

# Manufacturing Momentum

*From Construction  
to Production*



# Foreword

This report is the third installment of a Newmark Industrial Research series exploring recent advanced manufacturing growth in North America since 2020.

Throughout the series, we have studied and quantified recent manufacturing growth and its drivers. In this installment, we build upon the previous reports with updated data, tracking projects from announcement to construction and finally to production. We also analyze the 'multiplier effect' on industrial real estate markets, highlight opportunities for real estate investors and manufacturers to mutually benefit—and what the future of North American manufacturing may hold.

Since our initial report in September 2023, the juggernaut trajectory of supply chain repatriation has continued, driven by corporate de-risking strategy and federal incentivization. However, challenges have emerged. Proliferating megaprojects, including major manufacturing projects and data center facilities, have exposed constraints in tangible resources such as land, power and labor, which are becoming bottlenecks for economic growth and sustainability. Newmark anticipates that increased private and institutional investment, coupled with federal stimulus, will lead to more integrated, comprehensive approaches to addressing the challenges associated with decentralized growth.



# Domestic Manufacturing Shows Continued Momentum

In September 2023, Newmark completed an initial survey of major U.S. manufacturing projects announced since 2020, identifying 300 projects totaling \$400 billion in investment, primarily driven by four key manufacturing segments.



## HIGH-TECH / DIGITALIZATION

*Think: Semiconductors*



## AUTOMOTIVE / TRANSPORTATION

*Think: Electric Vehicles (EVs)*



## ENERGY

*Think: Batteries & Solar Panels*



## BIOMANUFACTURING

*Think: Pharmaceuticals*

In June 2024, an update revealed a dynamic landscape, with some projects delayed, curtailed, or outright canceled but other new projects announced. For example, in the first quarter of 2024, domestic chipmaker SkyWater Technologies announced that a planned \$1.8 billion facility in West Lafayette, Indiana would not proceed, as the project was contingent on CHIPS Act funding, which did not materialize.

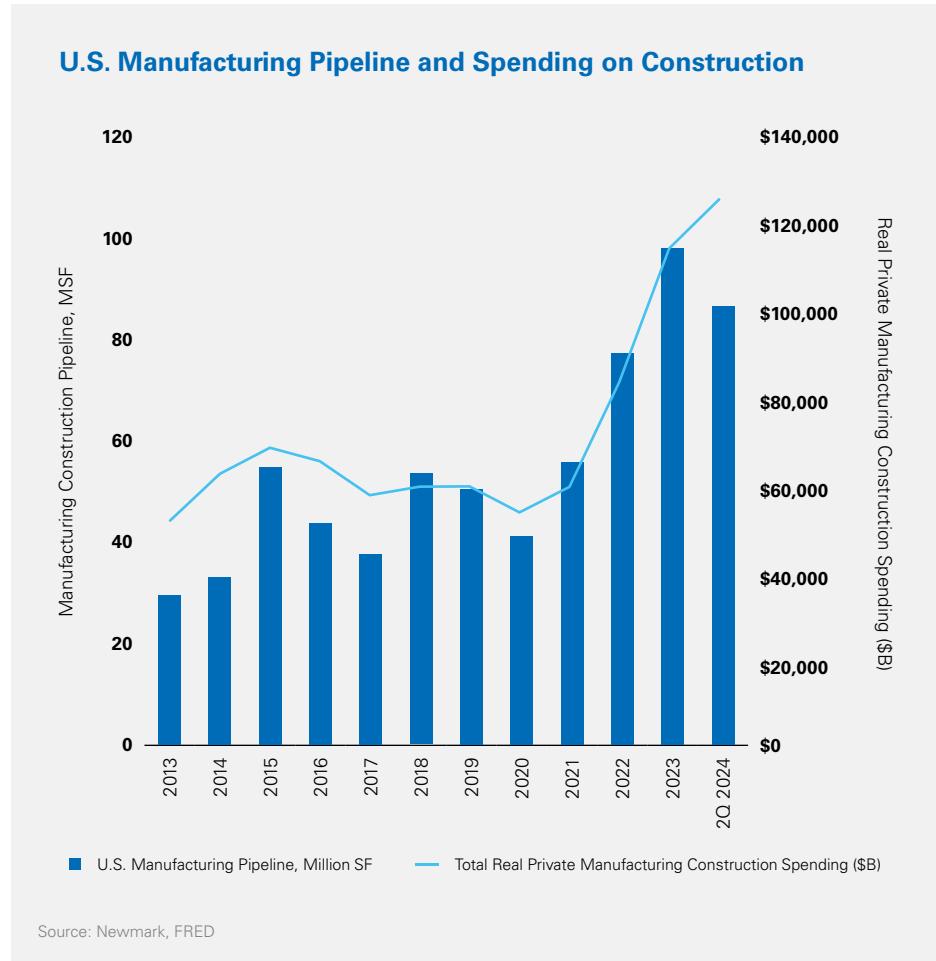
Nearly simultaneously, in the same region, South Korean chipmaker SK Hynix announced a \$3.87 billion facility for chip packaging, and Eli Lilly announced an additional \$5.3 billion investment to further expand a million-square-foot+ biomanufacturing campus underway in Lebanon, Indiana.

