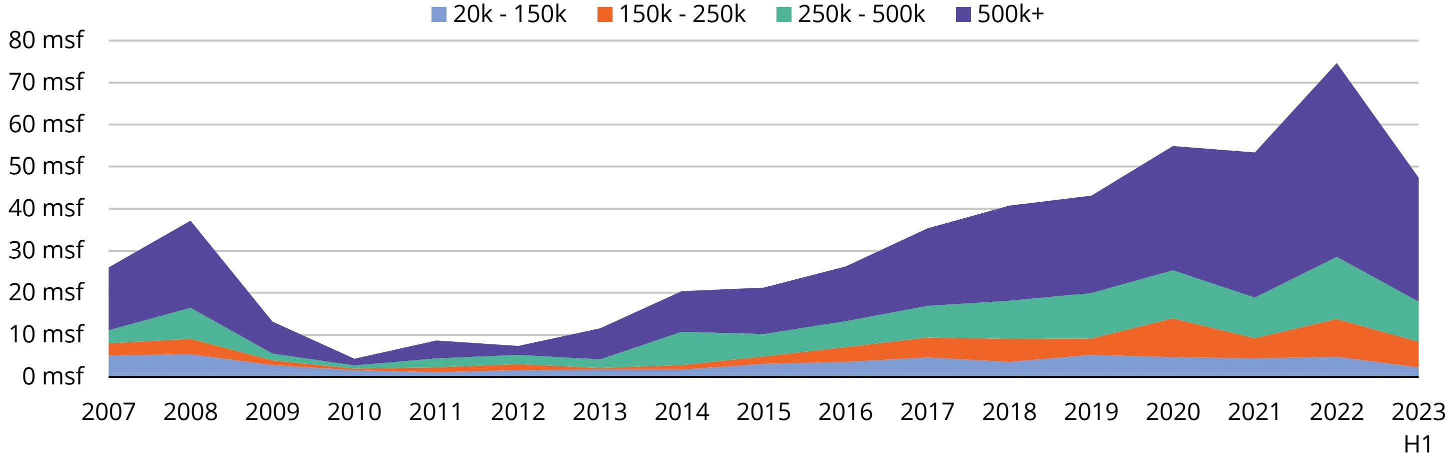
Source: AVANT by Avison Young, CoStar

Deliveries by size bucket

Tier I markets



Tier II markets



+52.2%

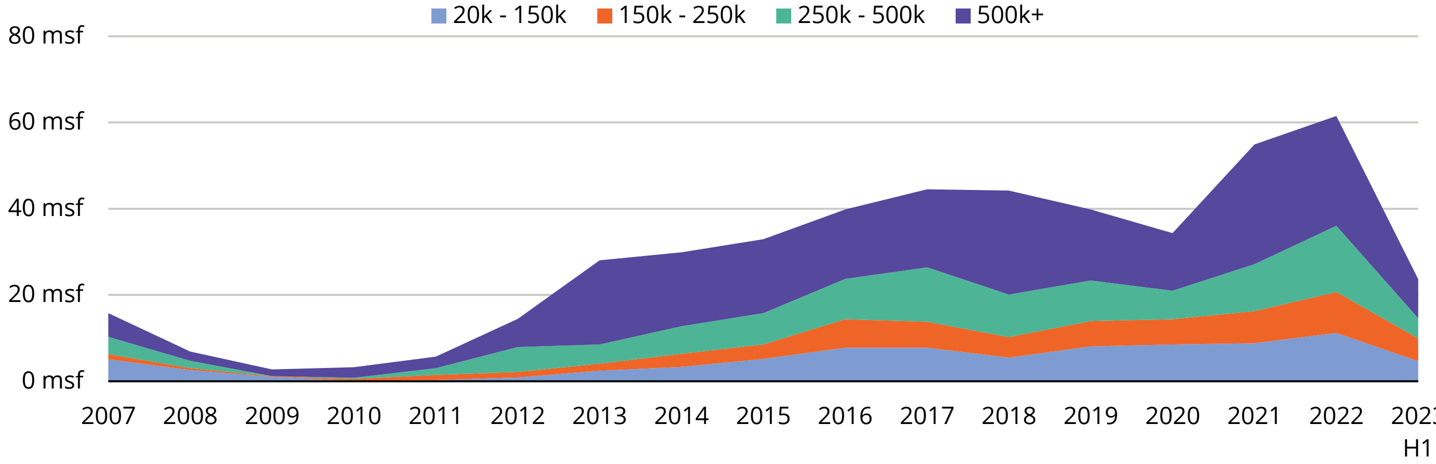
Of new construction since 2018 in Tier I and II markets has been 500k+ sf.

