DETROIT FUTURE CITY

TECH TOMORROW: A DETROIT VISION

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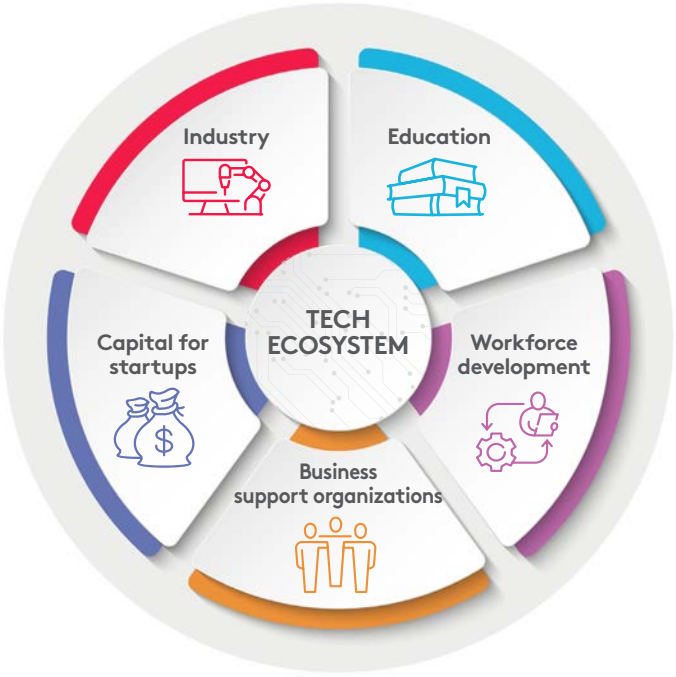
EXECUTIVE SUMMARY

Detroit's tech economy has a strong foundation and has grown steadily over the past decade. The region has a mix of technology industries, some that are connected to areas of historic strength, such as legacy manufacturing and newcomers such as fintech and e-commerce. Because of this existing foundation, as well as tech's track record of shifting the economic trajectory of cities and regions across the country, this report is designed to examine Detroit's tech economy and lay out a vision for where it can go while centering the experiences of Black and Hispanic/Latino Detroiters interested in tech employment and entrepreneurship. The report includes analysis of Detroit's tech ecosystem across five areas:

Tech Ecosystem



Key findings:

1. **Detroit's tech economy is already strong and growing.** The city has nearly 40,000 tech jobs and more than 410,000 across Metro Detroit, and it has grown steadily in recent years. The region brings in hundreds of millions in venture capital and grants each year but lags other major U.S. tech hubs.

2. **Access to capital remains uneven.** Some founders, especially Black and Hispanic/Latino founders and those in hard-tech/manufacturing, report persistent challenges accessing capital.

3. **Workforce training struggles to keep pace with tech.** Detroit's workforce development network is strong, but providers face ongoing challenges keeping up with the rapidly evolving skills tech workers need.

4. **Specialized supports for tech startups are limited.** Though there are many business support organizations effective at supporting main-street-style small businesses, there are too few Innovation support organizations (ISOs) with the specialized expertise that tech startups require.

5. **Youth exposure to tech is improving, but teacher shortages persist.** Detroit's in-school and out-of-school programs have made significant strides to expose the region's youth to tech and computer science education opportunities, but finding and affording qualified computer-science teachers is a persistent barrier.

6. **Significant growth is possible with the right investments.** With the policies and programs that help Detroiters compete for tech jobs—and investment to grow tech businesses—the region could add 20,300 tech jobs for Detroiters over the next five years, generating billions in new wages. Achieving this level of growth could require an estimated 750 additional startups and more than $200 million in investment.

Recommendations for tech tomorrow

The following are recommendations for how stakeholders in Detroit's tech economy could help Detroit become a true tech hub.

System-wide

1. Identify one anchor organization that can lead the alignment and strategy for a regional tech ecosystem
2. Expand into tech industries where Detroit already has expertise
3. Ensure equitable access to support resources and capital

Capital for startups

4. Pursue strategies to increase the amount and access to capital, especially for Black and Hispanic/Latino founders, in the region
5. Increase the amount of government funds in the regional tech ecosystem
6. Build alternative paths to exits

Business support

7. Develop a business support ecosystem specifically tailored to the unique needs of tech businesses

Workforce development and skills-training

8. Strengthen partnerships between workforce development and industry
9. Pursue apprenticeship models for tech

Education

10. Integrate tech career exposure and high-quality, tech-connected learning opportunities into K–12 education across Detroit
11. Strengthen nonprofit-school partnerships and remove barriers to accessing programming
12. Clearly describe and coordinate pathways into tech

See page 72 for full recommendations.

A VISION FOR DETROIT'S TECH FUTURE

A VISION FOR DETROIT'S TECH FUTURE

Detroit's tech sector is gaining momentum—an energy that's felt not just locally but nationally. From established corporations to emerging startups, Detroit is full of tech activity and potential. Investing in that potential should be a key part of Detroit's economic development strategies as tech industries have the power to transform cities and regions. In the best-case scenario—where the Detroit region's tech industry is allowed to grow, and policies and programs are developed to help residents compete for regional tech jobs—Detroiters could hold approximately 20,000 more tech jobs in the region and generate up to $6.8 billion in new wages over the next five years.[1,2] Beyond jobs, properly supported tech startups and companies have the ability to create entrepreneurship opportunities that give founders and their employees the chance to build wealth that few other industries afford.

To fully realize the potential of its tech economy, **Detroit needs a cohesive and inclusive strategy, along with alignment across stakeholders**, to cultivate an ecosystem infused with capital, support, and talent.

Designing a thriving and inclusive tech ecosystem

In order to get to a tech future with more jobs and entrepreneurship opportunities for Detroiters, it's important to recognize that the tech economy is more than just the industries that produce and use tech or have tech workers. It's a complex ecosystem that can either support or hinder growth. It can excite the next generation of tech workers or leave them without the exposure or skills to compete. It can cultivate the policy and funding environment to help start and scale businesses or to force them to leave. All these elements—capital providers, educational institutions, government, and business/innovation service providers, are critical to a successful tech ecosystem for both founders and workers.

But often, there are gaps in this ecosystem that prevent all from being able to participate and benefit from it. The Kapor Center introduced the concept of a "leaky tech pipeline," that identifies how systemic barriers across education, workforce, and entrepreneurship contribute to disparities in tech. The framework recognizes that there is a connective pipeline or pathway from pre-K to 12 education through higher education, leading into tech workforce and entrepreneurship.[i] Along this pipeline are compounding challenges around access and barriers that contribute to disparities for tech workers and founders.[ii] To build a tech future that truly includes and benefits Detroiters, the city must address these systemic gaps and strengthen the entire tech pipeline to ensure no talent is lost along the way.

[1] See the Detroit Tech Tomorrow section and the Appendix for more detailed explanation of how the project team arrived at these estimates.
[2] These wage predictions assume the shift in job capture and job growth happens evenly across five years, and, once employed, Detroiters remain employed for all five years. They also assume an average wage for tech jobs of $111,141, consistent with the average wage of tech jobs in the region in 2023.

Detroit's existing tech foundation

Fortunately, Detroit has a tech foundation to build on. Tech is already a key part of Detroit's economy and it is growing steadily, with hundreds of thousands of residents across the region employed in tech-related fields. In recent years, Detroit has seen an increase in the amount of tech activity in the city and surrounding region, including hundreds of new startups, the opening and growth of a variety of organizations and initiatives working to support tech entrepreneurs, and an influx of philanthropic, private, and university investment bolstering the region's tech economy. The results of this work have paid off as tech in Detroit has gained national visibility and local excitement through initiatives like Black Tech Saturdays and the work of "tech hubs" like TechTown and Michigan Central/ Newlab.

Much of the tech activity in Detroit is connected to legacy industries the city and region are historically strong in, like manufacturing, industrial design, health care, and logistics. There are also jobs and companies in other sectors that have emerged in recent years as the region has added companies working on a wide range of technologies including drones, air quality monitoring, financial technology, e-commerce, and more.

At the same time, there are critical barriers that must be addressed for tech to truly take off in Detroit. Detroit needs to develop a cohesive strategy and vision for its tech economy to better align ecosystem actors and reduce its heavy reliance on legacy industries tied to high-tech manufacturing. There is also a need to address the limited access to venture capital and other forms of capital for tech founders and develop stronger tech-specific support systems for tech startups. For the tech economy to reach its full potential, it will also be essential to close gaps in tech-related education and tackle the unequal access to jobs and resources that continue to affect Black and Hispanic/Latino founders and workers in Detroit and beyond. These challenges are real, but they are also solvable.

Building Detroit's tech economy of tomorrow

Today, Detroit's tech ecosystem sits at a crossroads. Like other cities that have made large investments in tech (e.g., San Francisco, Seattle, New York), Detroit has the opportunity to lean into tech industries and create more jobs and opportunities for entrepreneurs across the region. For an investment in tech to be truly transformative, an inclusive strategy must be at the center—one that focuses on building companies founded by and employing Detroiters and investing in the educational foundation needed for the jobs of tomorrow.

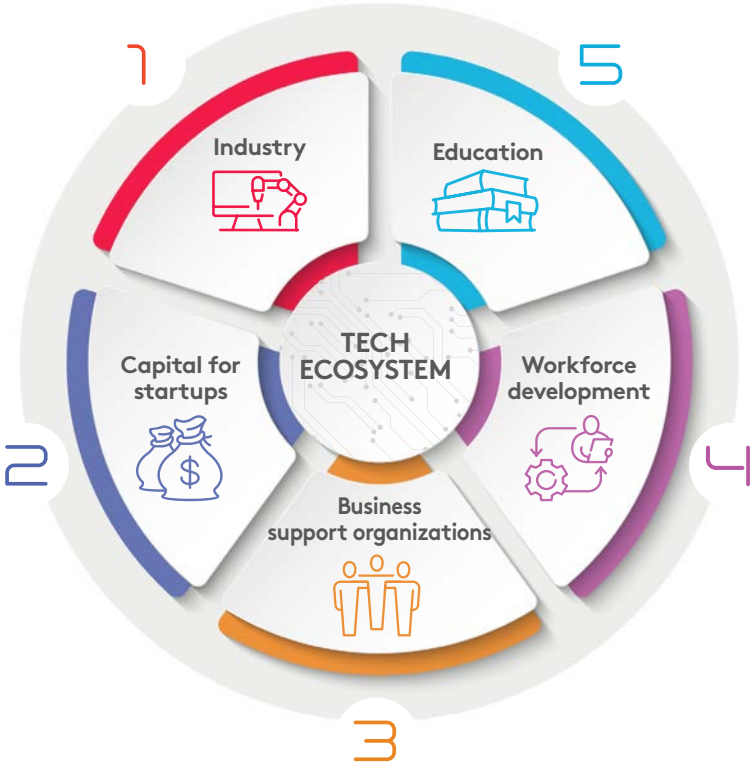
Detroiters are innovative, resilient, and know how to build from the ground up. By harnessing the current momentum, coupled with improving access to capital and talent development from K-12 to higher education and beyond, Detroit can build the next generation of entrepreneurs, innovators, and tech workers ready to shape the future of tech tomorrow. Detroit has the talent, the ideas, the innovation, and the potential—it cannot afford to leave this talent untapped and unrealized.

What this report delivers

For Detroit to become a tech hub, there needs to be an understanding of the current ecosystem surrounding tech workers and entrepreneurs in Detroit. This report will first lay out a definition for tech and what its role is in the broader U.S. economy, then dive into what the tech ecosystem looks like in Detroit.