**Newmark's current tally of active and major manufacturing investments announced since 2020 totals 400+ projects totaling \$530 billion in investment, bringing 270,000 new jobs.**

Of these major projects, around 65% have publicly released details about facility size, which adds up to 270

million square feet. Approximately half of these projects are actively under construction or complete, up from a third last year.

As expected, spending on manufacturing construction continues to escalate, again setting a record in the second quarter of 2024 at \$121.4 billion, adjusted for inflation. In square footage terms, the manufacturing pipeline remains near all-time highs measured at the end of 2023. A slight decline in the second quarter of 2024 was due to the delivery of several large manufacturing projects such as GM's 2.8 million-square-foot Ultium Cells battery plant in Spring Hill, Tennessee.



With hundreds of projects yet to commence, the pipeline is forecast to expand further in the coming years. The Congressional Research Service estimates a two-to-five-year lag between the start of major manufacturing facility construction and the beginning of production.

**We are just now beginning to see the results of the first wave of construction that began between 2021 and 2022.**

The U.S. manufacturing base spans approximately 7 billion square feet nationwide<sup>1</sup>, representing nearly two centuries of development. The surveyed projects could conservatively increase the size of the U.S. manufacturing inventory by 6%, within a decade. The actual impact is even larger when smaller projects are taken into account, as the 6% estimate only includes projects with a minimum investment of \$100 million. In addition, there will be a multiplier effect on the broader industrial market.

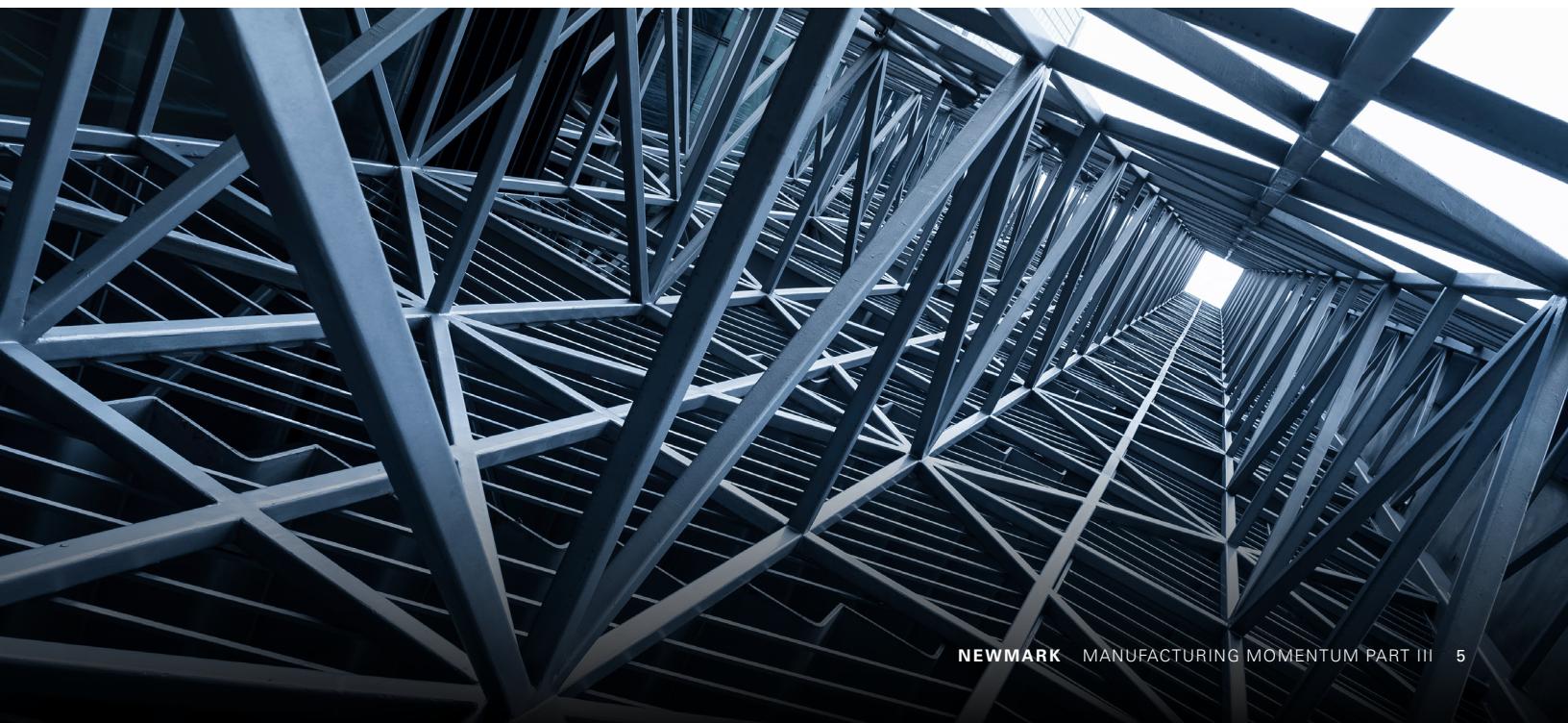
## The Multiplier Effect is Creating Demand for Industrial Space

The multiplier effect describes the local economic impact that occurs when a new manufacturing facility is launched. Specifically for the industrial real estate market, the multiplier effect manifests as increased demand for logistics and manufacturing space needed to support a new facility's operations within its regional, national, or even global supply chain. This report focuses on the regional multiplier effect to identify more precise investment opportunities.