Of the nearly 550m sf of new buildings delivered since 2018, only 13.3% falls within the 20k-150k sf; occupiers of this size bucket have very limited new options throughout Tier I and II markets.

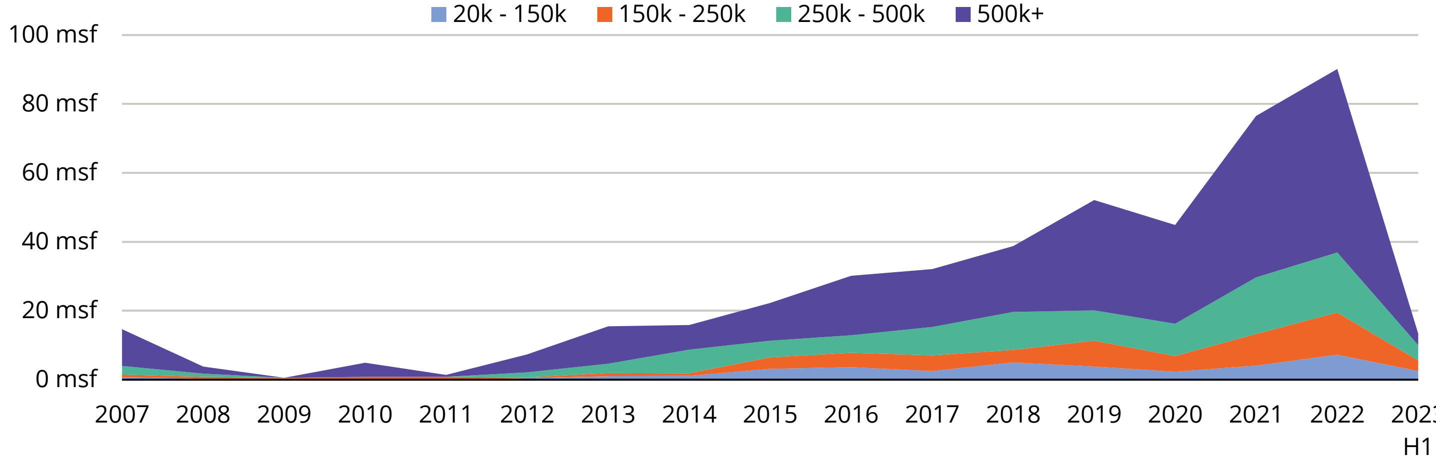
Source: AVANT by Avison Young, CoStar

Historical construction starts by size bucket

Tier I markets



Tier II markets



-71.7%

Decrease in Tier II construction starts comparing 1H 2022 to 1H 2023 across the entire pipeline.