The following analysis combines data on tech and education in Detroit, coupled with interviews and roundtables with tech actors spanning entrepreneurs, investors, government, nonprofits, and educators. Together, they illuminate the state of Detroit's tech economy and lay the groundwork for how to shape its future. The report looks at the following aspects of the tech ecosystem:

Tech Ecosystem



1. **Industry:** The overall size and makeup of Detroit's tech industry
2. **Capital for startups:** Funding sources for regional tech startups, with a focus on venture capital and government grants
3. **Business support organizations:** The network of support organizations that help entrepreneurs start and grow their businesses
4. **Workforce development:** The system of organizations that delivers tech training to adults looking to transition into tech
5. **Education:** How Detroit builds tech careers and talent through its education pathways.

Defining tech

Definitions of "tech" have changed over time, especially as it relates to identifying the industries that make up the tech economy. For many, "tech" evokes images of companies connected to Silicon Valley, like Google, Meta, Apple, and others that drive innovation in both hardware and software. In the popular imagination, tech can be associated with creativity, innovation, and the development of new and disruptive products.

In practice, tech extends far beyond Silicon Valley, encompassing a wide range of industries and occupations. This expanded definition of tech is important grounding for understanding the role of tech in Detroit. There are two criteria that are regularly used in defining what constitutes a tech industry: a high proportion of STEM (Science, Technology, Engineering, and Mathematics) jobs and significant investments in research and development (R&D). There is also a more recently added third criterion: intensive use of artificial intelligence (AI).[3] Limited data and rapid changes in AI adoption make it difficult to create a snapshot of current AI usage, but it is possible to identify industries that were early adopters of these technologies.

There is also a need to identify industries that are not traditional tech industries but that utilize tech to create new products and services. This includes individual innovators and companies using (often off-the-shelf) technologies to streamline operations, create new products or services, or otherwise create new value. These "tech-enabled ventures" have the potential to reshape entire industries, much like Rocket Mortgage did with transforming the mortgage market by making it possible for mortgage lending to be done completely electronically in the 2000s.

Using these criteria, five categories of tech industries were identified for this report:

- **Core High Tech**
- **STEM-Intensive Manufacturing**
- **STEM-Intensive Nonmanufacturing**
- **Early AI-Intensive**
- **Tech-enabled ventures**[4]

Across these five categories, there are many different industries and companies in Metro Detroit.

[3] Identifying a tech industry by its usage of artificial intelligence (AI) is a criterion added due to the recent increase in usage of AI across many industries.

[4] These companies were identified using venture capital data, company descriptions, patent activity, and web research. For now, these activities are specific to individual entities in Detroit—so it is not possible to show national data on this category.

Tech industry categories

Core High Tech

Description: Core High Tech industries are those industries that come to mind when people think about Silicon Valley, the production of physical tech like semiconductors, and the development of new software fall into this category.

Why tech: High proportion of STEM jobs, major research and development spending

Example industry: Computer systems designs. Local companies like Detroit Labs, which provide software development services to other businesses.

STEM-Intensive Nonmanufacturing

Description: These are industries that are outside of manufacturing but still utilize a high number of STEM workers. Many of these industries have a heavy research component, as well.

Why tech: High proportion of STEM jobs

Example industry: Electric power generation. Companies like DTE Energy hire a significant number of STEM workers.

STEM-Intensive Manufacturing

Description: These are often legacy manufacturing industries with large numbers of STEM workers that are continuously developing and innovating products that utilize cutting-edge tech. For example, today's cars are often described as "computers on wheels."

Why tech: High proportion of STEM jobs

Example industry: Motor vehicle manufacturing. Legacy Detroit automakers, like Ford and General Motors, employ large numbers of STEM workers.

Early AI-Intensive

Description: Industries that are seeing high usage of AI in a company's day-to-day operations and the services that they deliver.

Why tech: Intense AI use

Example industry: Management, scientific, and technical consulting services. Consulting firms, such as McKinsey, Deloitte, and Accenture, have been major adopters of AI technology in their business practices and services they sell to other companies.[5]

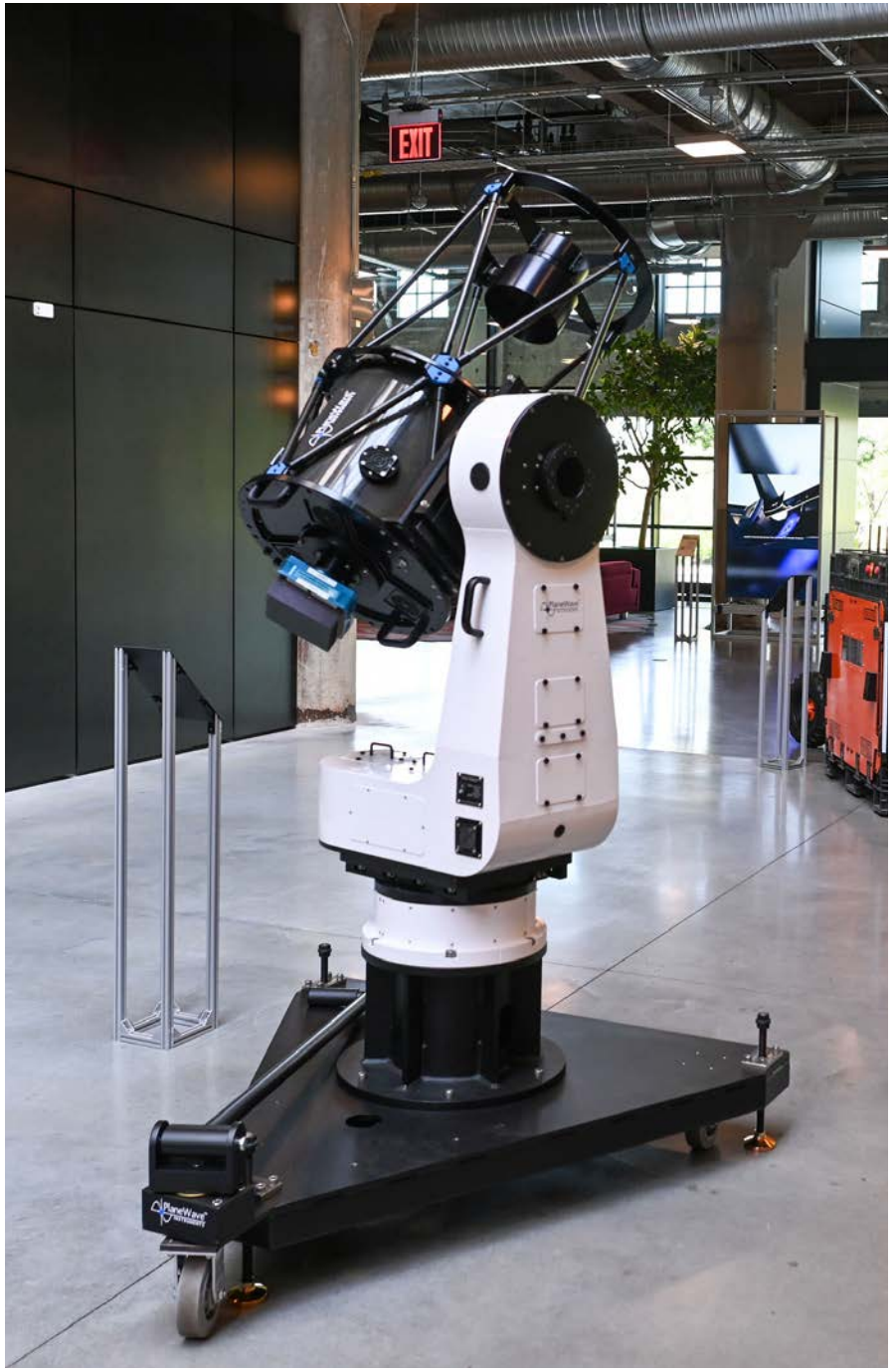
[5] These industries were classified in late 2024 and early 2025.

Tech-Enabled Ventures

Description: Tech-enabled ventures/companies are those that create a tech solution for a non-tech application or create technical solutions to go on top of existing business processes. Often, these might be existing industries/firms that have applied tech to their products or services.

Why tech: Application of tech to create new products, processes, or market efficiencies

Example firm: JustAir, a Detroit-based startup, leverages air-quality sensors and data analytics to create platforms that allow communities and partners to monitor the air quality in their neighborhoods and track how it impacts residents' health.

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CAUTION

TECH AND ITS ROLE IN THE U.S. ECONOMY

TECH AND ITS ROLE IN THE U.S. ECONOMY

To understand what's possible for Detroit, it's important to first look at the broader landscape of tech in the U.S. Today, tech is a major driver of the national economy. Using the definition employed in this report, tech accounts for approximately 23% of gross domestic product (GDP).[iii] Additionally, tech accounts for about 1 in 7 U.S. jobs, and one-quarter of the wages in the country.

Tech firms are also substantial targets of investment, with almost one-half of venture capital going to artificial intelligence (AI) and machine learning (ML) alone, reflecting the rapid increase in prominence of AI and ML.

Tech is critical to the United States economy

Tech jobs, tech wages, STEM Bach+ graduates, and venture capital (VC) investments in artificial intelligence and machine learning as a percentage of the U.S. total, 2022 or 2023

14%
JOBS

25%
WAGES

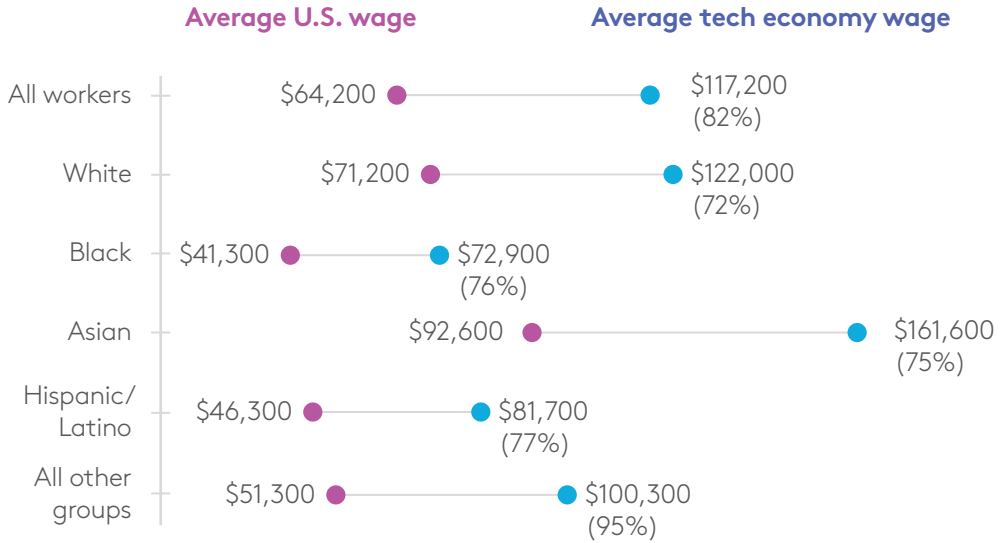
46%
VC DEALS
(artificial intelligence + machine learning)

Note: Statistics exclude Tech-enabled Ventures
Sources: data-Fab, 2023; NCES-IPEDS; Pitchbook; Mass Economics analysis

Jobs in tech also tend to pay more than the average position in the U.S. Because of this higher pay, the tech economy accounts for 25% of total wages in the U.S., despite accounting for only 14% of jobs. Higher wages in tech jobs are fairly consistent across different races/ethnicities, ranging from 72% to 95% higher wages compared to the average total economy wage. Though all races/ethnicities enjoy a wage premium when working in the tech industry, it is crucial to note that Black and Hispanic/Latino tech workers are still paid far less than their white and Asian colleagues.

