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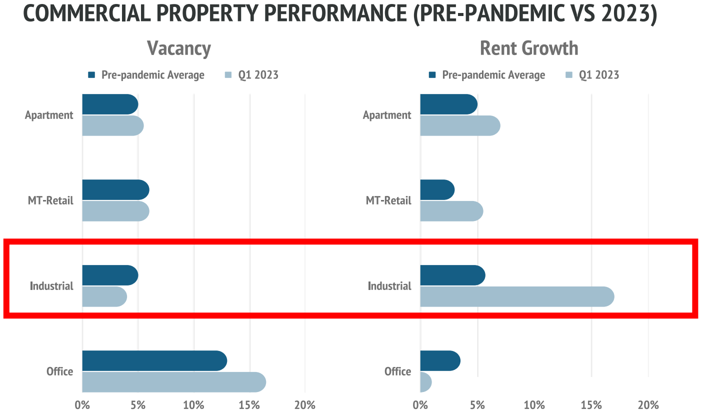
INDUSTRIAL SECTOR OPPORTUNITY

Introduction

The industrial real estate segment, spanning approximately 22 billion square feet,[1] is one of the largest asset classes of the commercial real estate market in the US and thus is a sought after, viable investment opportunity that has delivered superior risk adjusted returns to investors in the past several years. This paper introduces different elements that comprise industrial real estate, subsequently focuses on the fundamentals and advantages of "industrial real estate investments", analyzes dominant trends and identifies potential opportunities in the mid-to-long term. It delivers a viewpoint from a direct real estate investing perspective rather than a sector-based analysis of real estate public equities whose valuations tend to fluctuate quarterly in rapid correlation with overall market moves.

COMMERCIAL PROPERTY PERFORMANCE (PRE-PANDEMIC VS 2023)



SOURCE: Marcus & Millichap

Definition

Industrial real estate refers to structures used primarily for manufacturing, research & development, production, maintenance, storage and / or distribution of goods.[2] Although widely known for its critical role within the global supply chain, industrial real estate encompasses considerably more than logistics operations and it can be divided into 4 large categories: storage and distribution / logistics, manufacturing / factories, flex space and data centers / digital infrastructure. Post pandemic, all four types have experienced tremendous growth, driven by e-commerce, technology integration and manufacturing.

- Warehouses – *Storage & Distribution*: As the leading subcategory of industrial real estate, warehouses serve various functions that mainly involve storage, distribution, and logistics. These facilities are an integral part of the modern supply chain, playing a pivotal role in regional storage and distribution. They are typically characterized by their large footprint, elevated ceilings, and loading facilities, catering to a wide array of uses.

  Industrial storage, often housed within these warehouses, is increasingly being used for specific purposes like food and pharmaceutical storage and distribution. As a direct result, purpose-built properties for cold storage and last mile delivery have witnessed high demand to serve increasing online sales volume of groceries and fast home delivery efforts.

- Manufacturing – *Factories:* Manufacturing properties are the second largest category of industrial property, and it can be further divided into heavy manufacturing and light assembly. Heavy manufacturing properties are large, highly equipped facilities, located outside of urban areas and are used for a wide range of production from raw materials to finished goods. They usually require customization to the type of manufacturing and an expensive fit-out, such as auto assembly. In contrast, light assembly properties are smaller, and easier to reconfigure as they house more portable equipment because the parts being assembled are smaller than those made in a heavy manufacturing plant.[3]

- Flex Space: Flex space is a hybrid of warehouse/manufacturing space and retail/office space. It caters to tenants who seek specialized areas to accommodate a broad range of business needs including production, fulfillment, research and development, lab & testing activities, showroom sales and back office.

- Data Centers – *Digital Infrastructure*: A byproduct of increasing integration of technology with business, expanding digital infrastructure and the recent artificial intelligence boom, data centers are highly specialized, niche facilities used by companies to store data and maintain network connectivity. These properties are fairly large and require special wiring, security and cooling systems.[4] Compared to conventional industrial leases based on square footage, these properties are leased according to each tenant's utility usage due to high electricity consumption.