Regional multiplier effects on industrial leasing, build-to-suit and

owner-built activity vary significantly across projects. Influencing factors include the industry sector, an individual company's sourcing strategy, the existing upstream and downstream supply chain, market and labor demographics, development dynamics and logistics infrastructure. Global supply chains may have limited locational flexibility, and the construction of a major project does not guarantee a significant impact on the new plant's supply chain or the surrounding industrial market. However, many markets with major manufacturing facilities coming online or under construction are witnessing increased industrial activity from support companies and suppliers. This is particularly true for the high-tech/digitalization and automotive/transportation sectors, which have driven the most recent manufacturing investment.

<sup>1</sup> U.S. estimate as a whole. Sourcing from Newmark and Costar databases. Manufacturing inventory represents around 20% of the total U.S. industrial inventory.



# The Multiplier Effect: High Tech/Digitalization Spotlight

The high-tech/digitalization segment encompasses a range of manufacturers, from satellites and electronics to switchgear, but the majority of the sector is driven by semiconductor manufacturing. Collectively, announced semiconductor manufacturing investment in Newmark's survey tops \$250 billion, and is estimated to reach \$350 billion within the next decade<sup>2</sup>.

Arizona, Oregon, New York, Texas and Ohio lead the country in semiconductor project announcements. Numerous major projects are located in markets that have a legacy of chip manufacturing ecosystems, a mature supplier network and workforce. Other major projects are hitting markets with a nascent supplier ecosystem, suggesting expansion will be necessary. Companies such as Micron, TSMC, Samsung and others are diversifying U.S. expansions by investing in multiple sites across various markets.

This strategy not only spreads the risk but also taps into diverse talent pools and regional incentives. As previously noted, myriad factors can shape the semiconductor ecosystem including individual company sourcing strategy. The following comparison highlights Intel Corporation's investments in two markets—one mature and one emerging.

# A Tale of Two Markets

## Mature Semiconductor Ecosystem

Chandler, Arizona, in the Phoenix MSA, is home to four of Intel's semiconductor fabrication plants (fabs), the oldest of which began production in 1996. Construction of two new Intel fabs, representing a combined \$20 billion investment, is currently underway.

Elsewhere in the metro region, a megaproject for TSMC is also underway. There is a significant density of semiconductor and associated companies within 60 minutes of the Intel location in Chandler. A similar concentration of semiconductor industry activity is seen in Hillsboro, Oregon, another legacy Intel community.