Tech jobs pay significantly more than the average job in the United States, across all races/ethnicities

Average wages and tech wage premiums (%) by race/ethnicity, U.S., 2021



Sources: dF-QWI, 2021; Mass Economics

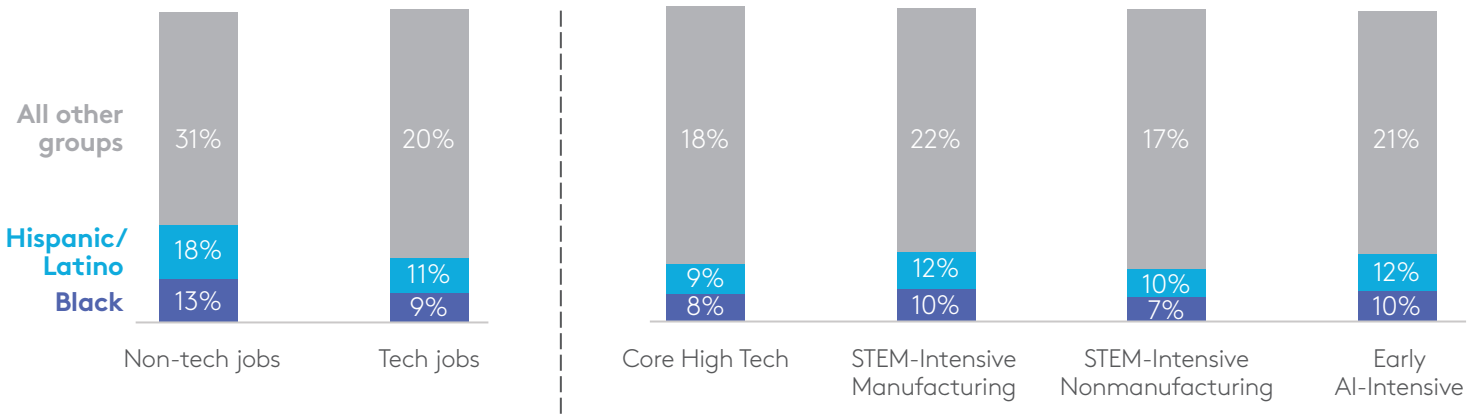
Access to tech jobs

Though tech has an outsized impact on the economy, access to jobs in tech industries is far from universal. Compared to the wider economy, Black and Hispanic/Latino workers are slightly underrepresented in tech jobs, especially within Core High Tech and STEM-Intensive Nonmanufacturing.

Studies that have looked into the lack of diversity in tech have regularly noted challenges related to securing the initial role and career progression for Black and Hispanic/Latino workers breaking into tech. For example, the U.S. Equal Opportunity Employment Commission and Government Accountability Office have both published studies that found evidence of challenges regarding career progression for Black and Hispanic/Latino high-tech workers[iv] and persistent challenges with oversight and enforcing of equal opportunity and anti-discrimination laws and practices at tech industries.[v] The Kapor Center's State of Tech Diversity report also notes several challenges specific to Black workers and founders, including barriers in hiring and opportunities for leadership positions, inequities in compensation, and uneven access to capital for those looking to start a business.[vi]

Black and Hispanic/Latino workers are underrepresented in tech jobs nationally

Share of workers by race in tech and non-tech jobs, Ages 16+, U.S., 2021



Sources: dF-QWI, 2021; Mass Economics analysis

Tech founders

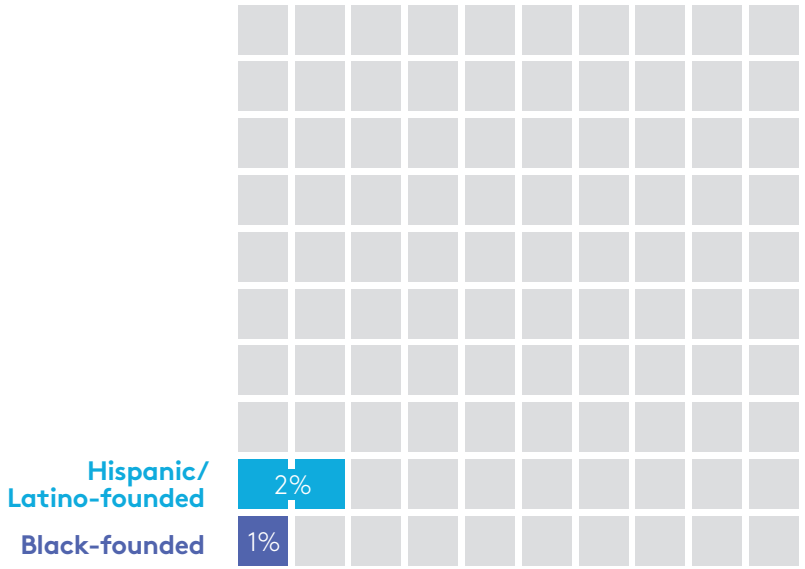
Both Black and Hispanic/Latino workers are underrepresented in entrepreneurship nationally, and this translates to the tech economy, as well.[vii] Nationally, Hispanic/Latino-founded firms make up 4% of all privately held firms but only 2% of tech-related firms.[viii] This ranges from a low of 1% in STEM-Intensive Nonmanufacturing to a high of 3% in Early AI-Intensive companies across the tech categories.[ix] Black-founded firms make up 1% of all privately held firms and 2% of tech-related firms.[x] Across the tech categories, these shares range from a low of 1% in STEM-Intensive Nonmanufacturing to a high of 2% in Early AI-Intensive.[xi] It is worth noting that in Michigan, the shares of Hispanic/Latino- and Black-founded firms that are tech-related—and across all tech categories—are lower than their respective share of all privately held firms.[xii]

A key source of these disparities is access to venture capital (VC), a critical funding component for many tech companies, startups in particular. Across the U.S., Black- and Hispanic/Latino-founded firms' share of VC funding has hovered at about 3% over the last decade, despite these groups collectively accounting for 32% of the U.S. population. [xiii]

When thinking about the futures of the U.S. and Detroit, Black and Hispanic/Latino founders, as well as other underrepresented demographics, need to be a focal point of tech strategies and solutions so that the U.S. can remain competitive and innovative in the tech space.

Black- and Hispanic/Latino-founded firms receive little venture capital investment nationally

Share of VC funding to Black- and Hispanic/Latino-founded startups in the U.S, 2016-24 average



Sources: Crunchbase (for Black- and Hispanic/Latino-founded); Mass Economics analysis

The data on tech in the United States are clear. The tech economy has the power to generate jobs and wealth like few other industry clusters can. However, Black and Hispanic/Latino entrepreneurs and workers are often left out.

THE TECH ECONOMY IN DETROIT

Industry

Detroit has a large tech industry

Detroit is not typically thought of as a tech hub, but there is a significant tech economy in the city and region.[6]

In 2023, there were 410,000 tech jobs[7] in Metro Detroit, which ranked 12th among all major metro regions.[xiv] Importantly, this concentration of tech jobs is about 60% more than one would expect to find in an economy of Metro Detroit's size.[8,xv] The region's tech economy has also grown significantly over recent years. From 2010 to 2023, tech jobs in the region grew 46%, this growth rate ranked 22nd among all major metros.[xvi]

Situating Metro Detroit among the 50 largest metros helps to contextualize the strength of the tech economy here. The region's 410,000 tech jobs are just behind Atlanta (412,000) and just in front of Philadelphia (394,000). Detroit is also not too far behind some powerhouse tech regions like San Francisco (580,000), Boston (537,000) and Seattle (494,000). The tech economy here is also significantly larger than regions like Pittsburgh (168,000) and Cleveland (134,000), which are often considered peers of Detroit in other contexts. These comparisons are not being made to inspire competition, but rather to make a key finding for this report clear:

The **tech industry in Detroit** is already **strong**, and a critical component of the city, region, and state's economies.

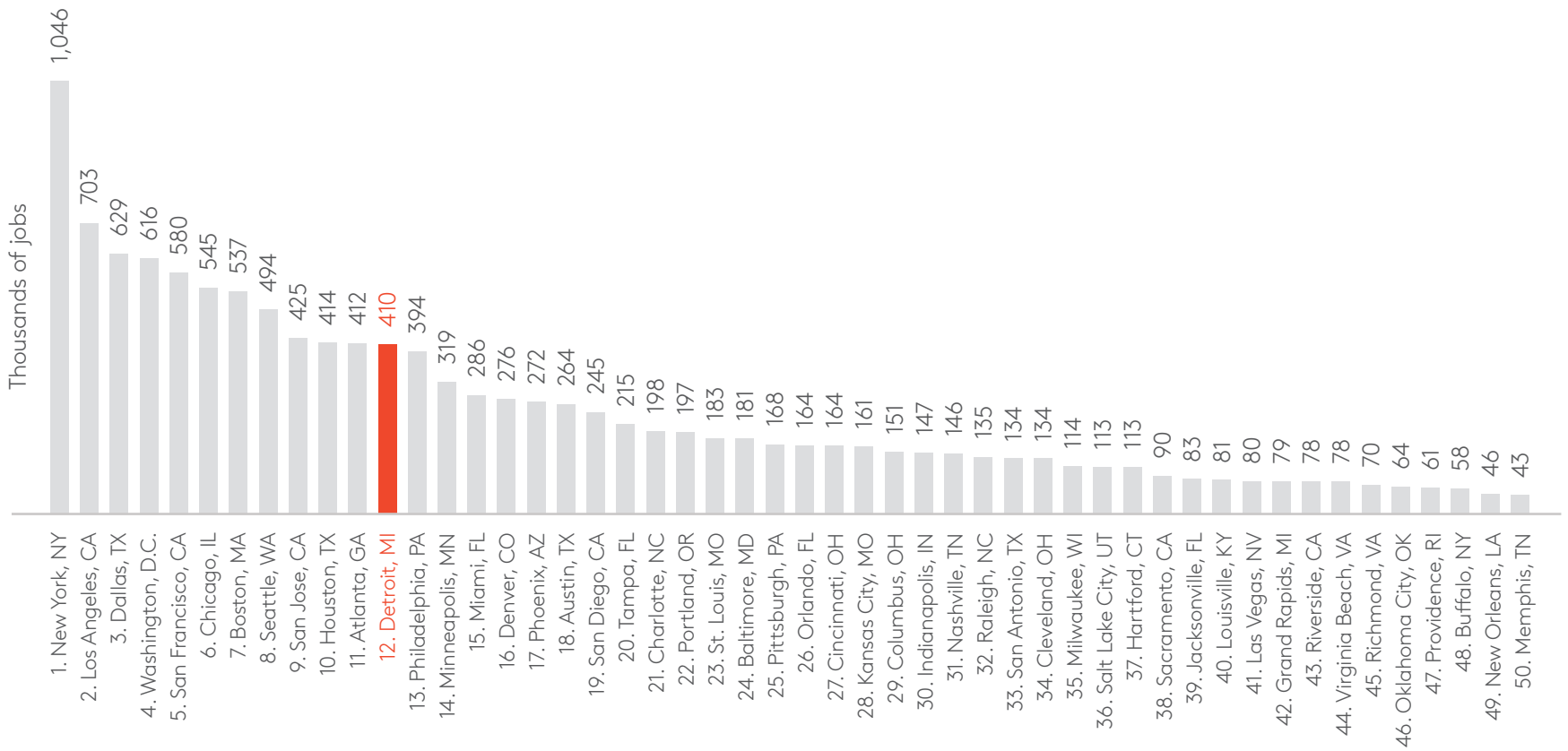
[6] For this report, Metro Detroit covers six counties (Lapeer, Livingston, Macomb, Oakland, St. Clair, and Wayne) and is home to 4.4 million residents, making it the 14th largest metro region in the country.