[1] https://www.saundersrealestate.com/resources/brokerage/the-nearly-21-trillion-commercial-real-estate-market-challenges-and-opportunities/
[2] https://www.naiop.org/education-and-career/industry-terms-and-definitions/
[3] https://www.prologis.com/what-we-do/resources/industrial-real-estate-building-types
[4] https://www.prologis.com/what-we-do/resources/industrial-real-estate-building-types

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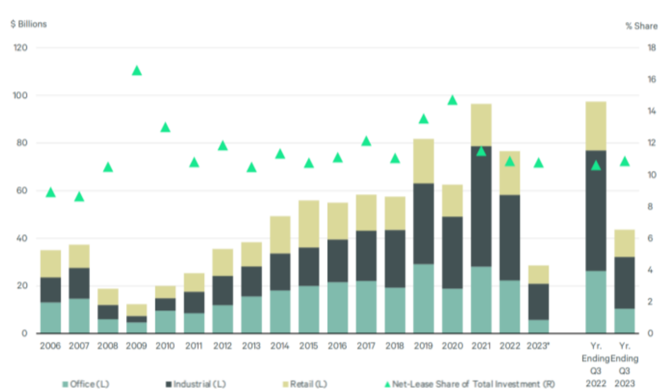
Advantages of Industrial Real Estate Investment

- Duration/Lease Term: Unlike multifamily which typically offers one-year leases, industrial leases generally last three to ten years, some can even go up to 25 years.[5] Hence, industrial investments with credit tenants may provide more predictable cashflows to investors and through appropriate, contractual rent increases prove to be a successful inflation hedge over the long term.

- Stability: Industrial tenants typically invest a significant amount of initial capital into business specific equipment and customized fit out. Therefore, they are inclined to longer occupancy of their spaces to avoid prohibitively high moving expenses while amortizing their fixed investment costs. Inherently, this results in robust lease renewal activity which bolsters industrial real estate's resilience to economic cycles.

- Operation/Management: Some industrial properties can require less maintenance compared to other CRE like multifamily or hospitality, primarily due to their simple design featuring large, open spaces with minimal high-end features. However, for properties, such as heavy manufacturing, that do require intensive maintenance, it is more common for the tenants to supplement operations with in-house engineers and safety teams. On the other hand, for light industrial facilities, the widespread use of triple net leases (NNN) shifts the responsibility for maintenance, insurance, and property taxes to the tenant, further lowering costs for property owners. This combination of factors makes select industrial properties a low maintenance and economically attractive option in the commercial real estate market.

NNN Lease Share of Total Investments

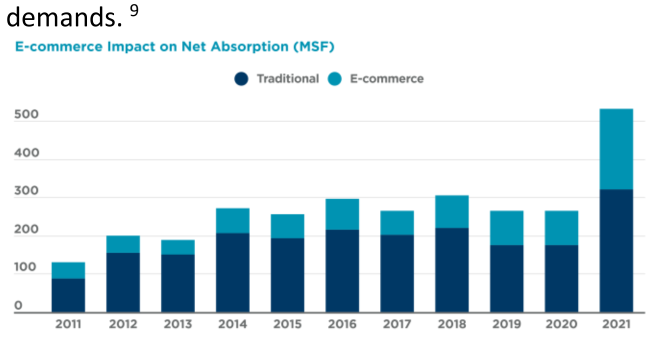


- Incentives: As a result of the recent political direction to focus on US based manufacturing, the federal government and the states are offering more incentives to spur domestic US industrial investment. In New York, for example, qualified industrial properties can benefit from up to 16 years of full and 9 years of partial real estate tax abatement under the ICAP.[6] Other programs targeting job creation and industrial business expansion are prevalent across the US, including Chapter 313 Agreements in Texas, Economic Development Ad Valorem Tax Exemption in Florida, and Industrial Property Tax Abatement in Michigan, as well as various enterprise zone programs nationwide.

- Relative Liquidity: Strong fundamentals and superior return profile make industrial investment favorable. Combined with flexible and versatile utilization of tenant spaces, industrial properties witness high demand from investors creating a relative liquidity for owners.