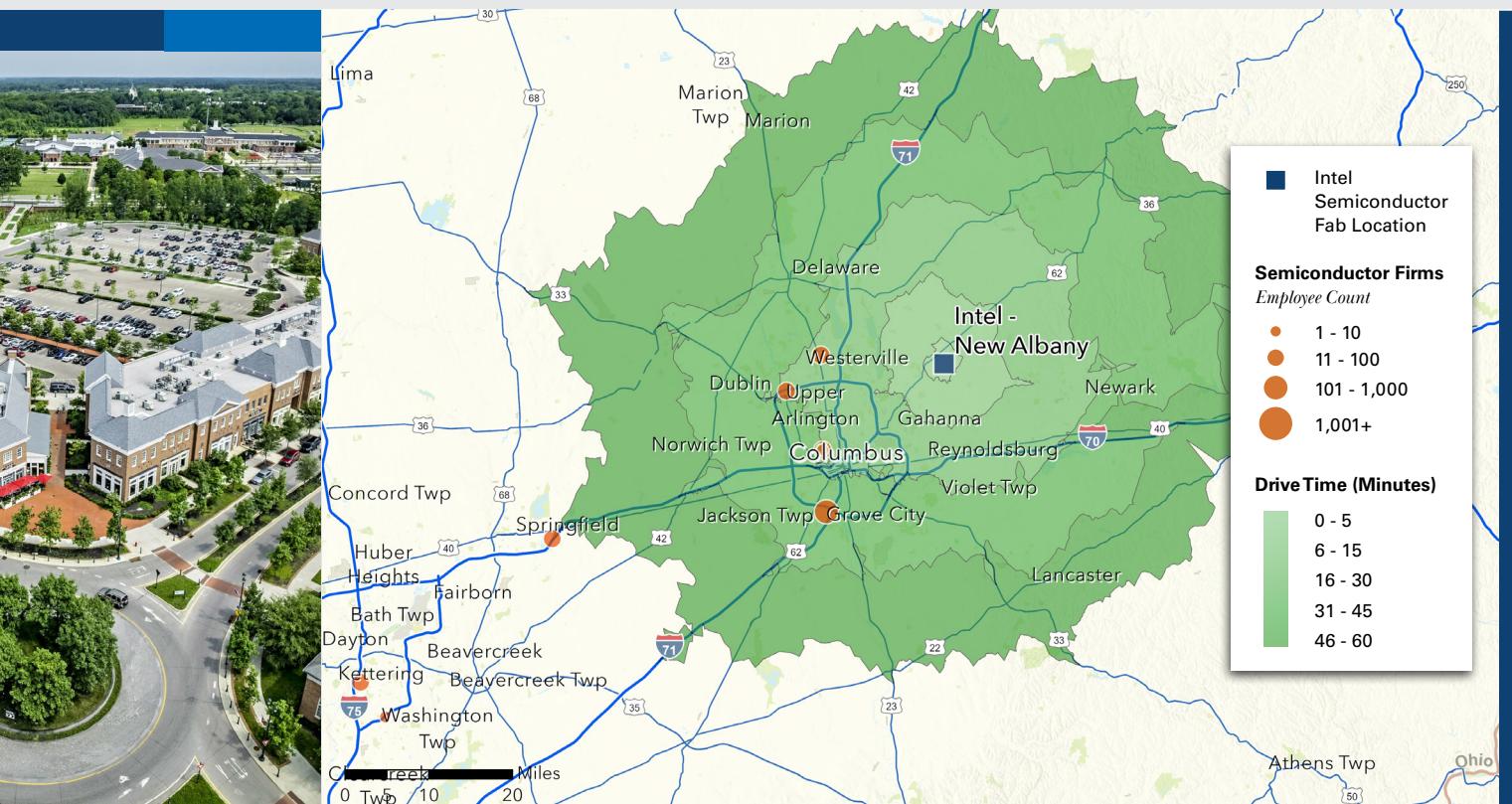
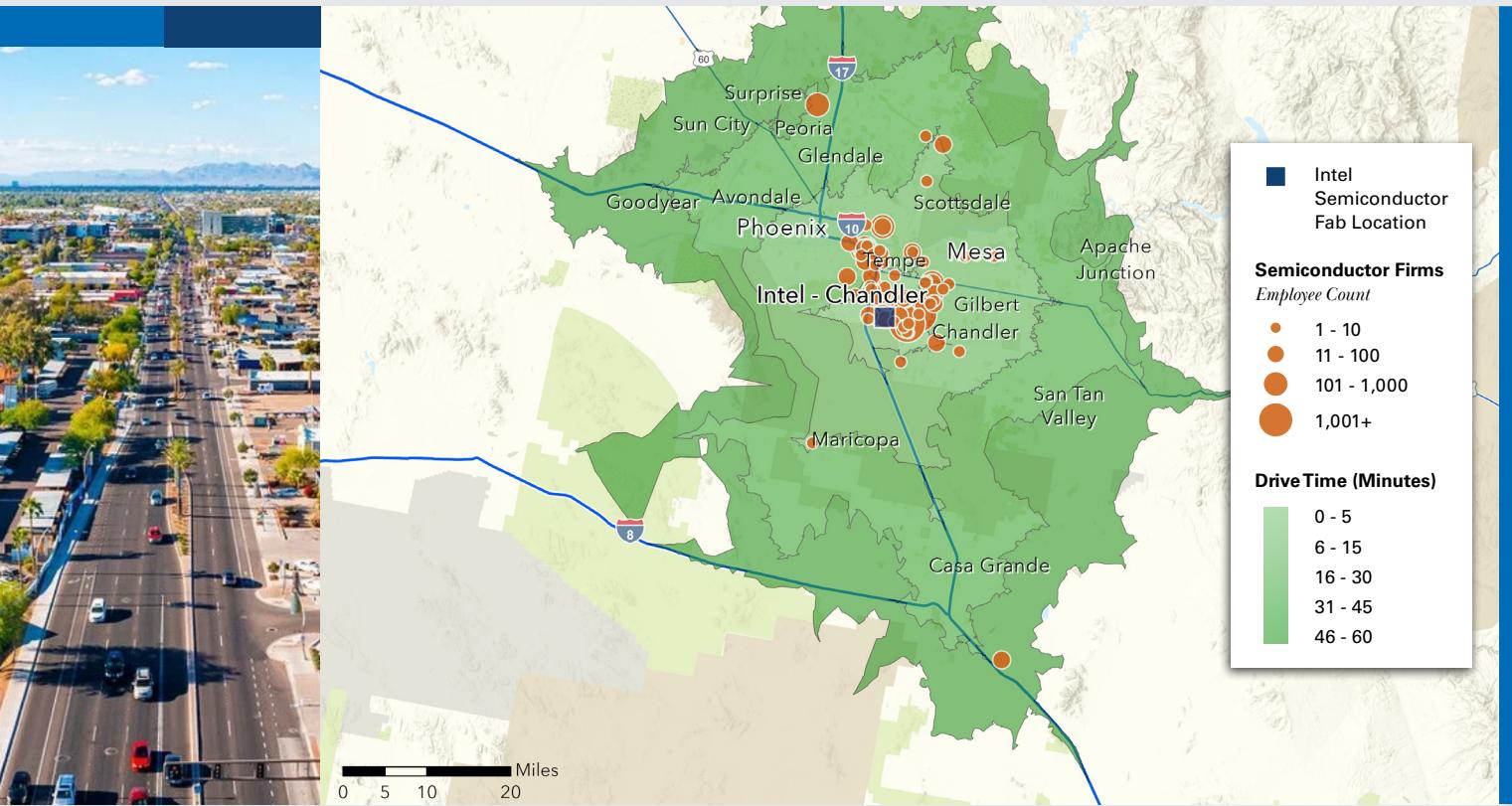


## Emerging Semiconductor Ecosystem

In New Albany, Ohio, located in the Columbus MSA, a \$20 billion Intel fab complex is currently under construction, bringing potential for a greater multiplier effect in the market due to limited semiconductor and associated companies within 60 minutes of the Intel location in New Albany.