[7] Statistics exclude Tech-Enabled Ventures.

[8] This is a concentration ratio or location quotient. Concentration ratios are a statistic that compare the concentration of an industry locally to a baseline, usually the concentration of that industry nationally. These are used to help researchers understand specializations within an economy. In this case, the concentration ratio for Metro Detroit's tech industry was 161%, or 61% larger than you would expect for an economy of its size.

Metro Detroit ranks 12th in tech jobs out of the 50 largest Metro regions

All tech jobs (thousands) for 50 largest MSAs, 2023

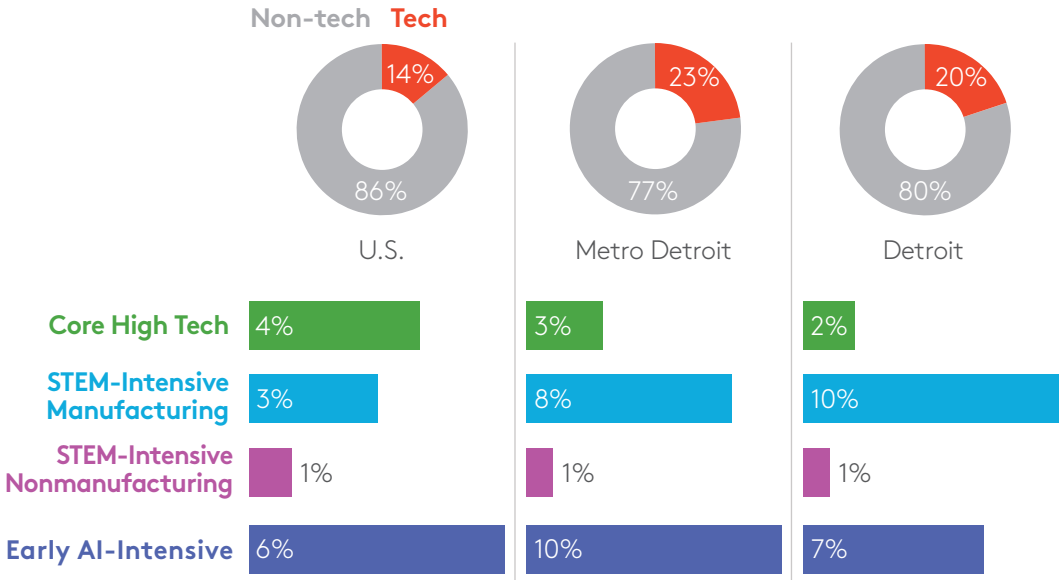


Note: Statistics exclude Tech-Enable Ventures;
Sources: data-Fab, 2023; Mass Economics analysis

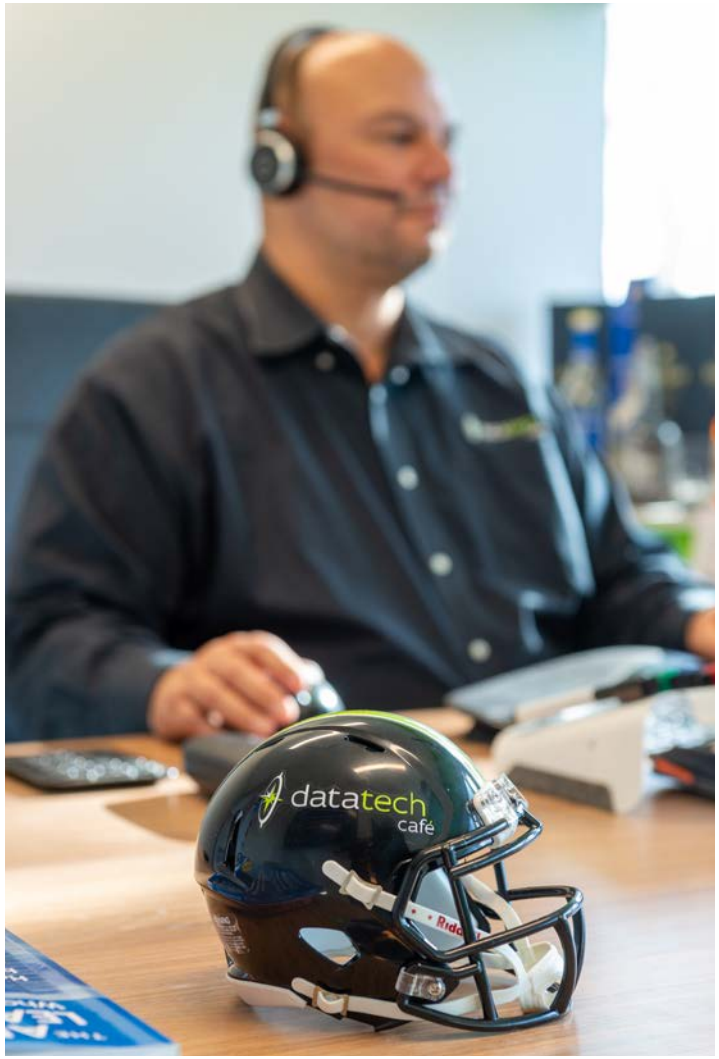
Proportionally, tech jobs accounted for 20% of the city's total jobs, and 23% of the region's. This is higher than the share nationally, where tech accounts for only 14% of the nation's jobs. Additionally, Detroit's tech jobs make up about 10% of the region's tech jobs.

Tech jobs accounted for 1 in 5 of all jobs in Detroit

Tech jobs as share of all jobs, U.S., Metro Detroit, and Detroit, 2023



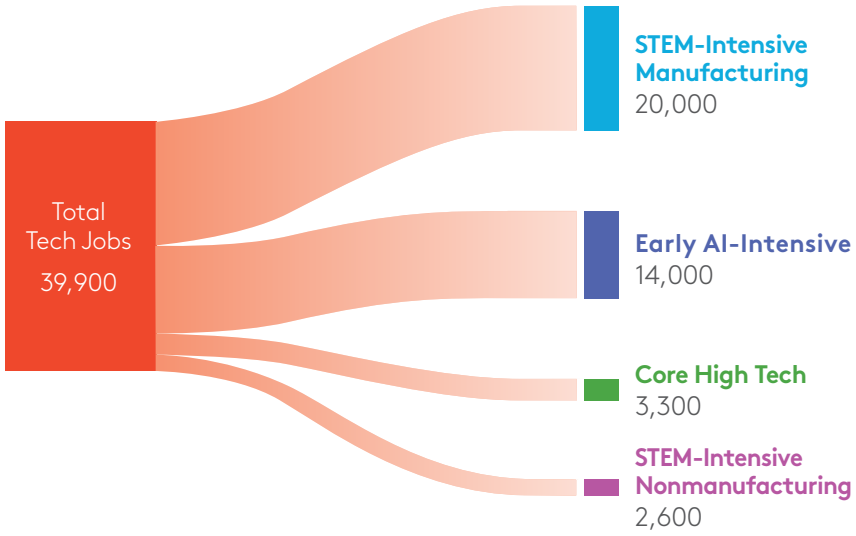
Note: Statistics exclude Tech-Enabled Ventures;
Sources: data-Fab, 2023; Mass Economics analysis



Zooming into the city of Detroit specifically, there were about 40,000 tech jobs in 2023, with STEM-Intensive Manufacturing and Early AI-Intensive being the largest contributors.

Detroit's tech industry is significant

Tech jobs in Detroit, 2023



Note: Statistics exclude tech-enabled Ventures.
Sources: data-Fab, 2023; Mass Economics analysis

Within each category of tech, jobs are spread across several industries. For STEM-Intensive Manufacturing, motor vehicle manufacturing is the top industry for tech jobs. Management of businesses and consulting are the top industries for tech jobs within AI-Intensive tech. Additionally, computer systems design and electric power generation lead the way for Core High Tech and STEM-Intensive Nonmanufacturing, respectively.

Top five industries in each tech category, by number of jobs, Detroit, 2023

Tech Category/Industry	Number of Jobs
STEM-Intensive Manufacturing	
Motor vehicle manufacturing	11,100
Motor vehicle parts manufacturing	4,000
Engine, turbine, power transmission eqpt. manufacturing	2,900
Petroleum and coal products manufacturing	750
Other general purpose machinery manufacturing	420
Early AI-Intensive	
Management of companies and enterprises	7,300
Management, scientific, and technical consulting services	3,000
Architectural, engineering, and related services	2,300
Insurance carriers	810
Other professional, scientific, and technical services	660
Core High Tech	
Computer system design and related services	2,300
Web search portals, libraries, archives, other info services	250
Wired and wireless telecommunications (except satellite)	240
Media streaming dist., social networks, content providers	190
Computing infra. providers, data processing, web hosting	180
STEM-Intensive Nonmanufacturing	
Electric power generation, transmission and distribution	1,900
Scientific research and development services	400
Pipeline transportation of natural gas	230

Note: Not all categories have five industries that are significant sources of jobs in Detroit. Statistics exclude Tech-enabled Ventures.

Sources: data-Fab, 2023; Mass Economics analysis

A key takeaway is that regionally, STEM-Intensive Manufacturing jobs play an instrumental role in the tech economy, making up 8% of all jobs regionally, compared to 3% of all jobs for the U.S. This ranked first out of the 50 largest U.S. metropolitan areas in terms of both the number of STEM-Intensive Manufacturing jobs and the concentration ratio.[xvii] That share rises when looking at the city of Detroit, where STEM-Intensive Manufacturing jobs make up 10% of all jobs. The city has about 3.7 times the number of STEM-Intensive Manufacturing jobs than you would expect for an economy of its size.[xviii] Though this is undoubtedly a strength of the region, long-term success depends on diversifying the tech economy and nurturing other types of tech, including Core High Tech. Expanding into these segments will be important for ensuring the tech economy is not tied to one major industry and for attracting capital and generating wealth. Though STEM-Intensive Manufacturing industries are job engines, many of the most visible exits[9] from Michigan in recent years, including Duo Security, Llamasoft, and StockX, are not in the STEM-Intensive Manufacturing category.

[9] An exit can take many forms, including mergers, acquisitions, and initial public offerings (IPOs). These are some of the primary ways in which founders and investors generate returns on their investments and/or efforts in building the company.

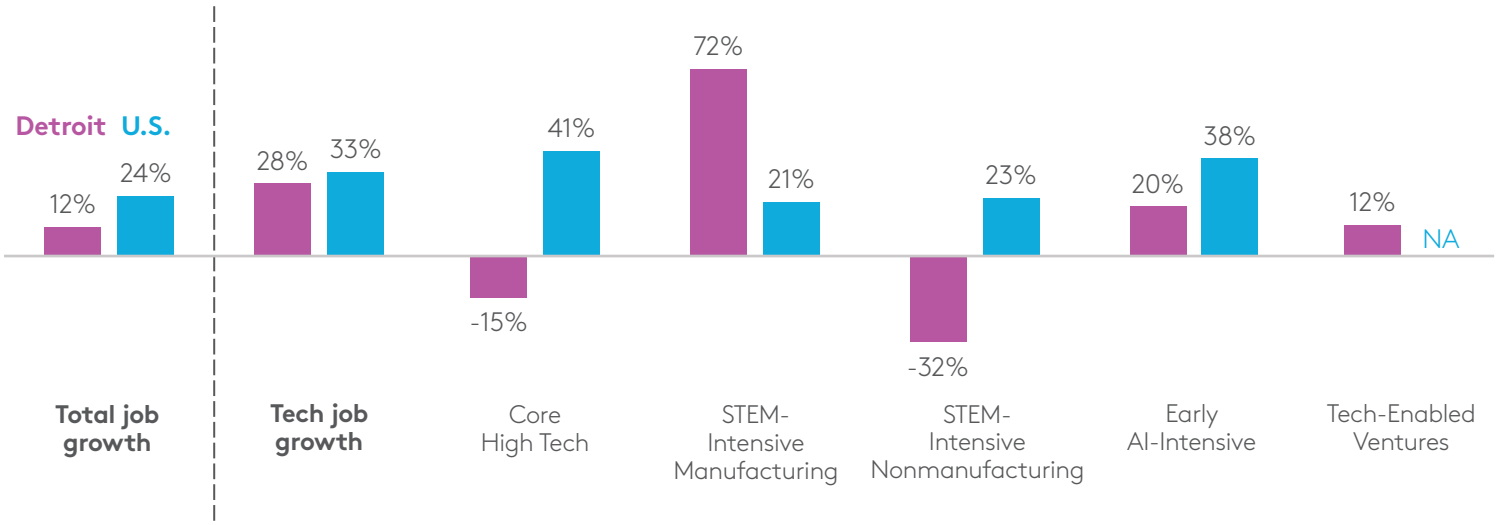
Detroit's tech economy is also growing

Examining growth in tech industries relative to the U.S. helps to highlight both where the region has strengths and where there are opportunities to grow in other higher-growth tech industries.