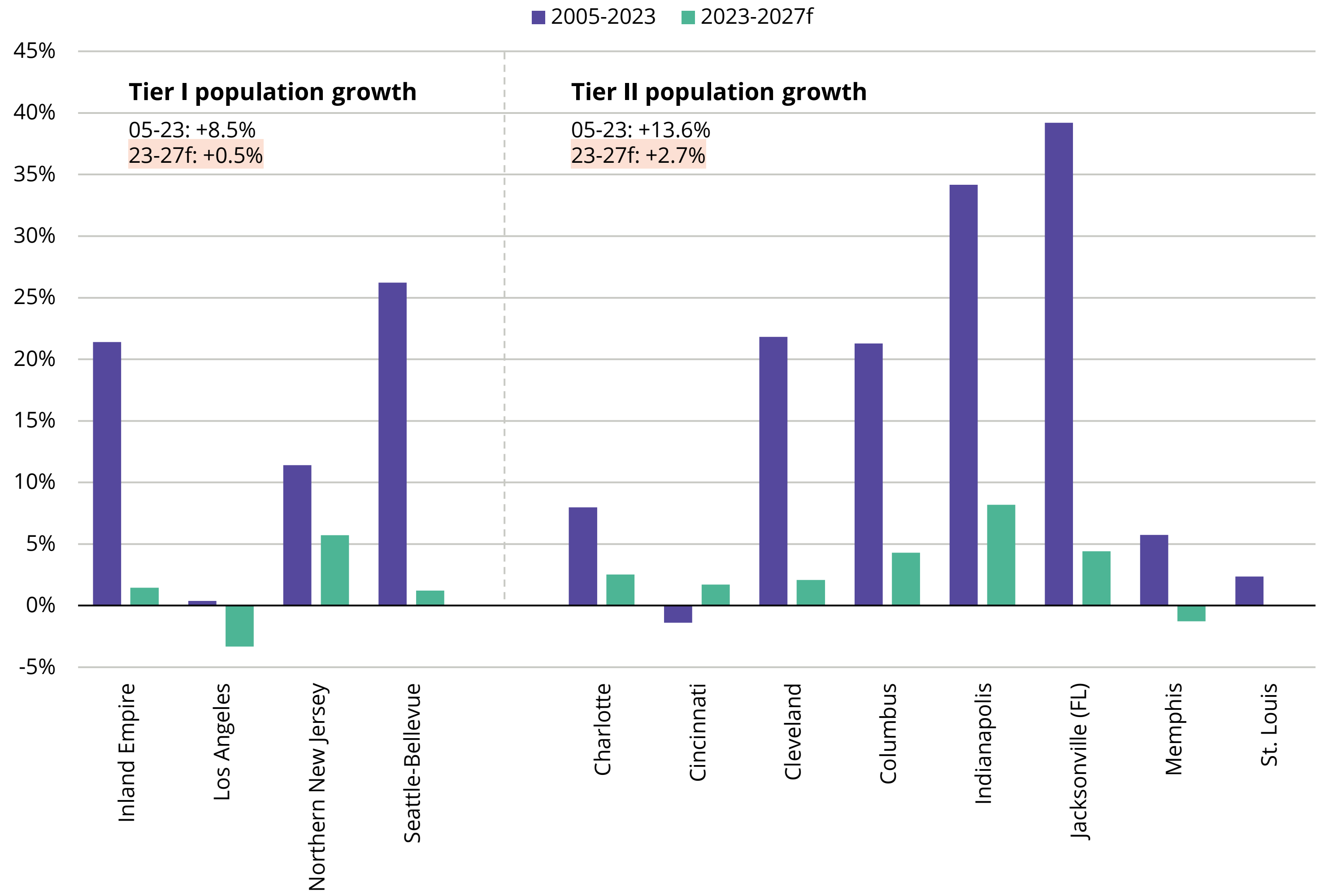
Construction starts through the first half of 2023 fell drastically from 2022 levels in both Tier I and Tier II markets, and if net absorption remains positive, we could start to see potential undersupply.