Earlier in 2024, Intel was awarded \$8.5 billion in federal funding from the CHIPS Act, which gives suppliers added confidence to scale investments alongside Intel's projected 2026 completion date.





Source: Newmark Global Strategy

# The Multiplier Effect: Automotive/ Transportation Spotlight

The automotive/transportation sector, driven by the clean energy revolution of the developing electric vehicle (EV) industry, is poised to create the most additive industrial demand as many of these announced projects are also in regions with established, mature auto ecosystems, although not for new EV technologies and associated processes, such as battery

recycling. The EV sector continues to demonstrate significant industrial market impact, although it is prudent to acknowledge the sector is evolving in real time. Automakers are adjusting to consumer demand as sales of EVs continue to grow in 2024, albeit at a slower pace than in previous years, which is causing some project timelines to be delayed. Technological

## EV ECOSYSTEM ANALYSIS

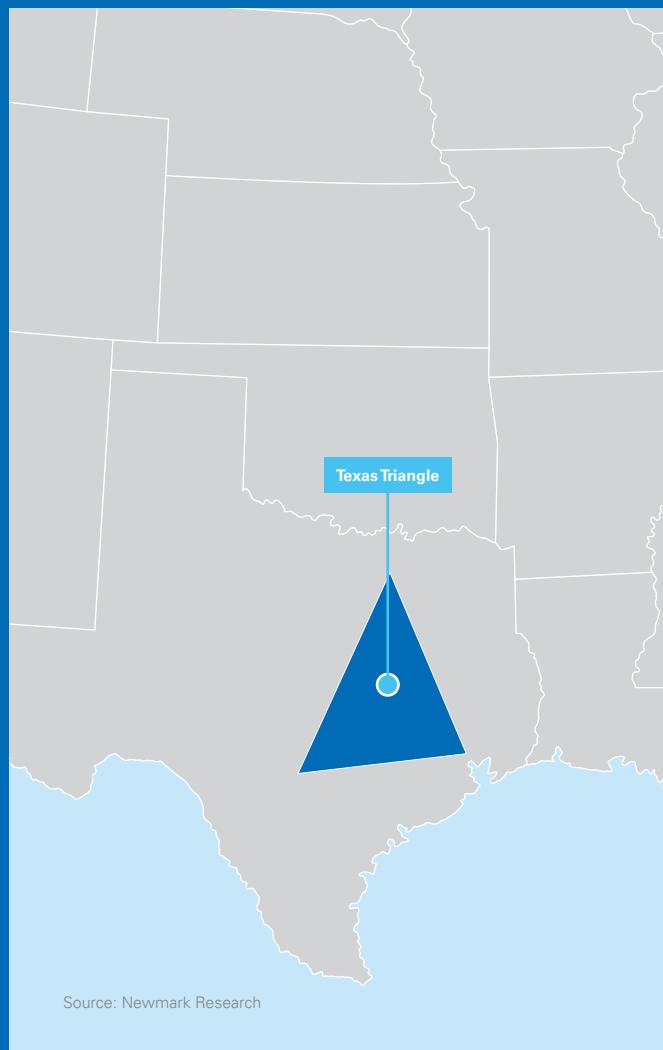
### Regional Expansions

#### The Multiplier Effect in the Texas Triangle

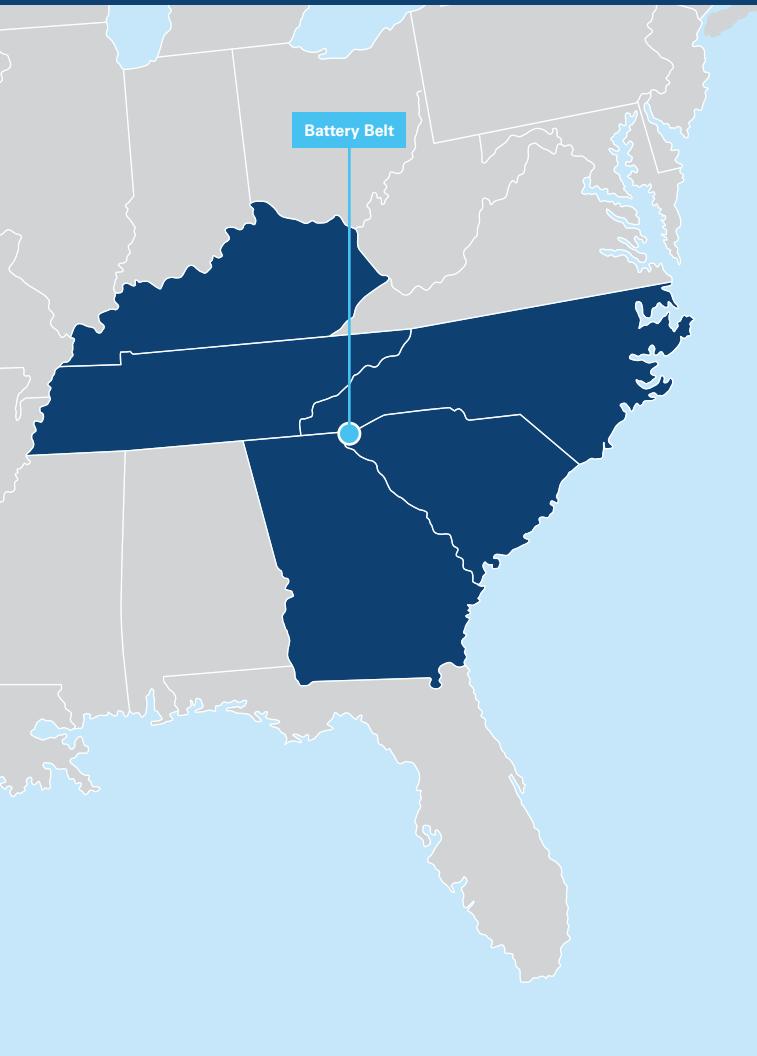
Two major automotive/transportation sector plants opened in the Texas Triangle during 2022, demonstrating the impact of new plant construction on adjacent industrial market demand.

Following the construction of Tesla's 10-million-square-foot gigafactory and Navistar's 900,000-square-foot commercial EV truck production facility, a minimum of 4.5 million square feet of warehousing/manufacturing absorption (leasing and build-to-suit activity alike) attributable to siting near these two new facilities has occurred since 2022. New industrial occupiers include ElringKlinger AG, Saueressig, CelLink and Plastikon. Tesla has also expanded its footprint multiple times since opening, occupying additional warehousing/distribution space as a part of its expansion.

In addition, the establishment of new EV manufacturing plants in the region has attracted complementary companies to cluster nearby, even some not directly participating in the EV ecosystem. For example, in 2022, Continental Automotive opened a \$110 million, 215,000-square-foot manufacturing facility in New Braunfels, Texas to produce components for autonomous vehicles.



advancements, global competition and domestic energy constraints are also contributing factors to this dynamic market landscape. Internal combustion engine vehicle sales reached a peak in 2017, marking a clear turning point in the automotive industry – from here it will continue down the inexorable road to electrification<sup>3</sup>.