The tech industry in Detroit has grown dramatically since the end of the Great Recession in 2009. From 2010 to 2023, tech job growth in both Detroit and nationally outpaced job growth in other sectors of the economy. For the U.S., tech growth has been driven especially by gains in Core High Tech and AI-Intensive jobs. Over the same 2010-13 period, Core High Tech jobs in Detroit declined, and tech growth was supported by substantial growth (72%) in STEM-Intensive Manufacturing, as well as growth in industries leveraging AI. Adding tech jobs is positive for the city's economy, but there is a difference in how the tech economy is growing nationally, compared to how it is growing in Detroit. Finding ways to encourage and support growth in Core High Tech industries will be an important factor for Detroit to become a true tech hub.

Detroit's tech jobs have grown significantly since 2010, driven primarily by growth in STEM-Intensive Manufacturing

Tech job growth, Detroit and U.S., 2010-23



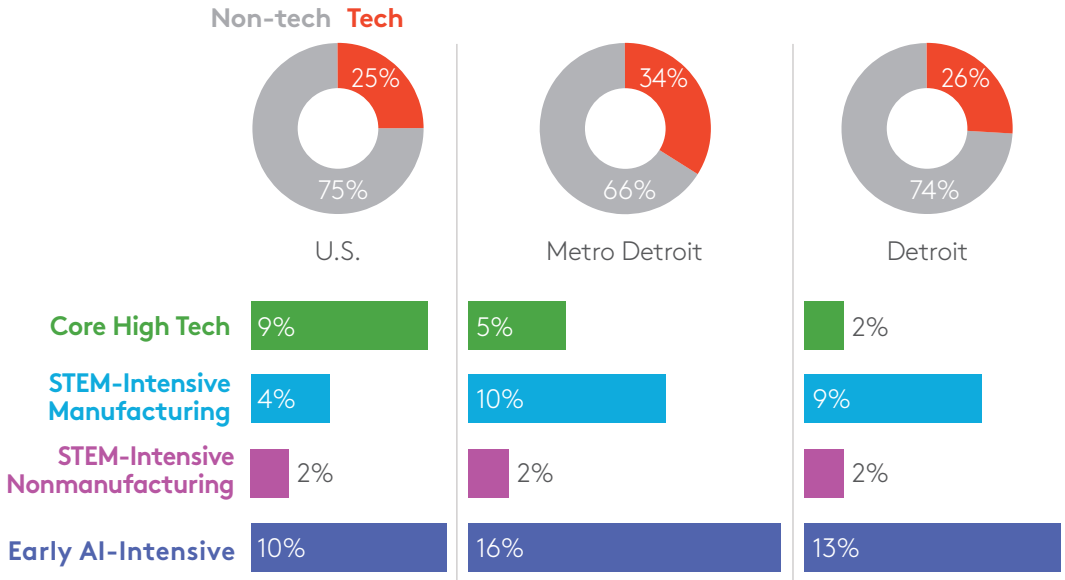
Sources: data-Fab, 2023; Mass Economics analysis

Tech wages

Tech jobs also make up a significant portion of wages generated. For Detroit and the region, the share of wages generated by tech is greater than the share of tech jobs in the economy, demonstrating the higher average wages found in tech industries. In Detroit, tech jobs make up 20% of all jobs, but tech wages make up 26% of all wages. In Metro Detroit, tech jobs make up 23% of all jobs and 34% of wages.

Tech jobs generated 26% of the city's wages and 34% of the region's

Tech wages as a share of total wages, U.S., Metro Detroit, and Detroit, 2023

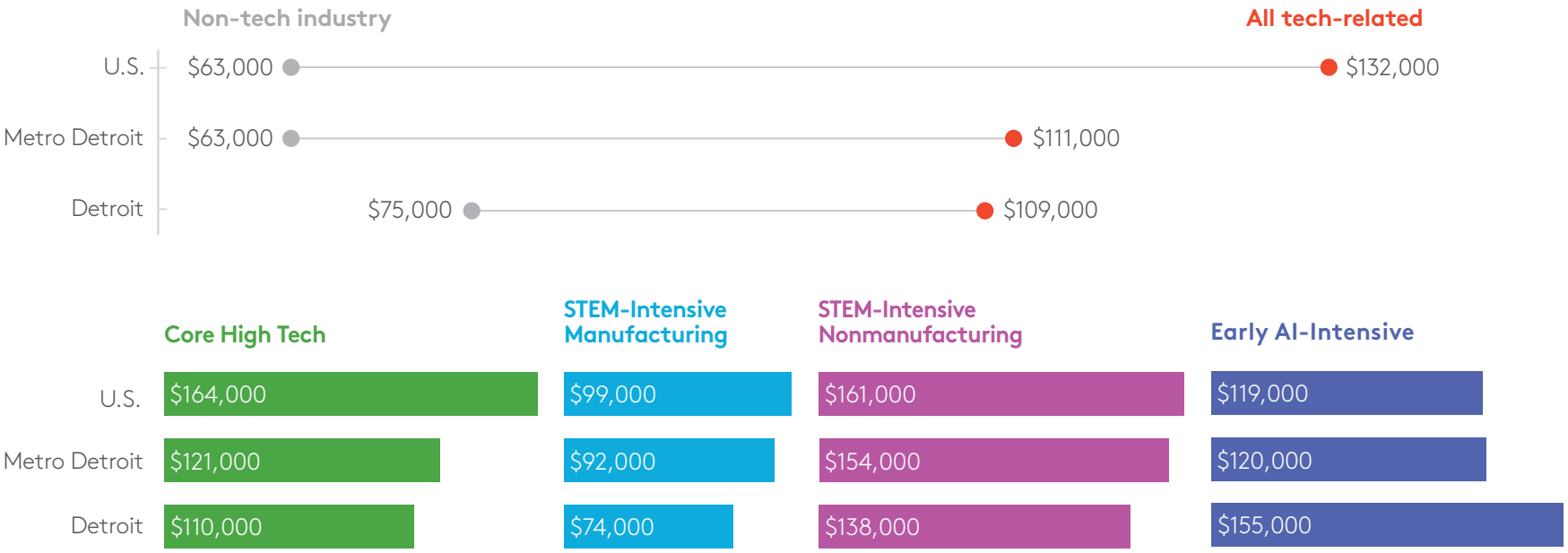


Note: Statistics exclude Tech-Enabled. Totals may not add to 100% due to rounding.
Sources: data-Fab, 2023; Mass Economics analysis

It is important to note that wages differ across these tech categories. This is especially important in the context of Metro Detroit in that STEM-Intensive Manufacturing jobs pay significantly less, on average, than jobs in the other tech segments.

Average wages for jobs in non-tech and tech industries

U.S., Metro Detroit, and Detroit, 2023



Sources: QWI, Mass Economics Analysis

Technical and nontechnical occupations

For better context, it is helpful to look at some of the specific tech occupations present in Metro Detroit. In general, there are two types of roles within tech companies. Technical roles require a specific skillset around computer science and/or STEM, such as software developers and mechanical engineers. Nontechnical roles do not usually require deep knowledge in those areas, and include roles in customer service, sales, and accounting. Both roles are critical to companies.

In Metro Detroit's tech industry, the top technical role is software developer. Across the top 10 occupations, all 10 have either near parity with the average wage or pay well above average wages in the region.

Top 10 technical (STEM) occupations within tech industries in Metro Detroit (2023)

Occupation	Jobs (all tech-related industries)	Average occupation wage as a percent of average U.S. salary
Software developers	22,500	178%
Mechanical engineers	15,900	160%
Industrial engineers	11,200	160%
Computer user support specialists	6,600	94%
Computer systems analysts	6,600	166%
Architectural and engineering managers	6,400	251%
Computer and information systems managers	6,000	256%
Electrical engineers	4,500	162%
Mechanical engineering technologists and technicians	3,300	99%
Civil engineers	3,000	140%

Note: These data do not, and cannot, capture the differences in wages by occupation within tech versus non-tech industries due to unsolvable suppressions. Job tallies are rounded.

Sources: 2023 QCEW, 2023 OEWS, Mass Economics Analysis

Assemblers and fabricators are the most common nontechnical role in Metro Detroit's tech economy because of the inclusion of STEM-Intensive Manufacturing as a tech category. However, other roles on this list are key pieces of any tech company and/or startup, including sales, program management, and accounting. Notably, five of the 10 top non-tech occupations in the region pay above-average wages, demonstrating that tech offers opportunities, even for those without a STEM or computer science background.

Top 10 nontechnical (non-STEM) occupations within tech industries in Metro Detroit (2023)

Occupation	Jobs (all tech-related industries)	Average occupation wage as a percent of average U.S. salary
Miscellaneous assemblers and fabricators	46,000	75%
Customer service representatives	10,800	71%
General and operations managers	9,200	200%
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	8,900	77%
Inspectors, testers, sorters, samplers, and weighers	7,300	71%
Project management specialists	7,200	162%
Sales representatives of services, except advertising, insurance, financial services, and travel	6,700	133%
Management analysts	6,000	159%
Machinists	5,900	83%
Accountants and auditors	5,800	137%

Note: These data do not, and cannot, capture the differences in wages by occupation within tech versus non-tech industries due to unsolvable suppressions. Job tallies are rounded.

Sources: 2023 QCEW, 2023 OEWS, Mass Economics Analysis

Beyond the wages these jobs pay, employees, especially those at tech startups, often benefit from other forms of compensation, including equity in the company and/or payouts when the company is exited or acquired.