Industrial Sector Fundamentals

- Paradigm Shift in Commerce: Recording a remarkable 71.8% increase since 2019 and reaching a total volume of $1.1 trillion in 2023, US online retail sales point to a generational paradigm shift in shopping habits. While convenience and lower pricing compared to brick-and-mortar retail are main considerations, integration of advanced technology into marketing of these goods is also a significant driver of online sales activity. Highlighted by a McKinsey report, over 35% of Amazon purchases are driven by targeted, personalized advertising, a trend showing no signs of abating.[7] As a result, US e-commerce activity is expected to increase approximately 10% every year for the foreseeable future, significantly altering the retail landscape. This, combined with the "need for speed in delivery & returns"[8] will subsequently influence the industrial real estate sector, particularly in terms of logistics and warehouse space demands. [9]

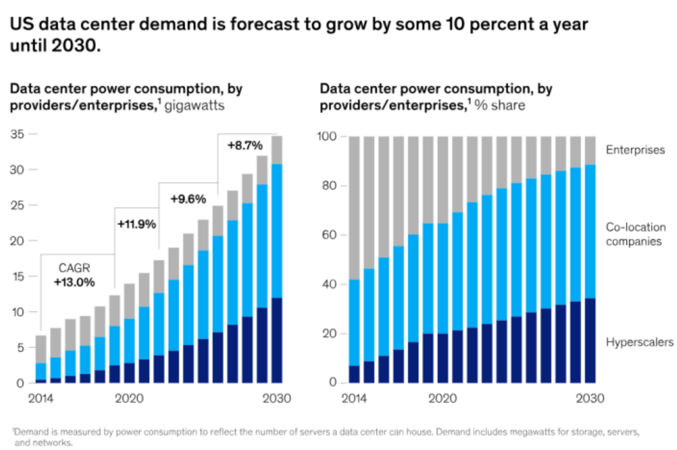


5 https://leaddeveloper.com/industrial-real-estate-the-risks-the-benefits/
6 https://www.nyc.gov/assets/finance/downloads/pdf/icap/icap_benefit_schedule.pdf
7 https://www.mckinsey.com/industries/retail/our-insights/how-retailers-can-keep-up-with-consumers
8 https://www.cbre.com/press-releases/cbre-reports-ecommerce-returns-could-total-more-than-66-billion-florida
9 https://www.insiderintelligence.com/content/what-retailers-need-know-about-2024-and-beyond-5-charts

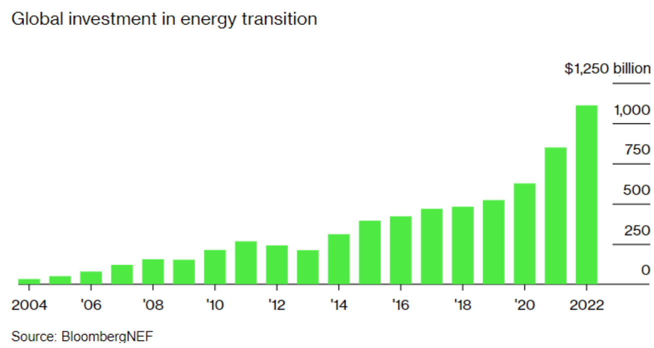
- Technology Evolution: Technological advancements in key sectors like semiconductors, electric vehicles (EVs), batteries, and artificial intelligence (AI) [and related key policy implementation] are driving significant expansion in the US industrial real estate market.

  For instance, the CHIPS and Science Act of 2022 aims to double the US global market share in chip production to 20% with a $280 billion investment. This will be an important catalyzer for the US semiconductor production, potentially necessitating an additional 200 million square feet of commercial real estate for chip facilities, as per a Savills report.[10] Another example is the Clean Vehicle Tax Credit of the Inflation Reduction Act, that is projected to spur over $52 billion in investments in the US for the EV supply chain. These investments directly create demand for diverse industrial space serving every aspect of the EV manufacturing process.[11]

  Additionally, developments in AI are significantly boosting the demand for data center leasing. According to TD Cowen, a staggering 2.1GW of data center leases were signed within a mere 90-day span in 2023. Considering the total market capacity in the US, which is around 20 GW, this immediate surge in leasing activity could be indicating a healthy future demand driven by rapid development / incorporation of AI.[12]

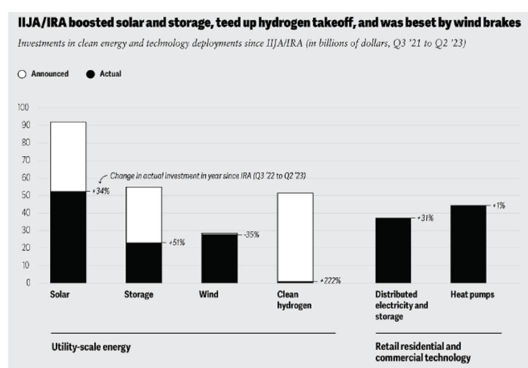


- Energy Transition: Industrial real estate market also benefits from the shift towards renewable energy. In 2022, Bloomberg NEF reported that investments in decarbonizing energy exceeded $1.1 trillion, matching investments in fuel-based power generation for the first time.[13]