Source: AVANT by Avison Young, CoStar

Section 06

Population and cost of living trends

Population



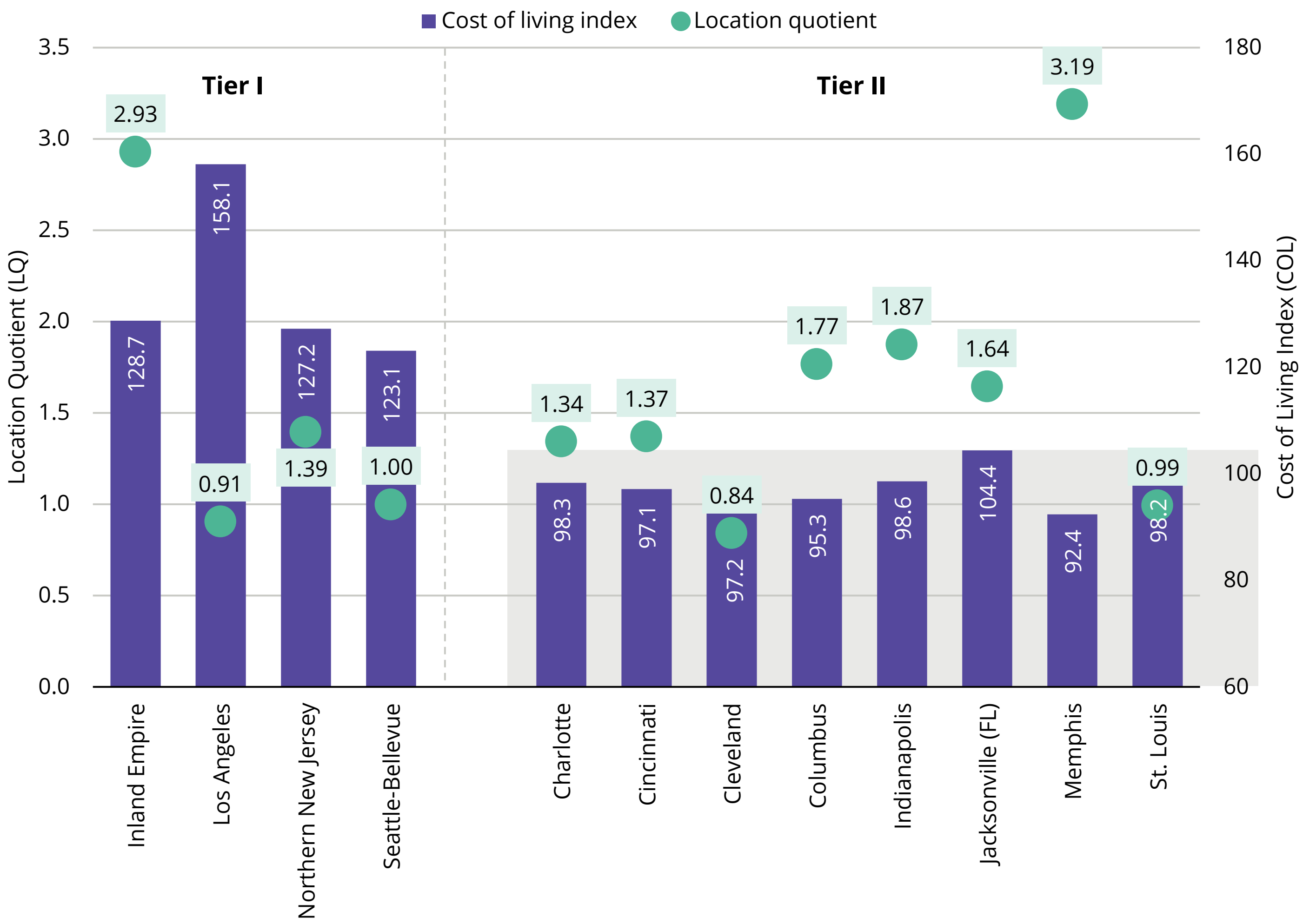
Source: Lightcast

220 bps

Tier II market projected population growth from 2023 to 2027 versus Tier I.

The population in Tier II markets is expected to increase 2.7% over the next five years, up 13.6% since 2005. Tier I market population is expected to increase by 0.5%.

Cost of living



Note: Location Quotient figures over 1.00 represent larger than National average concentrations of specific workforces.
Source: Lightcast (Light Industrial Occupation Metrics)

97.7

The average cost of living index (COL) in Tier II markets is 37 points less than the average COL across Tier I markets.