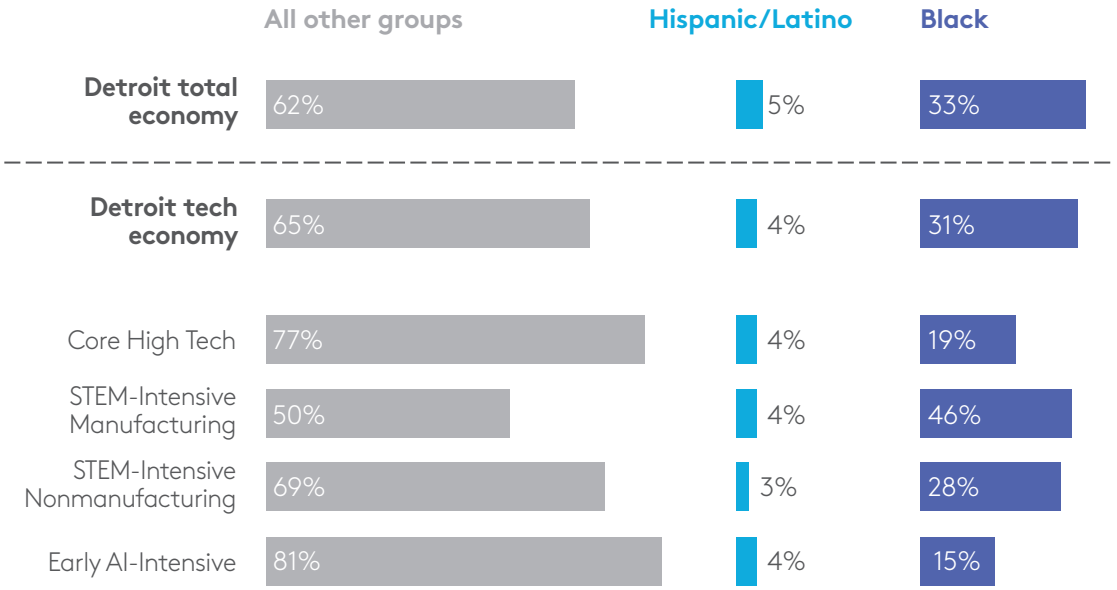
Access to tech opportunities in Detroit varies

The tech economies of both Detroit and the region are critical sources of economic growth and prosperity for residents. However, like the tech economy across the U.S., there are clear issues with access to tech jobs. As the region's tech economy grows there must be equal access to tech opportunities to ensure that Black and Hispanic/Latino Detroiters are able to benefit.

In Detroit's tech economy overall, Black workers are slightly underrepresented in tech compared with the rest of the economy, while Hispanic/Latino workers have parity in tech versus the total economy. This is primarily due to the mix of tech jobs in the city and region. The chart below shows how STEM-Intensive Manufacturing, which makes up nearly half of the city's tech jobs but pays significantly less, on average, but is far more racially diverse than the other tech categories. This diversity was achieved through significant, decades-long struggle to create opportunities for Black and Hispanic/Latino workers in Southeast Michigan's automotive and other manufacturing industries. Among the other categories, especially faster growing, higher-paying segments like core-high tech and Early AI-Intensive, shows a different story: Here, Black workers are significantly under-represented. In short, legacy tech in Detroit is far more diverse than newer and emerging tech. Navigating this disparity will be a significant challenge to tackle for Detroit's tech future.

Compared to the wider Detroit economy, Black workers are underrepresented in faster growing tech segments like Core High Tech and Early AI-Intensive in Detroit

Share of workers by race, total economy and tech related, Detroit, 2021

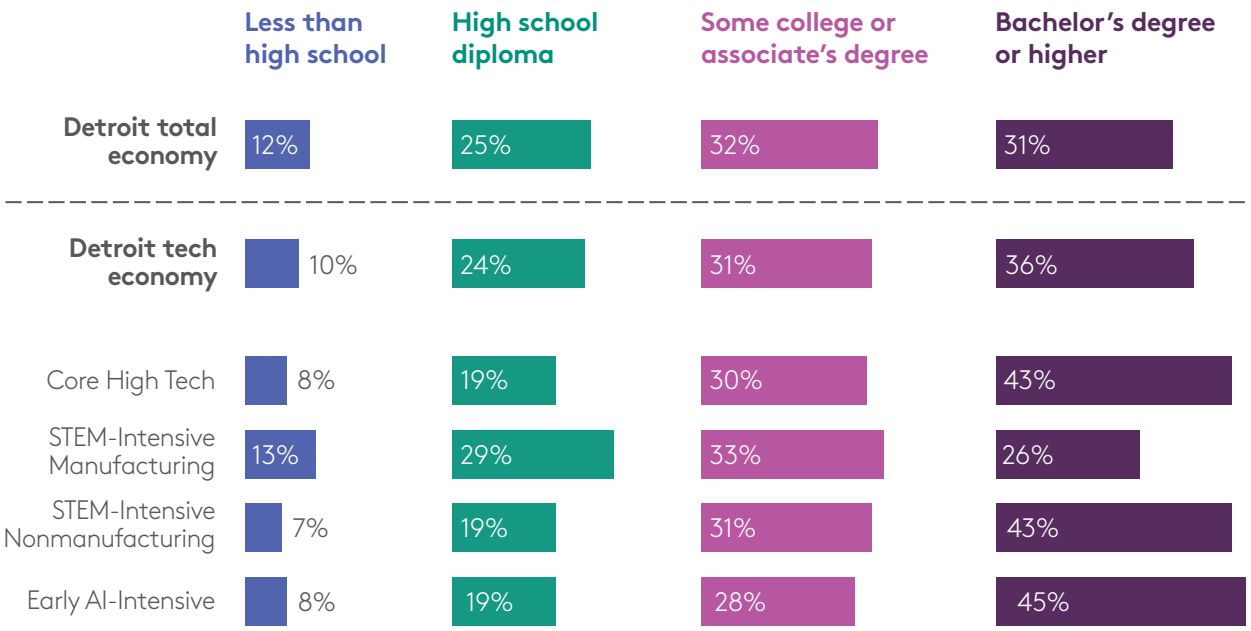


Sources: dF-QWI, 2021; Mass Economics analysis

Along with race, educational attainment is a key factor to consider when tracking who gets to participate in tech jobs. Nationally, almost 70% of the tech workforce has at least some college education, and 39% has a bachelor's degree or higher. The statistics are similar in Detroit and the region. Like the narrative around racial equity, legacy industries in Detroit that employ tech workers, such as STEM-Intensive Manufacturing, are far more diverse in terms of educational attainment than the newer, faster-growing segments.

Especially in non-manufacturing industries, a majority of tech workers in Detroit have at least some college education

Share of workers by educational attainment, total economy and tech-related, Detroit, 2021



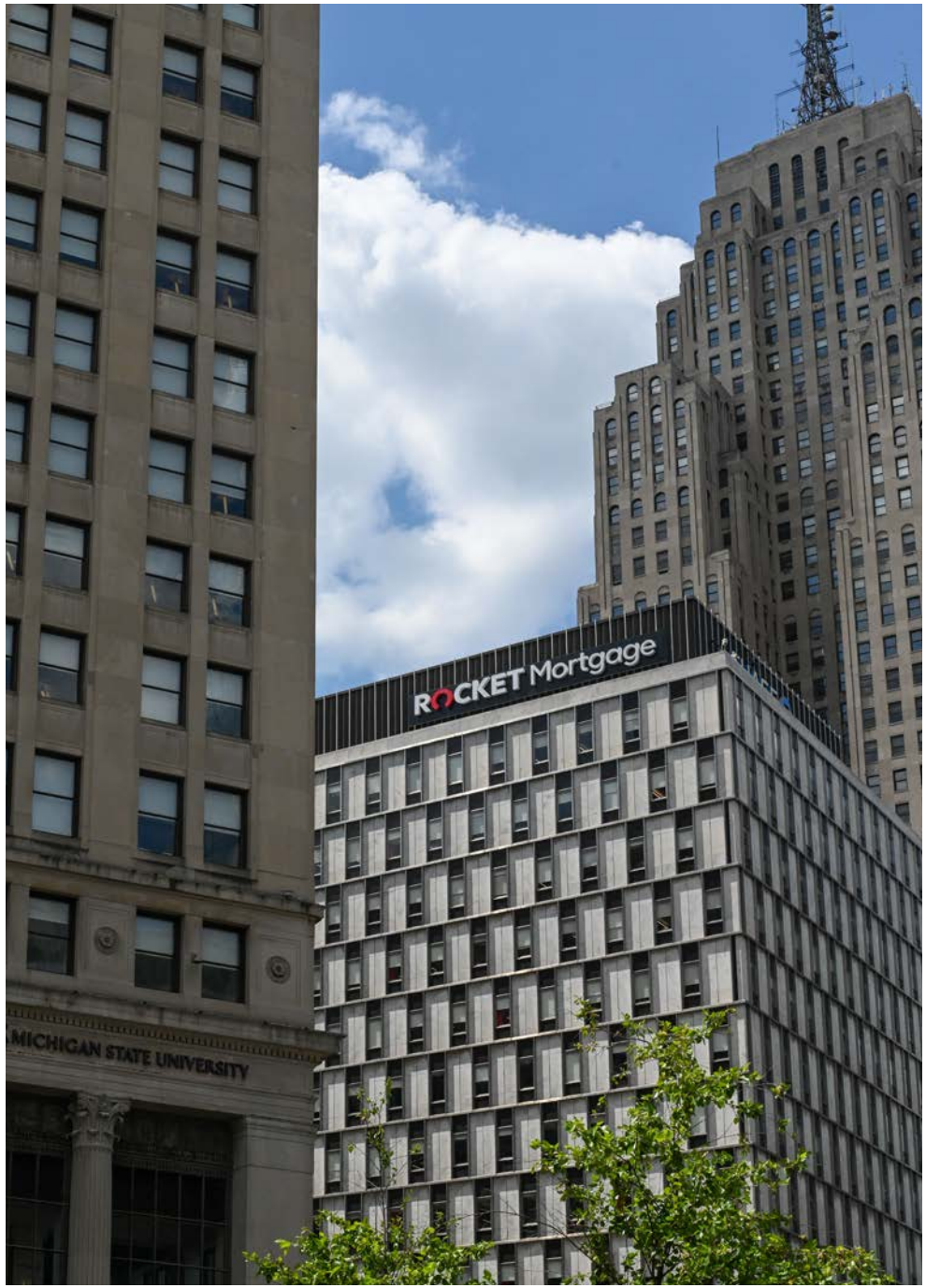
Sources: dF-QWI, 2021; Mass Economics analysis

The act of growing and nurturing companies in Core High Tech and AI should go hand-in-hand with strategies to ensure that a diverse workforce can participate in those industries.

Capital for startups

Though Detroit brings in some venture capital (VC) and grant investment, there is significant room for growth

Funding is the lifeblood of tech companies. Whether it be received from friends and family at the earliest stages, or grant and venture funding in later stages, access to capital is critical for tech entrepreneurs and the broader tech economy. VC and grants, in particular, are important sources for the formation of businesses, as well as for research and development across the U.S. Though there are substantial investment dollars in Detroit's startup ecosystem, more capital is needed, and Black and Hispanic/Latino entrepreneurs face significant barriers in accessing financing.