Clean technology investments into industrial factory spaces producing solar modules, wind turbines, and batteries, surged to $80 billion in 2022, a 44% increase from the previous year. This growth is supported by the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA), which aim to expedite the deployment of renewable technologies.[14]

By the end of 2023, over $227 billion was invested in renewable energy technology, with more than half realized through direct investments, tax credits, and incentives.[15] Geographically, regions like California, Texas, and Florida, known for their decarbonization efforts and renewable resources, have become focal points for industrial real estate investment in the renewable sector. The policies & incentives in these states are attracting both general- and sector-specific investors seeking lower operating costs.



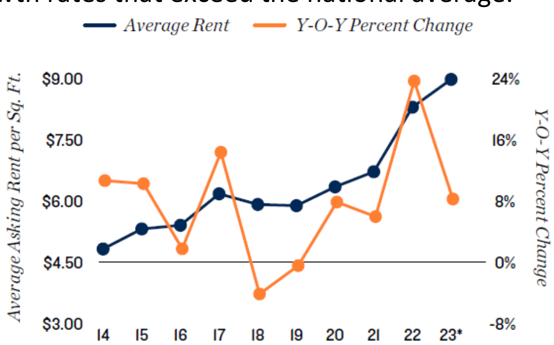
Current Market Conditions

While the pandemic accelerated e-commerce growth and the need for warehouse space across the nation, recent statistics indicate a shift toward a more sustainable growth, with an expected decline in overall industrial leasing activity from the record levels of 2021-22. In Q3 2023, vacancy rate increased to 5% compared to the historically low 3.5% seen in the past

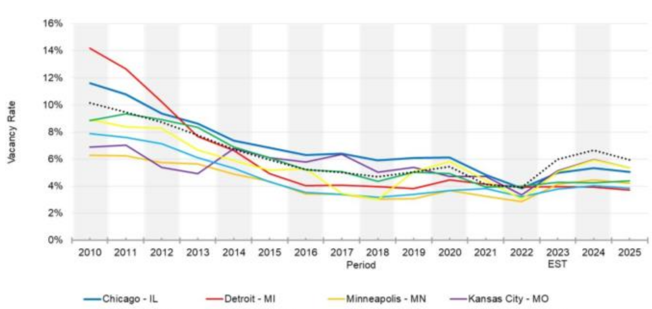
[10] https://www.globest.com/2023/09/05/u-s-needs-more-space-to-meet-semiconductor-chip-demand/
[11] https://www.iea.org/news/demand-for-electric-cars-is-booming-with-sales-expected-to-leap-35-this-year-after-a-record-breaking-2022
[12] https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/investing-in-the-rising-data-center-economy
[13] https://www.bloomberg.com/news/articles/2023-01-26/clean-energy-fossil-fuel-investment-tied-for-first-time-in-2022
[14] https://about.bnef.com/blog/energy-transitions-new-industrial-landscape/
[15] https://www2.deloitte.com/us/en/insights/industry/renewable-energy/renewable-energy-industry-outlook.html

five quarters. This period also marked the delivery of over 160 million square feet ("sf") of new space, built in response to a pandemic-induced spike in demand which proved to be unsustainable at that level due to macroeconomic uncertainties. This led to a net absorption rate of only 40% compared to the five-year high in Q2 2022.[16] Consequently, growth rate of average US industrial asking rent has plateaued in the most recent quarter.

- Rent: National industrial asking rent grew by 7.7% YoY in 2023, marking a steep decline from the extraordinary 24% growth in 2022, yet still surpassing the historical average of 4%. Southern California, particularly with markets like Inland Empire, LA, and Orange County, continues to lead in rent growth, exhibiting double-digit increases of 15.2%, 11.6%, and 11.6% respectively. Other regions such as Miami, New Jersey, Boston, Seattle, Portland, Bridgeport, and Phoenix also exhibit rent growth rates that exceed the national average.[17]