## The Multiplier Effect in the Southeast Battery Belt

Legacy giants and upstart car companies alike are investing billions into new EV manufacturing facilities across an emerging superregional ecosystem dubbed the 'Battery Belt', which extends from the Midwest to the Southeast. The most active portion of this landscape includes the Carolinas, Georgia, Kentucky, and Tennessee.

Automakers like Hyundai, Rivian, VinFast, Ford, Toyota, BMW, VW, Volvo and Kia have invested \$44 billion in new EV factories or expansions to existing factories, totaling more than 60 million square feet of new production space, all announced since 2020<sup>4</sup>.

This sum is nearly matched by the volume of related logistics and manufacturing leasing and development: another 50 million square feet of EV-related industrial demand has already been tallied across these five states in the same period – a conservative estimate.

<sup>4</sup> Rivian's Georgia factory represents approximately a third of this total. Construction was put on hold in March 2024. Volkswagen has since formed a \$5 billion joint venture with Rivian in June 2024, a possible outcome of which is the resumption of work on the development.

The multiplier effect extends beyond industrial real estate, impacting other property types such as multifamily, retail and – to a lesser extent – hospitality and office. Increased hiring at new facilities leads to population and wage growth, which will increase demand for adjacent commercial real estate, particularly in smaller communities that attract large plants. During peak construction phases for large projects, thousands of workers could be onsite temporarily, driving short-term demand for housing and hospitality space. In the long term, many regions will benefit from an influx of highly skilled, well-paid workers. The ongoing trend of companies shifting locations of their manufacturing operations is emerging as the second great industrial market disruptor of the 21st century, following the rise of e-commerce. This shift in global production potentially creates a stronger economic impact, as the four advanced manufacturing sectors profiled in this series have an average job multiplier of more than double that of the warehousing/distribution sector<sup>5</sup>.

<sup>5</sup> Newmark Research, ESMI, The Wharton School, University of Pennsylvania, JobsEQ. Counting total direct, indirect and induced jobs. Note that e-commerce operations require two- to three-times more labor than nonfulfillment-driven warehouse operations and have a stronger job multiplier than traditional warehousing but less than manufacturing.

## What Are the Investable Opportunities for Real Estate Capital?

With demonstrated continued manufacturing growth, there is a panorama of both individual and interconnected ways for educated real estate capital to invest in the momentum, which introduces a wider variety of options for manufacturing occupiers to meet their needs.