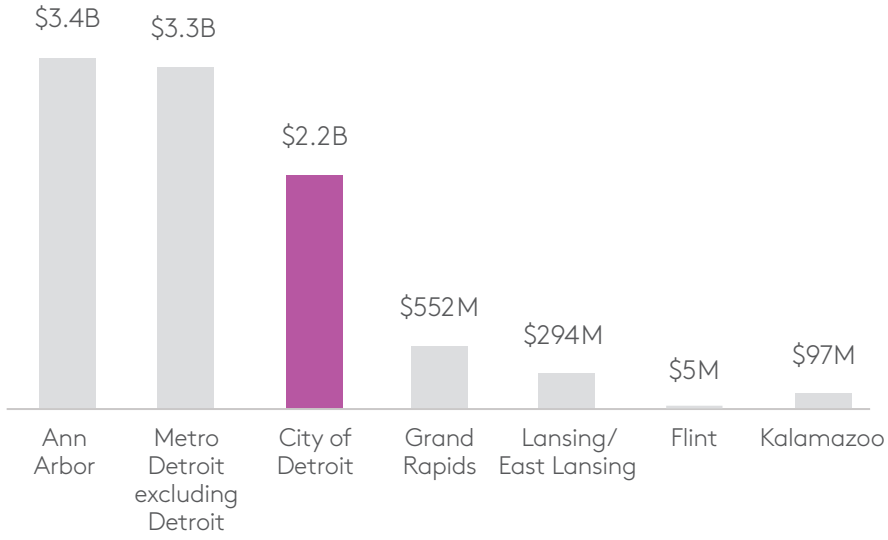
Metro Detroit brings in millions of VC each year for Michigan

Venture capital can be incredibly helpful to tech companies trying to scale quickly, usually because of the size and terms of deals, as well as the mentorship and expertise that come along with VC investment. Within Michigan, Detroit receives a significant amount of the state's overall VC funding. From 2020 to 2024, Detroit companies brought in $2.2 billion in venture capital across all industries—more than all metro areas in the state besides Ann Arbor. In total, Metro Detroit received more than $5.4 billion in venture capital.[xix,10,11]

Though this is significant, in 2024, Metro Detroit was 26th in venture capital among the nation's metro regions. (Metro Detroit is the 14th largest metro area by population).[xx] Although it makes sense that Detroit is not on the scale of major tech hubs like San Francisco and New York, it is important to note the large gap between the amount of venture capital present in those ecosystems, and what is currently available in Metro Detroit; the top five metro regions in the nation for venture capital in 2024 saw 16 to 91 times the amount invested that Metro Detroit did.[xxi]

From 2020 to 2024, the City of Detroit brought in more venture capital than the Grand Rapids, Lansing, Kalamazoo, and Flint metro regions combined.

Value of venture capital investment for Detroit and Metro Detroit compared to other large metros in Michigan, 2020-24 (in 2024 dollars)



Source: Pitchbook; Mass Economics analysis

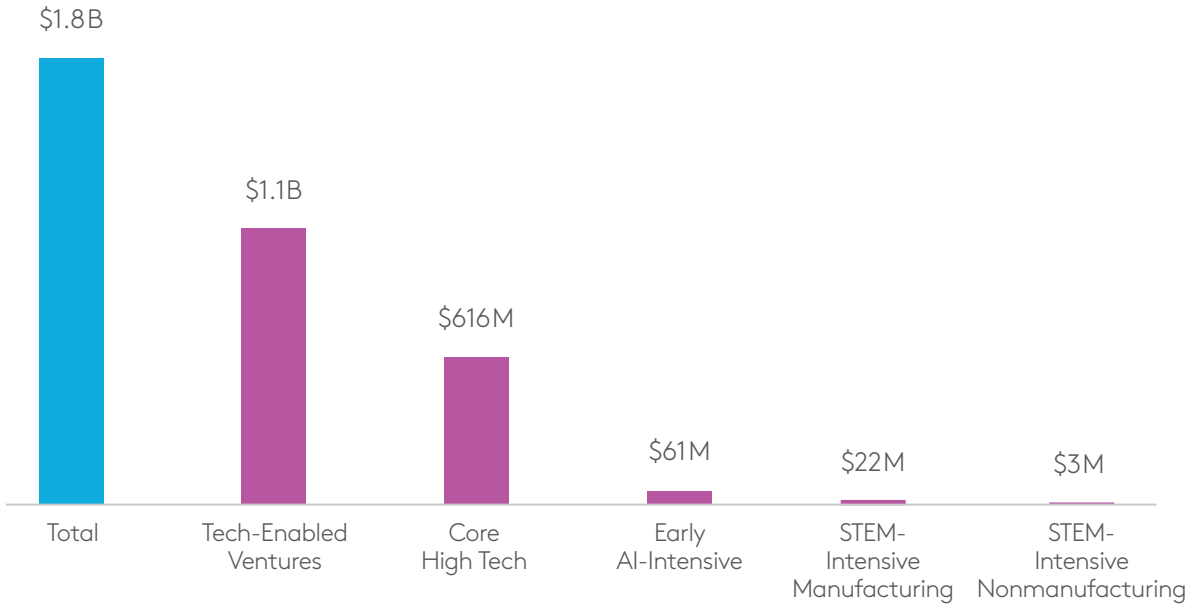
[10] Pitchbook does not report out dollar deal values for all deals in its datasets. (Among venture capital deals in 2020-24 made to companies in Detroit, Metro Detroit, and the state, approximately 60% of all deals have reported dollar values.) As a result, the project team estimates deal values for those not reported in Pitchbook based on the application of the average deal size of those deals that are reported in the same geography and tech category (i.e., in the same industry grouping). When summed with the reported deals, an overall estimated deal value is created and utilized in the report. This way, the number of reported deals and estimated deal values reflect the same universe of deals.

[11] The chart above tracks venture capital funding to all companies/industries in 2020-24, not just tech.

Narrowing down to venture capital going to tech companies, Detroit receives significant investment, especially in the Core Tech and Tech-Enabled Ventures categories. This is mainly reflective of the idea that certain companies, such as those in the Core High Tech and Tech-Enabled categories, can be far more attractive to investors.

Detroit brings in a significant amount of venture capital related to tech, especially in Core High Tech and Tech-Enabled Ventures

Summary of venture capital activity by tech category, Detroit, 2020-24, (in 2024 dollar value)



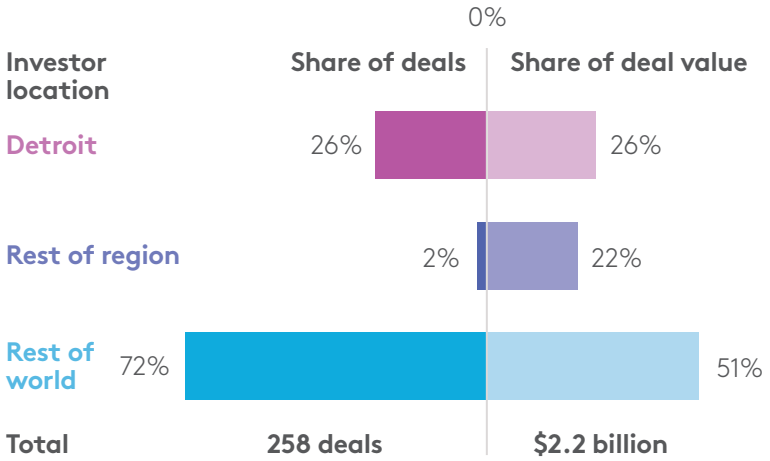
Sources: data-Fab, 2023; Pitchbook; Mass Economics analysis

Venture capital comes from local firms and from across the world

Considering investor location is also important. If a significant share of venture capital dollars comes from within the city or region, it demonstrates a level of support from local investors that may help convince startups to stay and grow. Conversely, a tech ecosystem that is dominated by outside investors may be cause for concern, as those businesses could eventually move to be closer geographically to funders as they work to grow and scale.

The majority of deals in Detroit are from outside of the region

Geography of venture capital investors for Detroit-based companies, 2020-24



Note: Only 151 deals had values reported, see footnote 10
Sources: Pitchbook; Mass Economics analysis

Detroit's tech industry receives investment from both inside and outside the region. From 2020 to 2024, there was an even split in the amount of venture capital flowing into Detroit from local and regional venture capital firms versus those from outside the region. About 1 in 4 of all venture capital deals and dollars came from investors located in Detroit. Conversely, investors from the rest of Metro Detroit account for a small number of deals (2%), but 22% of the value. This means that regional investors are not doing many deals with Detroit companies, but when they do, the deals are large. The opposite is the case with investors from outside the region. They account for almost three-quarters of the deals (72%), but only 51% of venture dollars over that time, indicating that they are doing somewhat smaller deals on average. Though the attention from the rest of the world is positive, seeing local firms invest more heavily in Detroit's tech founders would be a valuable improvement to the ecosystem.

Satellite offices versus headquarters

Though much of this report focused on what Detroit can do to support locally founded companies, it's important to consider the impact of companies headquartered outside of Detroit on the region's tech economy, as well as the funding landscape. Many established tech companies already have relationships with venture capital firms and pull in significant amounts of investment. From 2020 to 2024, Pitchbook reports that venture-backed firms across all industries with established Detroit offices brought in around $7 billion in venture capital, while during the same period, Detroit-headquartered companies brought in around $1 billion, a high percentage of which was a single company, StockX. If Detroit were able to attract more regional offices of large tech companies, it could bring a significant amount of new investment into the ecosystem.

Sources: Pitchbook; Mass Economics analysis


EXIT

The venture capital ecosystem in Detroit has substantial challenges that need to be solved for the tech economy to truly flourish

Though Detroit does receive venture capital investment from both regional and global investors, interviews for this project often highlighted that funding levels, especially from local investors, are not where they need to be for Detroit to become a major hub for tech activity. This dynamic is shown by the available data. In terms of the number of deals Detroit-based venture capital firms participated in—with or without other participants from inside or outside Detroit—only 26% were made to companies in the region (17% to Detroit-based companies) between 2020 and 2024.[xxii] Put a different way, a majority of both the deals and deal value involving Detroit-based venture capital firms went to companies outside Michigan.[12] Interview participants honed in on a few key challenges, including the lack of access to funding for entrepreneurs of color, challenges attracting funding for ventures outside of traditional venture capital investment theses/strategies, and an acute lack of capital for businesses trying to scale.

CHALLENGE 1.

Tech entrepreneurs, especially Black and Hispanic/Latino entrepreneurs, struggle to access capital at any stage

Interview participants for this project underlined the fact that Black and Hispanic/Latino entrepreneurs experience deep challenges when raising capital for their businesses in Metro Detroit. As noted earlier, this is a well-established and troubling trend nationally, with Black entrepreneurs receiving about 0.9% and Hispanic/Latino entrepreneurs receiving about 1.8% of venture capital funding over the 2016-24 period.[xxiii] The reasons for this disparity are well-researched and include Black and Hispanic/Latino founders not fitting the traditional profile that venture capitalists tend to invest in, a lack of social capital and denial of access to certain social networks, and bias from investors.[xxiv]

Beyond these national findings, local entrepreneurs have shared that they are not given access to, or welcomed into, the right business networks that lead to receiving investment, whether it be venture capital, angel investors, or private equity. Additionally, interview participants noted that the venture capital industry in the region is not as diverse as it should be, especially when serving a majority Black city. This is in line with data from the National Venture Capital Association (NVCA), which found that only 4% of venture capital firms nationally are Black-led.[xxv] Without diversity in the ranks of investors, it will likely remain challenging for Black and Hispanic/Latino founders to access key venture capital at an equitable rate.

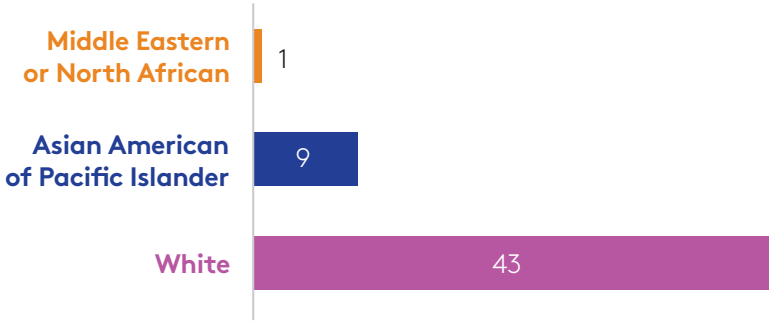
[12] It is important to note that the specific dollar value of the participating city of Detroit-based venture capital in a given deal is not available, only the total value of the deal they participated in.

One area where the impact of equity issues around VC is acutely felt is company exits, which generate wealth for founders, employees, and investors. Exiting a company can take multiple forms, including selling a share of ownership, IPOs, or mergers and acquisitions. Pitchbook's databases are not always complete, but are one of the main sources for data on VC spending. From 2020 to 2024, Pitchbook showed 31 venture-backed exits[13] of Metro Detroit based companies.[xxvi] These 31 exits generated at least $1 billion in value combined, and were associated with 53 founders.