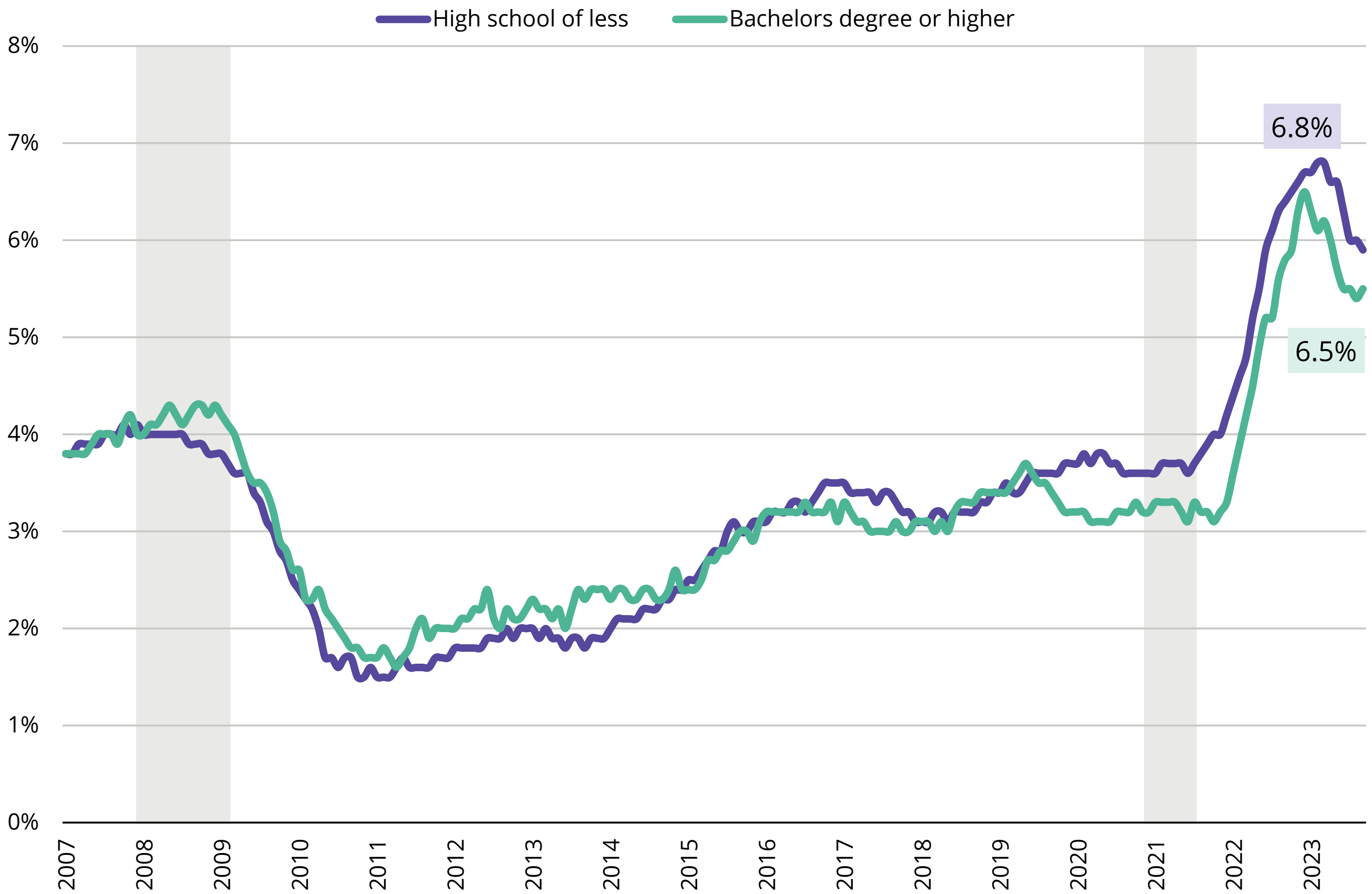
Employers can provide a lower income in Tier II markets across a denser industrial labor pool compared to the rest of the U.S.

Section 07

Industrial workforce, labor and cost of living

Tier II markets offer users more affordable labor, at higher concentrations per business than in Tier I markets, positively impacting operational costs.