### Speculative and Build-to-Suit Development

While most megaprojects surveyed will be owner-occupied or build-to-suit, speculative manufacturing is also present in the construction pipeline. Projects structurally designed for heavier loads, with appropriately configured loading docks and other key design features are most likely to be viable for manufacturers, providing power needs are met. Industry stakeholders including construction firms, architects, renewable energy providers, industrial developers and others, are creatively partnering to ensure rapidly deployable solutions for speculative or build-to-suit manufacturing projects, future-proofing for second- or third-generation manufacturing uses.



### Equipment and Tooling

Just as real estate capital offers a less dilutive solution to sourcing real estate than venture capital, it can also fund new or replacement equipment and tooling needs for manufacturers. In addition, industrial property owners who invest in advanced technologies and equipment solutions that enhance operational efficiency for occupiers may continue to enjoy advantageous positions in pricing power.



### Infrastructure

Investment at the intersection of power and real estate is an increasingly compelling opportunity in the broader theme of energy transition. Strategies include direct investment in clean energy infrastructure projects, particularly those that can sustainably power developable sites and attract heavy-power users, such as manufacturers.



### Acquisitions

Whether through sale leasebacks, owner purchases, or real estate investments, capital markets volume for manufacturing facilities has rebounded faster than overall industrial volume. In 2Q24, industrial investment volume measured \$1.6 billion, the highest quarterly volume since 1Q23 and 26% higher than the 5-year pre-pandemic quarterly average. Sale leaseback volume alone grew by over 100% year-over-year as some companies look to monetize their real estate to raise capital.<sup>6</sup>

# Challenges and Opportunities in the Immediate Term... and What the Distant Future Holds

With the increasing potential of easing interest rates in the second half of the year, more accommodating financial conditions should drive an uptick in manufacturing capital expenditures. This is particularly true as federal incentive awards from the CHIPS Act and IRA continue to be given out. Other firms, however, will be cautious about making capital expenditures due to potential new or countermanded policies or macroeconomic fluctuations, in light of the 2024 U.S. presidential election. Messaging and policies may shift and evolve, although bolstering U.S. manufacturing and repatriating domestic supply chains is fundamentally a bipartisan issue and it is likely that federal carrots and/or sticks will continue to drive this monumental manufacturing shift into the next administration.

Constraints on labor are well-documented persistent challenges for manufacturers to navigate. Power constraints have become ever more acute. A scarcity of developable industrial sites with adequate power is impacting project timelines and viability; manufacturing is now competing for power resources with energy-intensive AI-driven data center projects.

Energy infrastructure and capacity development are increasing. Last year, U.S. states brought record capacity online but the forecasted growth rate of power demand is consistently underestimated, posing a risk to the current manufacturing resurgence and overall competitiveness. Some manufacturers are exploring off-grid solutions to supplement or even fully supply their own power needs. As more industrial real estate developers and investors explore becoming power service providers, strategic advantages may emerge.

## Site Selection Factors by Order of Importance

	2022	2021	2020	2019
Availability of skilled labor	1	2	2	1
<b>Energy availability</b>	<b>1</b>	<b>7</b>	<b>4</b>	<b>8</b>
Labor costs	3	13	1	2
Proximity to major markets	3	1	8	4
State and local incentives	3	4	5	5
<b>Energy costs</b>	<b>6</b>	<b>7</b>	<b>4</b>	<b>8</b>
Highway accessibility	7	3	2	3
Proximity to suppliers	7	4	7	12
Available land	7	4	9	7
Expedited or "fast-track" permitting	10	8	14	8
Occupancy or construction costs	10	9	13	11
Tax exemptions	12	10	6	10
Shovel-ready sites	12	–	–	–
Environmental regulations	14	16	18	15
Technical schools	14	15	18	13
Available buildings	16	10	10	5
Accessibility to major airport	17	19	15	14
Training programs	18	15	18	13
Water availability	19	19	25	23
Low union profile	20	21	11	17

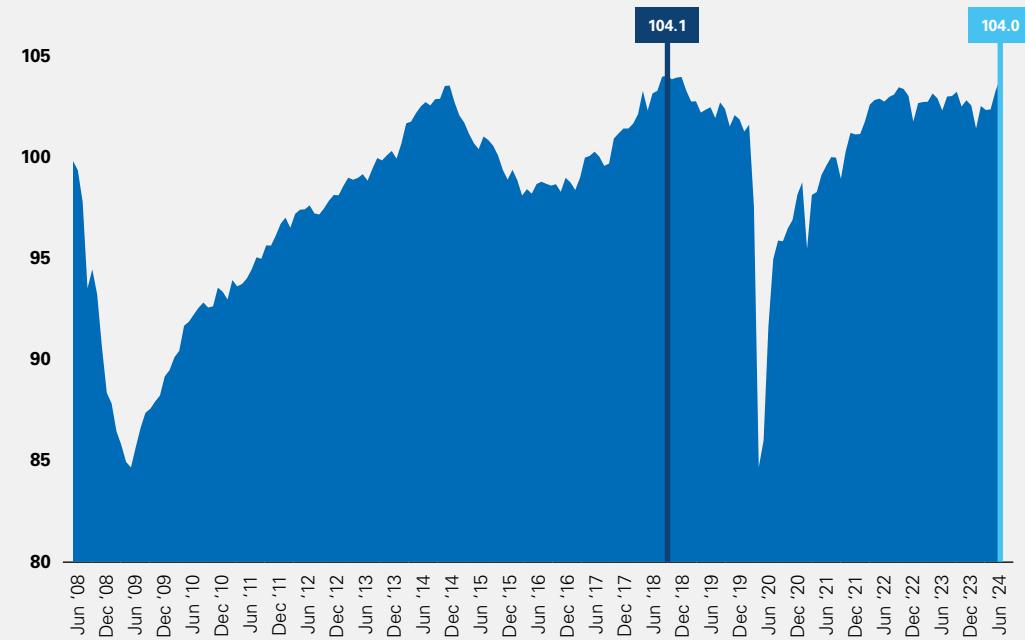
Source: Area Development Annual Consultants Surveys (2020-2023)  
Note that repeated rank positions are due to factors tied in the scoring