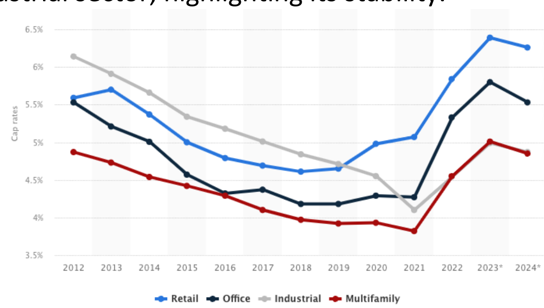


- Occupancy: In 2023, industrial vacancy rate rose marginally to 4.6% from the previous year's historic low. Despite the prevailing economic uncertainties, the sector remained stable, reflecting strong fundamentals. Nationally, notable logistics and manufacturing markets continued to exhibit low vacancy rates similar to 2022, with Columbus at 1.6%, Indianapolis at 3.2%, Nashville at 2.4%, and Charlotte at 3%. These figures point to a continuously strong demand and occupancy in these markets.[18]



- Investment Sales: In 2023, industrial real estate investment sales volume was estimated at $48.6 billion, a decrease from $101 billion in 2022 and the peak of $129 billion in 2021. The cooling off in the market resulted largely from the tightening of financing markets since early 2022. Despite the lower sales volume, 2023 saw a trend towards all-cash purchases and a 6% YOY increase of sale price to $130 per sqft, driven by confidence in the sector's strong fundamentals and growth potential.[19]

- Cap Rates: Over the past decade, industrial properties have experienced a steady decline in cap rates, reflecting an increasing market value. Recent data indicates a sector wide cap rate around 4.9%, the lowest among major commercial real estate (CRE) sectors. This signifies strong investor confidence and healthy valuations in the industrial sector, highlighting its stability.[20]

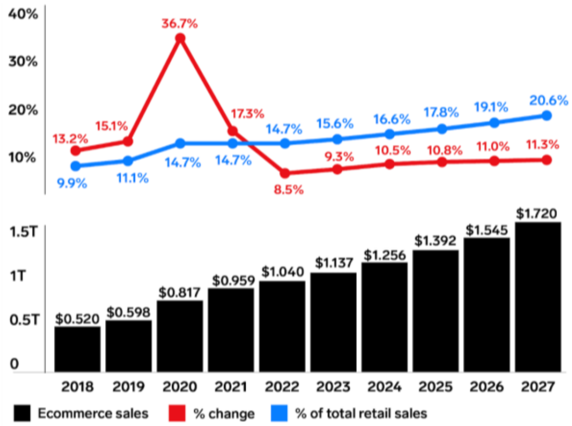


- Current and future supply: In 2023, industrial sector saw a record-breaking delivery of 508 million sf, significantly surpassing the average of 221 million sf and marking the most substantial supply growth in over 30 years.[21] Nonetheless, demand continued to catch up to incoming supply causing vacancy rates to rise only marginally. With construction starts down by over 50% from 2022 and expected to remain low, industrial real estate market is likely to continue outperforming other CRE sectors in terms of rent growth and occupancy, in the mid- to long term, driven by constant supply-demand imbalance.[22]

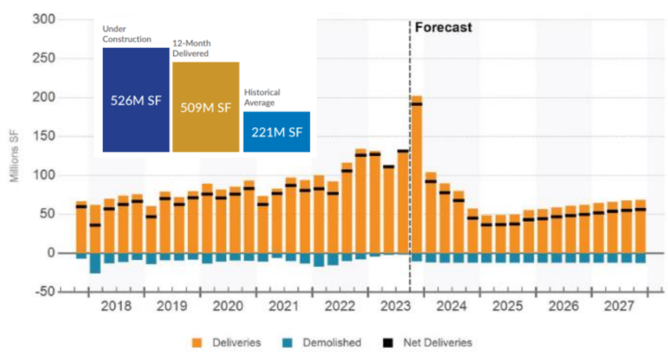
[16] https://www.colliers.com/en/research/national-industrial-q3-2023
[17] https://www.commercialedge.com/blog/national-industrial-report/
[18] https://www.commercialedge.com/blog/national-industrial-report/
[19] https://www.commercialedge.com/blog/national-industrial-report/
[20] https://www.statista.com/statistics/245008/us-commercial-property-cap-rates/
[21] https://go.plantemoran.com/rs/946-CTY-601/images/FINAL_2023_Q3_National_Industrial_Real_Estate_Market_Report_PMR.pdf?version=0
[22] https://www.commercialsearch.com/news/whats-next-for-industrial-real-estate/

Market Outlook

- E-commerce Constantly Fuels the Market: US Department of Commerce data indicates that since Q3 2022, e-commerce growth rate has consistently outstripped total retail growth, with projections showing an upward trend.[23] Insider Intelligence forecasts that e-commerce will continue its double-digit growth over the next five years, potentially reaching a market value of $1.72 trillion by 2027.[24] This continued growth trajectory suggests a corresponding rise in demand for warehouses and fulfillment centers to support an expanding e-commerce sector.