Median wage growth



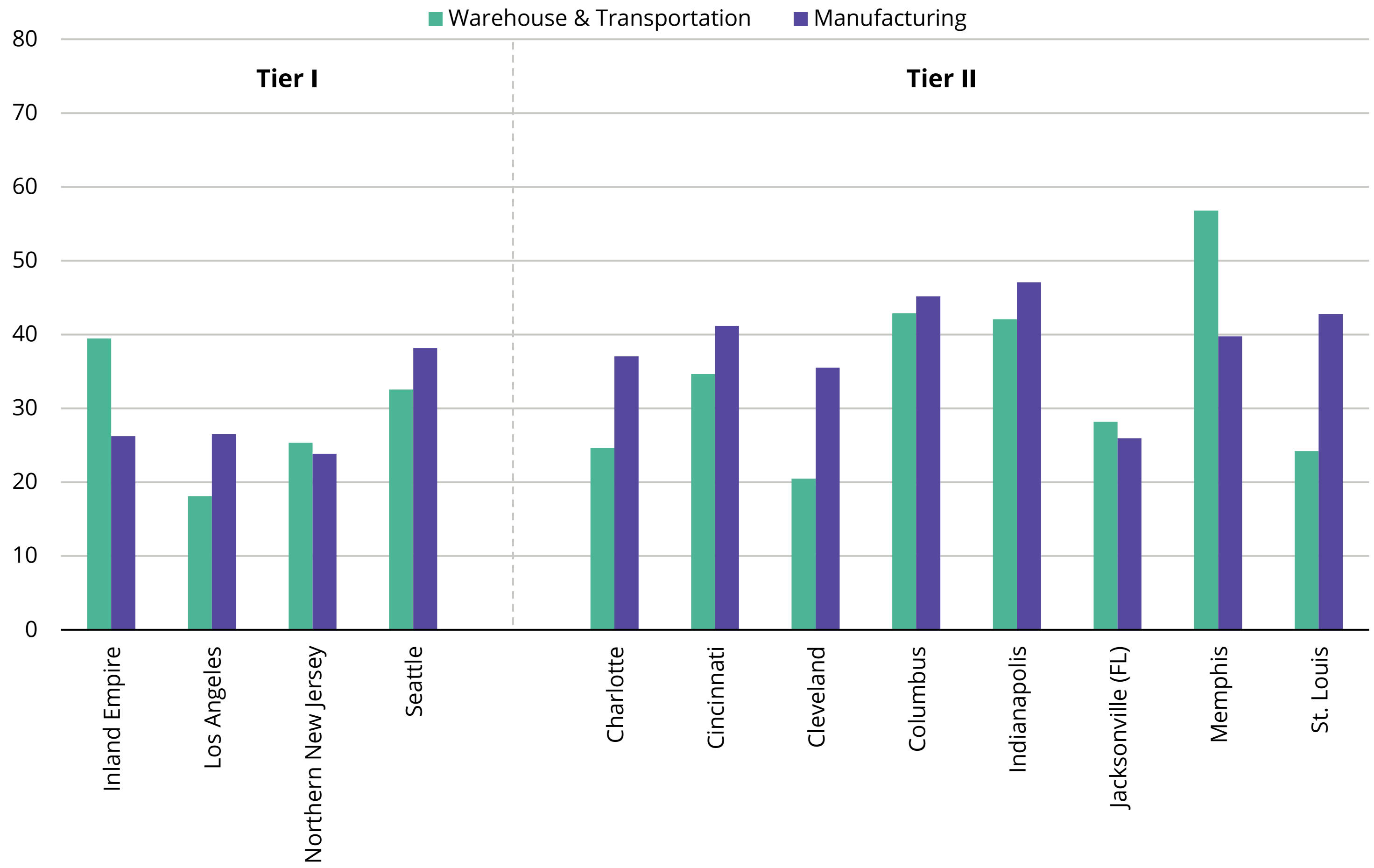
Source: Federal Reserve Bank of Atlanta
Note: The data are 12 month moving averages of monthly median wage growth for each category. Wage computed on an hourly basis. Dark box represents recession.