While challenges and obstacles exist, it is undeniable that a structural shift in where goods are produced and how they are distributed to the end-consumer is fundamentally driving a wave of manufacturing growth in North America that will have effects for decades to come.

In the first quarter of 2024, manufacturing accounted for 10.1% of total U.S. GDP, fluctuating only slightly since 2019. Manufacturing's GDP share is likely to rise as new facilities come online due to significant investment and construction already underway. Total industrial production has already reached a new cyclical high as of June 2024 and is on track to outperform the previous cycle peak of 2018.

The macro shift in global production is emerging as the second great industrial market disruptor of the 21st century, following the rise of e-commerce, and arguably one that will be even more impactful because of manufacturing's economic multiplier.

#### Total U.S. Industrial Production



Source: FRED, Index 2017=100, Seasonally Adjusted. Total industrial production includes utilities, manufacturing and mining.

Additional sources: Newmark Global Strategy, Site Selectors Guild, ARK Invest, ARCO Design/Build, U.S. Department of Commerce, Jay Turner, Wellesley College







## LOOKING FORWARD



What does the future hold for North American manufacturing, and how will the multiplier effect shape the broader industrial market?

Here we present several high-level themes and future scenarios to conclude this three-part series.

### 1

### Automation, AI and Robotics Will Resolve Labor Constraints and Drive Efficiency



*Globally, the U.S. is a strong manufacturing labor market yet still faces acute constraints in skilled talent.*

### By 2044...

Ranked third in the world for industrial robot installations, U.S. manufacturing companies increased installations by 12% in 2023. North America may experience even faster future growth as capital investment for robotics becomes more aggressive, driven by decreasing unit costs and increasing product sophistication and adaptability, including the adoption of humanoid robots at scale.

This dynamic will be driven by advancements in AI and a more readily available supply of advanced chips. AI will permeate all processes and amplify manufacturing productivity. As automation and robotics allows more manual labor to be replaced, labor demands will further shift to skilled workers who are able to work with, maintain, and improve advanced manufacturing technologies.

## 2

## Regionalized Production Will Rebalance the U.S. Industrial Market



*Over the past few decades, maritime port markets have expanded significantly to handle large-scale imports of cheaply produced finished goods. However, global realignments are reconfiguring which markets will see greater growth in the decades to come.*

### By 2044...

The onshoring and nearshoring of manufacturing will drive the development of robust supplier ecosystems and increase freight volumes across the Americas, increasing industrial demand in inland intermodal markets such as Dallas, Chicago and Atlanta. Logistics flight to quality accelerates as inventory carrying costs decrease due to shorter, less risky paths between production and consumption, aided by advanced automation and robotics adoption.

North American port markets like Los Angeles, Houston, Seattle and the New York metro will experience a renaissance through the integration of advanced air mobility (AAM), autonomous technology, and other smart port innovations. These port gateways will support advanced domestic production, increase export activity, and play a pivotal role in emerging tech-driven industries, potentially even low-earth-orbit economies.

## 3

## Clean Energy Advances Promote Growth—and Consolidation—in Manufacturing



*EVs, batteries, solar, nuclear and hydrogen are among the many competing technologies in the clean energy revolution, version 1.0.*

### By 2044...

In the clean energy revolution version 20.0, nascent technologies have been perfected and clean energy dominates as legacy sources like fossil fuels wane. Much consolidation has taken place in the realm of internal combustion and electric vehicle manufacturing and in the broader clean energy sector. Synthetic solutions to raw material scarcity have been developed and implemented at scale, boosting manufacturing both domestically and in partner countries.

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Special thanks to Liz Berthelette, Bob Hess, Gregg Wassmansdorf, Connall Chamberlain, Ava Fauk, Chloe Faulk, Eli Mack, Joe O'Malley, Aidan Lyons and Hadley Kendall for their support on this project.

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Previous Reports:

**Part 1: Advanced Manufacturing Ascendancy in North America**

<https://www.nmrk.com/insights/thought-leadership/manufacturing-momentum-advanced-manufacturing-ascendancy-in-north-america>

**Part 2: Scaling for Success in Key Markets**

<https://www.nmrk.com/insights/thought-leadership/manufacturing-momentum-scaling-for-success-in-key-markets>

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