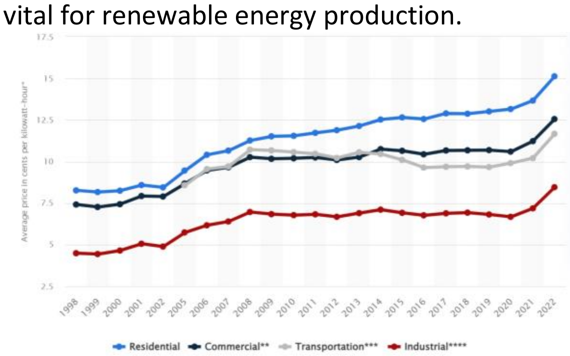
- Shrinking Construction Activity Narrows Supply: In 2023, the industrial sector witnessed a record supply growth. However, construction starts were down over 50% from peak levels, influenced by inflation, high interest rates, and recession concerns.[25] The decline in construction activity is expected to cause new space delivery to fall below 340 million sf in 2024 and stabilize under 240 million sf thereafter.[26]



- Operating Cost Divergence Highlights Prospective Markets: Operating costs, particularly the cost of power, play an increasingly bigger role in the site selection process for industrial real estate. This shift is driven by technological advancements that favor automation over human labor and amplify the demand for digital infrastructure, where power can represent as much as 70% of total operating costs.[27]

  In this context, the stark contrast in utility prices across the nation is particularly noteworthy. While the national average utility costs in 2023 have decreased from their 2022 levels, they remain more than 13% above the previous decade's average. However, regions like Texas, Florida, and Southern California have managed to keep their utility expenses comparatively low through tax exemptions and discounts on energy used in production. This cost-effectiveness has contributed significantly to the growth of industrial real estate.

  Crucially, the US Department of Energy projects that by 2030, clean energy will supply 80% of the country's electricity needs. This projection includes a tripling (3x) of wind power generation capacity and an eightfold (8x) increase in solar energy production.[28] This transition is poised to disproportionately benefit regions with abundant natural resources like wind and sunlight, which are vital for renewable energy production.



- Nearshoring Will Be a Key Demand Driver for Mid- to Long Term: Nearshoring, particularly influenced by global geopolitical tensions, has significantly spurred growth in the industrial real estate sector in the Sunbelt states. Mexico, with its physical proximity to the US and cost advantages, has become a prime location for US companies looking to relocate operations closer to home. To put the magnitude of this relocation into perspective, Statista reports that in 2022, 57% of Mexico's foreign direct investment originated from the

[23] https://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf
[24] https://www.insiderintelligence.com/content/what-retailers-need-know-about-2024-and-beyond-5-charts
[25] https://www.commercialedge.com/blog/national-industrial-report/
[26] https://go.plantemoran.com/rs/946-CTY-601/images/FINAL_2023_Q3_National_Industrial_Real_Estate_Market_Report_PMR.pdf?version=0
[27] https://www.ibm.com/blog/are-your-data-centers-keeping-you-from-sustainability/
[28] https://www.whitehouse.gov/briefing-room/statements-releases/2023/08/16/fact-sheet-one-year-in-president-bidens-inflation-reduction-act-is-driving-historic-climate-action-and-investing-in-america-to-create-good-paying-jobs-and-reduce-costs/