+59.5%

Percent change in hourly earnings from March 2020 to September 2023.

The second half of 2022 exhibited more wage growth for high school or less educated workforce than for those with bachelor's degrees or higher, all adding to industrial occupier operational costs. Tier II markets offer lower wage costs.

Workforce per business



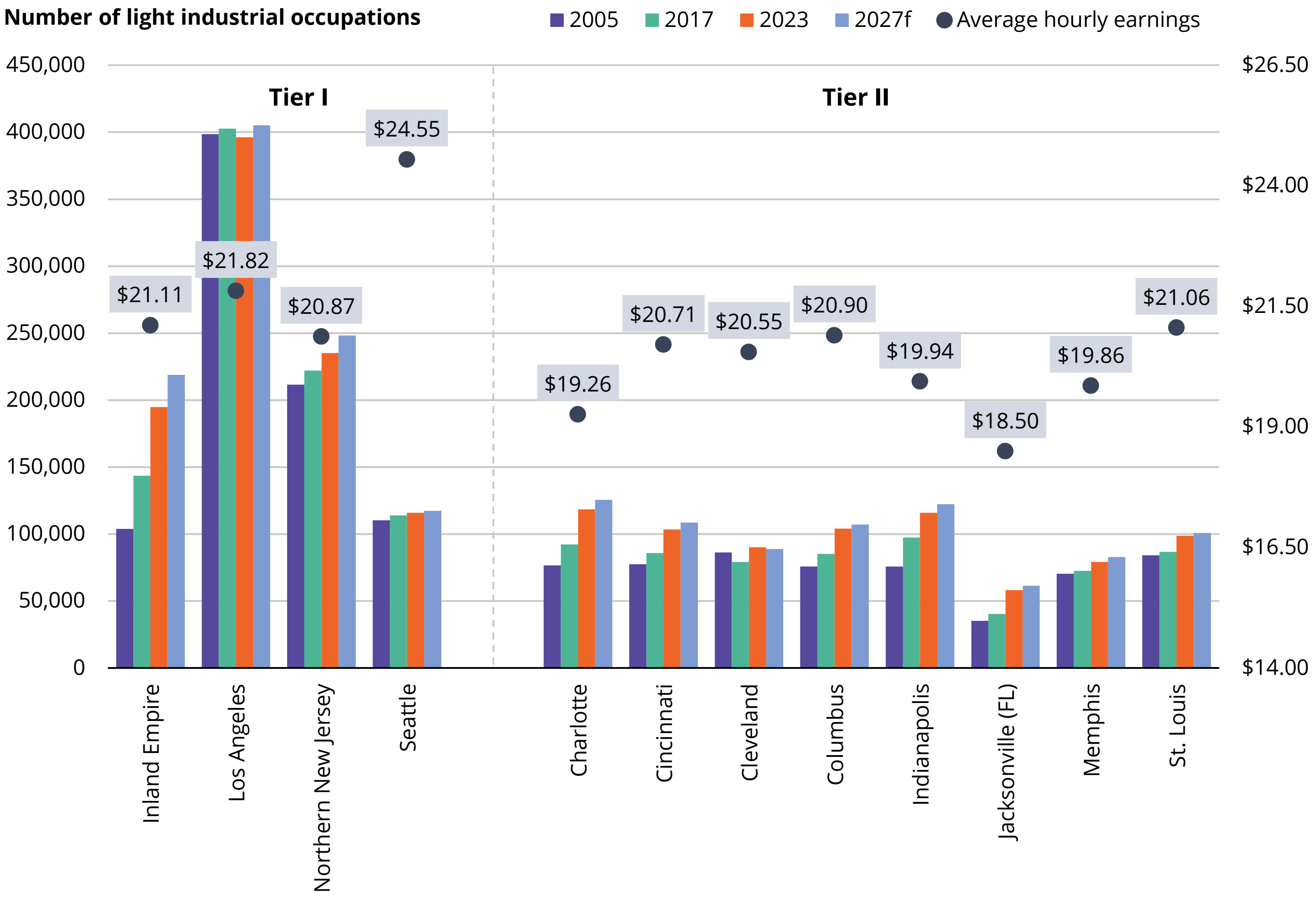
Source: Lightcast (transportation and warehousing)

+28%

More employees per business in Tier II markets.