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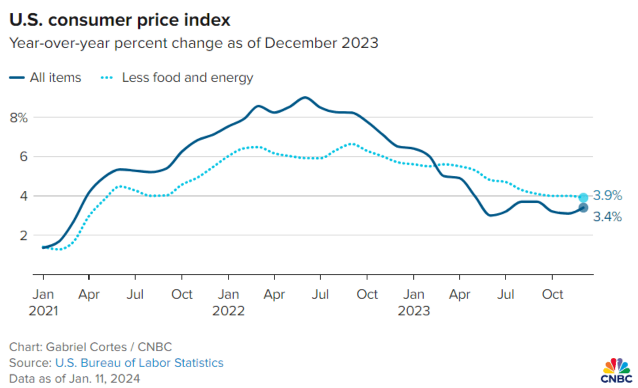
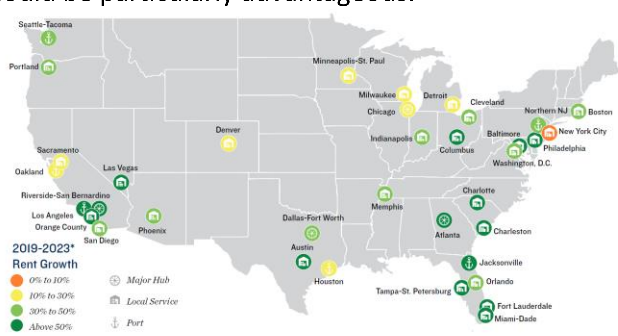
United States,[29] with the majority of it directed towards the manufacturing industry for auto part production.[30]

In 2023, amidst growing economic uncertainty and inflation, larger-scale manufacturing facility leasing activity has slowed down as Fortune 500 companies paused reshoring/onshoring plans. However, this is likely to change in late 2024, due to improvements in CPI and the overall market sentiment of a reduced recession risk.[31] Coupled with shrinking construction activities through 2023, a continued shift to manufacturing in the US & Mexico could further augment industrial real estate fundamentals and the investment thesis in the mid- to long term.

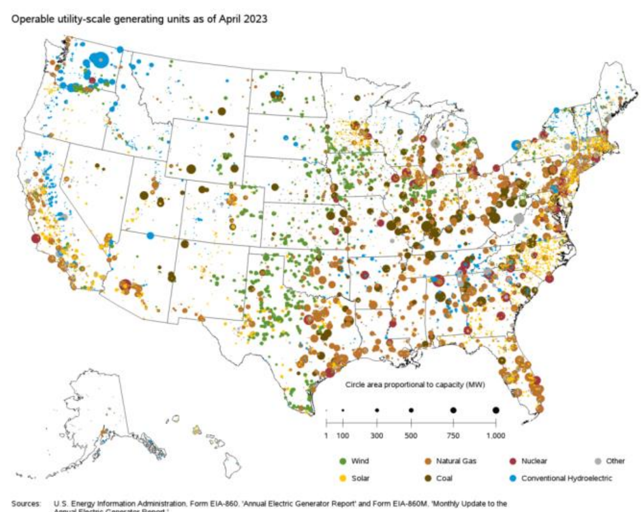


Opportunities in Industrial Real Estate

- **Locations:**
  1. Sunbelt Markets: Major markets in the Southeast are set to gain from onshoring/nearshoring activities, reflecting migration patterns and evolving consumer behaviors. For investors projecting a rise in cross-border trade, strategic investments in warehouses and final assembly spaces close to key crossings could be particularly advantageous.



  2. Population Centers: Expanding e-commerce and the “direct-to-consumer” delivery model point to a sustainable demand for logistics facilities and warehouses. These facilities are increasingly needed within or near population centers to support the growth of last mile delivery.
  3. Business Friendly Regions: Recent energy transition has introduced additional complexity to investment evaluations. In the context of stabilizing energy prices, markets with abundant sustainable energy sources and policy support have performed particularly well. Notably, in the Southwest markets, the end-user electricity price in the industrial sector has seen a significant decline of over 11% - a decrease substantially higher than the national average of 4.26%.[32] In direct correlation to operating cost savings, these regions witnessed highest rent growth and lowest vacancy rates in 2023.[33] This trend is set to continue, as the Energy Information Administration expects renewable energy utilization to grow by 17% to 42 GW in 2024 and account for almost a quarter of all electricity generation.[34] This makes access to renewable energy and targeted utility subsidies increasingly vital for investment decisions.