Tier I and Tier II markets vary in terms of the warehouse and transportation workforce in relation to the number of businesses.

Labor wages and occupation totals



Source: Lightcast (Light Industrial Occupation Metrics)

$20.10

Tier II market average hourly wage compared to a Tier I $22.09 hourly wage.

Tier II markets enjoy higher affordability, and lower average labor costs than Tier I markets. Occupiers are increasingly willing to pay more for rent if it exposes them to cheaper pools.

Section 08

Methodology and criteria

Methodology and criteria

For this analysis, Avison Young used the following criteria when detailing an in-depth examination of Tier I and Tier II industrial market composition, performance, construction trends, investment environment, and primary tenant occupancy factors. Tier I and Tier II markets were specified by Plymouth Industrial REIT.

The Tier I markets of Chicago and Atlanta, which are located within the Golden Triangle* and currently account for 25.9% of Plymouth Industrial REIT's annualized base rent, were excluded from this analysis to highlight the difference between Tier I markets that are outside the Golden Triangle* compared to Tier II markets within it.

Standard definitions included for this analysis are as follows:

1. **Tier I markets:** Inland Empire, Los Angeles, Northern New Jersey, and Seattle-Bellevue
2. **Tier II markets:** Charlotte, Cincinnati, Cleveland, Columbus, Indianapolis, Jacksonville, Memphis, and St. Louis
3. **Inventory included:** +20,000 sf size; existing, under construction, and under renovation
4. **Space use:** Distribution, industrial, light industrial, warehouse; excludes Manufacturing, truck terminals and outdoor storage

***The Golden Triangle: Logistics Pathways Influence CRE Opportunities:** Not all last-mile logistics pathways or models are created equal. Industrial and e-commerce investment is clustering around a region I have long defined as the "Golden Triangle." The term describes a geographic region that extends from the pinnacle at the Great Lakes southwest to Texas and the Gulf Coast to form one side or leg of the triangle, and then southeast through Tennessee, Alabama, Georgia, the Carolinas, and Florida to form the other side of the triangle. This region is golden in large part because it encompasses five of the seven Class I railroads, more ports than any other regions of the U.S., and 70 percent of the American population. In other words, the Golden Triangle is the epicenter of logistics infrastructure and where the dominant e-commerce, package delivery, and retail companies are locating their "shop-online-and-deliver-to-me" warehouses. In fact, the Golden Triangle now surpasses the West Coast market in virtually every industrial CRE metric, including new construction, transaction activity, and pricing. One other metric further brings into focus the impact that the Golden Triangle continues to have on CRE activity — the ratio of shipping containers handled by West Coast ports in comparison to East and Gulf Coast ports. This ratio has shifted over the past two decades — especially in the past decade with the opening of the expanded locks in the Panama Canal in 2015 — from 65:35 in favor of West Coast ports in 2000 to 50:50 currently. The rise of Amazon, an increase in online e-commerce, and advances in last-mile technologies pushed e-commerce sales from less than 10 percent of total retail sales to 14 to 16 percent over the last five to six years, according to the St. Louis Federal Reserve's Federal Reserve Economic Data system.6 So, it is no surprise that the Golden Triangle is increasingly on the radar of institutional investors. This heightened investor activity is on full display with the 2021 merger activity involving KSU. After KSU accepted an offer earlier this year to merge with CP, CN entered the bidding war, and KSU reversed course and accepted CN's higher bid in May.7

– CCIM Institute, "Last-Mile Logistics: Commercial Real Estate's Growth Engine", Q22021

For more market insights and information visit **avisonyoung.com**

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