- **Types:**
  1. Manufacturing Space: Recent data indicates that while retailers are accumulating inventories, leading to slower leasing decisions, manufacturers are expanding at unprecedented rates to prevent disruptions akin to pandemic years. This trend is likely to increase demand for modern, specialized

[29] https://www.statista.com/statistics/709875/fdi-mexico-origin/
[30] https://www.cushmanwakefield.com/en/united-states/insights/exploring-the-challenges-and-factors-driving-onshoring-and-nearshoring
[31] https://www.cnbc.com/2023/12/12/cpi-inflation-report-november-2023.html
[32] https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a
[33] https://www.commercialedge.com/blog/national-industrial-report/
[34] https://www2.deloitte.com/us/en/insights/industry/renewable-energy/renewable-energy-industry-outlook.html

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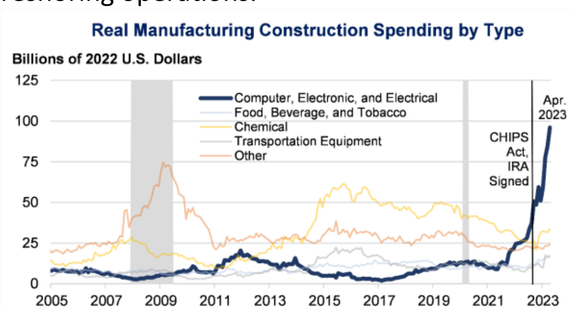
manufacturing spaces in sectors such as semiconductors, clean energy, and life sciences. Encouraged by federal support for reshoring and nearshoring initiatives, investors may look to purchase or develop well located purpose built, manufacturing facilities. However, such facilities may require high buildout / operating costs. Therefore, investors are advised to conduct a sophisticated analysis to ensure the best investment performance.

2. Purpose Built, Customizable Warehouse Space – *Technology & Energy*: Future growth of manufacturing and storage / distribution properties is likely to be closely tied to technological advancements and the shift towards clean energy. Legislation like the Inflation Reduction Act and the CHIPS and Science Act, which encourage the development of semiconductor and EV battery production facilities in the US, will likely increase demand for nearby warehousing and logistics spaces. This trend is part of a broader movement towards reshoring operations.



3. Smaller Size Short-term Arbitrage Opportunities: Substantial increase in property values, over 35% in the last two years, is expected to motivate more owners to sell their assets for profit. This scenario, combined with a tightening in the lending market and growing economic uncertainty, might lead non-institutional sellers, particularly those lacking strong balance sheets, to offer discounts for quicker sales. This environment could present a short-term arbitrage opportunity for investors, allowing them to acquire high-quality properties at reasonable prices.

4. Third-party Logistics Space: Third-party logistics (3PL), which encompasses inventory management, warehousing, and fulfillment services outsourced to specialized firms, is pivotal for businesses adopting onshoring or nearshoring strategies and for e-commerce. This model offers a cost-effective solution for meeting consumer requirements without the need for a proprietary supply chain. Growing e-commerce and global supply chain reintegration are expected to continually drive demand for 3PL services, and therefore for facilities capable of handling these specialized logistics functions.

In conclusion, Caldera Real Estate Ventures ("Caldera") believes that there is a strong case for investing in and owning industrial real estate assets in the near future. The investment thesis is supported by long term macro trends, strong fundamentals of the asset class and opportunities that are likely to emerge due to the dislocation in capital markets. However, the future success of industrial real estate investment truly depends on several factors: i) profound understanding of the underlying asset and investment horizon, ii) thorough due diligence / financial analysis for ultimate risk assessment, iii) independent vetting of the sponsor / manager and iv) creation of asset / portfolio specific business strategies. **Family offices and investors, especially the ones who do not have the right in-house team to diligently assess risks, are advised to work with external CIO advisors like Caldera that have a direct, asset level real estate investment track record.**

Author Information

*Can Tavsanoglu is the Founder of Caldera Real Estate Ventures, an External Chief Investment Officer ("**CIO on Demand**"), **strategic, independent advisory** business for commercial real estate. Caldera partners with US & Non-US based family offices, institutional investors and (U)HNW individuals who want to invest / or have already invested in US Commercial Real Estate but have not hired a full time CIO and/or an asset management team.*

Caldera is founded on Mr. Tavsanoglu's track record of 14 years of successful principal side investment experience totaling $2 billion in transactions, developments, and financings. Caldera has an advisory board that consists of the former head of Ernst & Young's global real estate advisory, Executive Chair of Herrick Feinstein, a legal firm with 140 attorneys and global presence, and the head of northeast construction financing at Santander Bank.

Caldera offers a comprehensive set of services including Strategy & Growth, Acquisitions, Due Diligence, Finance, Structuring, Dispositions, Development and Asset Management including ESG compliance & institutional reporting.