Though the overall impact of venture capital demonstrated by these exits is powerful, equity concerns are evident. Of the 53 founders associated with the 31 exits, 43 (81%) were white, nine (17%) were Asian American or Pacific Islander, and one was Middle Eastern or North African. No Black or Hispanic/Latino founders could be traced to those exits, despite the diverse demographic makeup of the region. The lack of Black and Hispanic/Latino founders in these successful exits is a challenge that needs to be solved. If the systems and capital that allows companies to start up, scale, and exit are readily available for only white and Asian founders, then many Detroiters will be shut out of tech and its potential benefits and the region will not be able to reach its full economic potential.

The majority of (traceable) founders for venture capital exits in Metro Detroit were white and Asian

Race/ethnicity of founders associated with all venture capital-backed exits in Metro Detroit, 2020-24



Sources: Pitchbook; Mass Economics analysis

[13] These exits include all types of companies, not just tech.

CHALLENGE 2.

Risk aversion due to cultural factors and/or industry can make it difficult to secure venture capital.

Across interviews for this project, participants regularly emphasized that the funding landscape in the region feels significantly more risk averse than coastal funding ecosystems. Though some of this might simply be cultural, reflective of the individuals operating in the region, or reflective of the way business is done in Metro Detroit, some of the risk aversion is tied to the differences between industries like software development, which fit venture capital investment theses, and the region's historical legacy and current tech verticals in manufacturing and mobility. Often, manufacturing physical products requires larger amounts of upfront capital, a longer time horizon, and more variables—such as international supply chains—than the software companies that often attract venture capital.[xxvii] Because of these factors, these companies can also be more difficult to scale than companies in industries that tend to attract venture capital investment. These dynamics are felt by the city's entrepreneurs who find it difficult to get venture capital firms to invest in hard tech products, as opposed to apps and other digital innovations. Given that so much of Detroit's tech industry is rooted in manufacturing and Tech-Enabled Ventures, securing sources of venture funding that are comfortable with less traditional deals is crucial.

"Mission-driven" venture capital

Mission-driven venture capital firms (VCs) in Detroit are more likely to invest in more and smaller deals on their own (without co-participants)[14] and, importantly, they are more likely to invest in Detroit-based companies, while non-mission-driven VCs in Detroit are more likely to participate in fewer, larger deals with more (and often out-of-state) co-participants in companies outside the city. But of the 14 VCs located within Detroit that participated in at least one deal (nationwide) between 2020 and 2024, only two are classified as "nonprofit venture capital" or "impact-investing" firms by Pitchbook: Invest Detroit Ventures and, as of 2024, the defunct Venture for America.

The average deal size Invest Detroit Ventures participated in was about $3.1 million ($5 million for Venture for America), orders of magnitude smaller than other Detroit-based VCs. However, Invest Detroit Ventures made up over half (53%) of the single-investor deals made by Detroit-based VC firms, and 33% of deals participated in by Detroit-based VCs to Detroit-based companies (highest share out of the 14 local firms) pointing to its willingness to invest in companies others may overlook, consider too small, or deem "too risky."[15]

It is worth noting that some interview participants mentioned an alternative viewpoint on this topic. Although mission-driven VCs may be willing to invest in overlooked founders, getting VC dollars from these sources can be considered a downside in tech circles because more traditional and higher-dollar deals rarely follow those made by mission-driven investors.

[14] The average number of investors for deals Invest Detroit Ventures participated in was 4.5 versus an 8.2 unweighted average of all Detroit-based firms. Though the deal values are small, it is worth noting that the average number of investors for deals that TechTown participated in was just 1.1.

[15] TechTown made up an additional 24% of single-investor deals made by Detroit-based VC firms, but this is less surprising based on its accelerator/incubator-stage and dramatically smaller investments (see footnote 1).

CHALLENGE 3.

Detroit's tech ecosystem requires more growth-stage funding

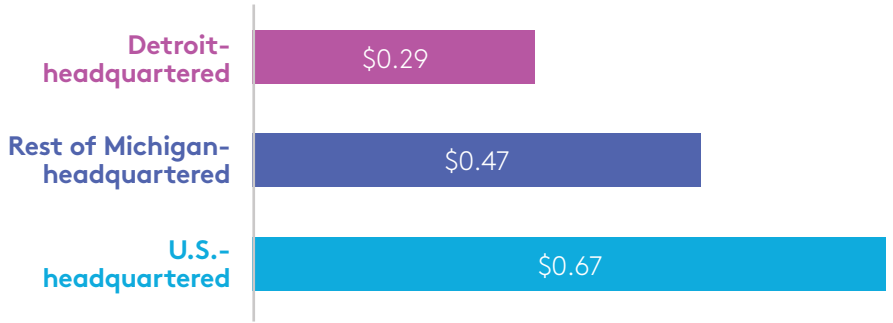
Another challenge in Detroit's venture ecosystem revolves around the type of venture capital awarded to companies. Some, like pre-seed and seed funding are for early-stage businesses, while series A are for growth stage companies. There are other types of funding like series B, C, and D+ that are for more established or "later stage" businesses.

In Detroit, early-stage capital is far easier to locate than growth stage. For every $1 of early-stage capital in Detroit, there is only $0.29 of growth-stage capital, far behind the state ($0.47 growth per $1 early) and U.S. ($.67 growth per $1 early) ratios.

If stakeholders want to see large, local-founded tech firms in the city, shoring up the amount of growth-stage capital available in the region is a critical piece of the strategy. Beyond the data, interview participants noted that it is common for regional tech startups to struggle to find growth-stage funding, and some end up having to leave the region to locate the capital they need to grow their business, especially for Black and Hispanic/ Latino entrepreneurs.

Detroit lags the rest of Michigan and the U.S. in growth-stage capital

Growth-stage investment per $1 of early-stage capital, 2020-24



Note: Early-stage refers to pre-seed and seed funding, while growth-stage refers to series A funding.
Sources: Pitchbook; Mass Economics analysis

If Detroit has a goal of seeing truly transformative tech companies based in the region, increasing funding opportunities for companies trying to scale is critical. If businesses that have the chance to scale and hire tens, hundreds, or even thousands of employees cannot locate the capital they need, they could fail or move out of the region or state.

CHALLENGE 4.

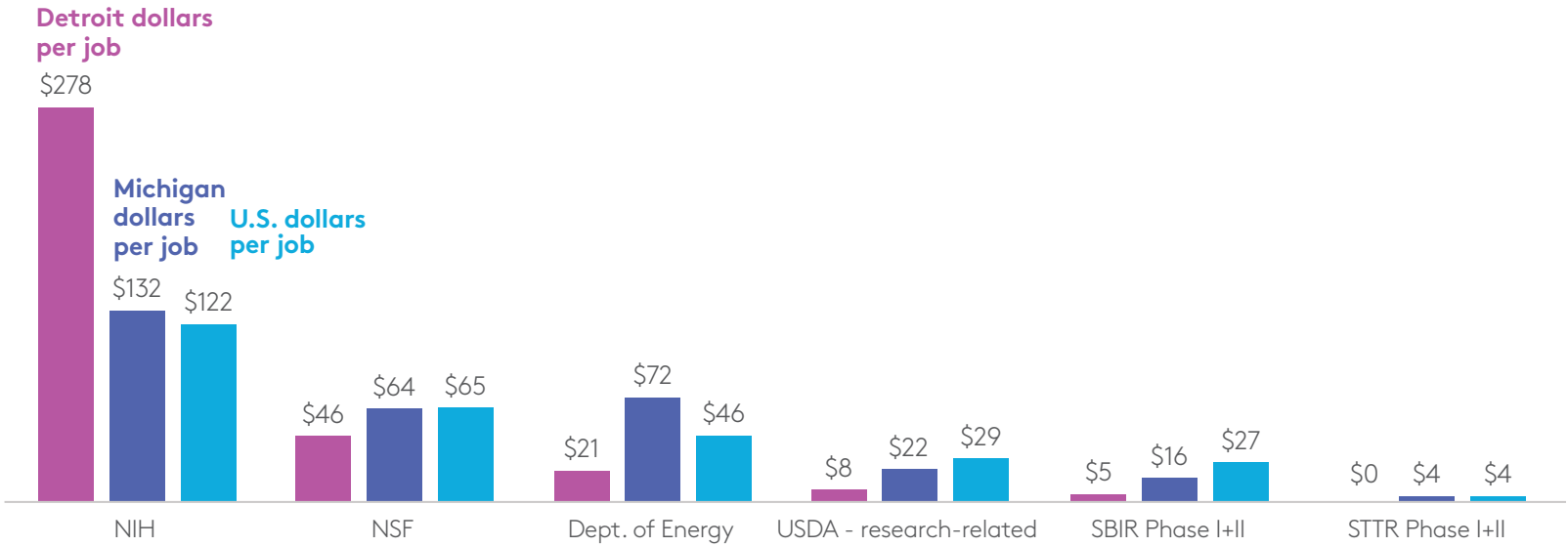
Detroit can improve on attracting grant dollars geared towards business formation and technology development

While venture capital is often what comes to mind when thinking about the tech industry, grants—especially those from federal agencies—are another important source of funds in tech ecosystems. There are a wide variety of federal grants available for research and development of tech, prototyping, and business formation. Government agencies, such as the National Institutes of Health (NIH), Department of Agriculture (USDA), the Department of Energy (DOE), and the Small Business Administration (SBA), award significant amounts of R+D grant funding that could be applied to tech each year.

Many of these grants, especially the SBIR and STTR Phase I + II grants, are specifically designed to help with business formation and product innovation. Detroit performs well in terms of attracting NIH funding, but lags Michigan and the rest of the country for many other sources.[16] On average, from 2021 to 2023, 78% of the federal grant funds deployed in Detroit were from the NIH, compared to 43% for Michigan and 42% for the United States.[xxviii] On the other hand, only 1% of grant funds awarded to Detroit institutions from 2021 to 2023 were from the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Phase I + II programs; they accounted for 6% of grant funds in Michigan and 11% in the U.S. during those years.[xxix] Balancing out this mix of funds by pursuing more dollars designed to help businesses could positively impact the startup community in Detroit.[17]

Detroit attracts significant federal R&D funding, but little SBIR and STTR awards

Federal R&D grant/funding source, dollars per job, 2021-23 average



Sources: NIH, NSF, DOE, USDA, SBIR/STTR, USA Spending; Mass Economics analysis

[16] Grant dollars-per-job is being used to normalize grant funding across different-sized economies. Calculated by taking the average grant dollars from each source to each geography and dividing by the average number of jobs in the economy using 2021-23 data.
[17] It is worth noting that federal funding can change due to a change in administration or an administration's shifting priorities.

Capital is one of the places where the impact of local, state, and federal policy can be keenly felt. Though there is positive momentum in Detroit's tech ecosystem, more capital will be needed to fuel the growth of tech in Detroit. In addition to the federal grants shown above—which are often awarded to individual institutions and/or businesses—increased local and state funding for innovation and entrepreneurship could help drive Detroit's tech ecosystem forward, as well. Though there have been some programs launched to help fund innovation in the state, such as the Detroit Startup Fund (launched in 2025) and the Michigan Innovation Fund (launched in 2025 and providing dollars to existing and emerging VC firms), sustained regional and state investment in tech will be critical moving forward.

Case study: JobsOhio and Ohio Department of Development's Third Frontier & Tech Initiative

Michigan's neighbor to the south has made great progress in terms of state policy and spending in the areas of innovation and entrepreneurship. Two key drivers of their success are JobsOhio and the Department of Development's Third Frontier & Tech Initiative.

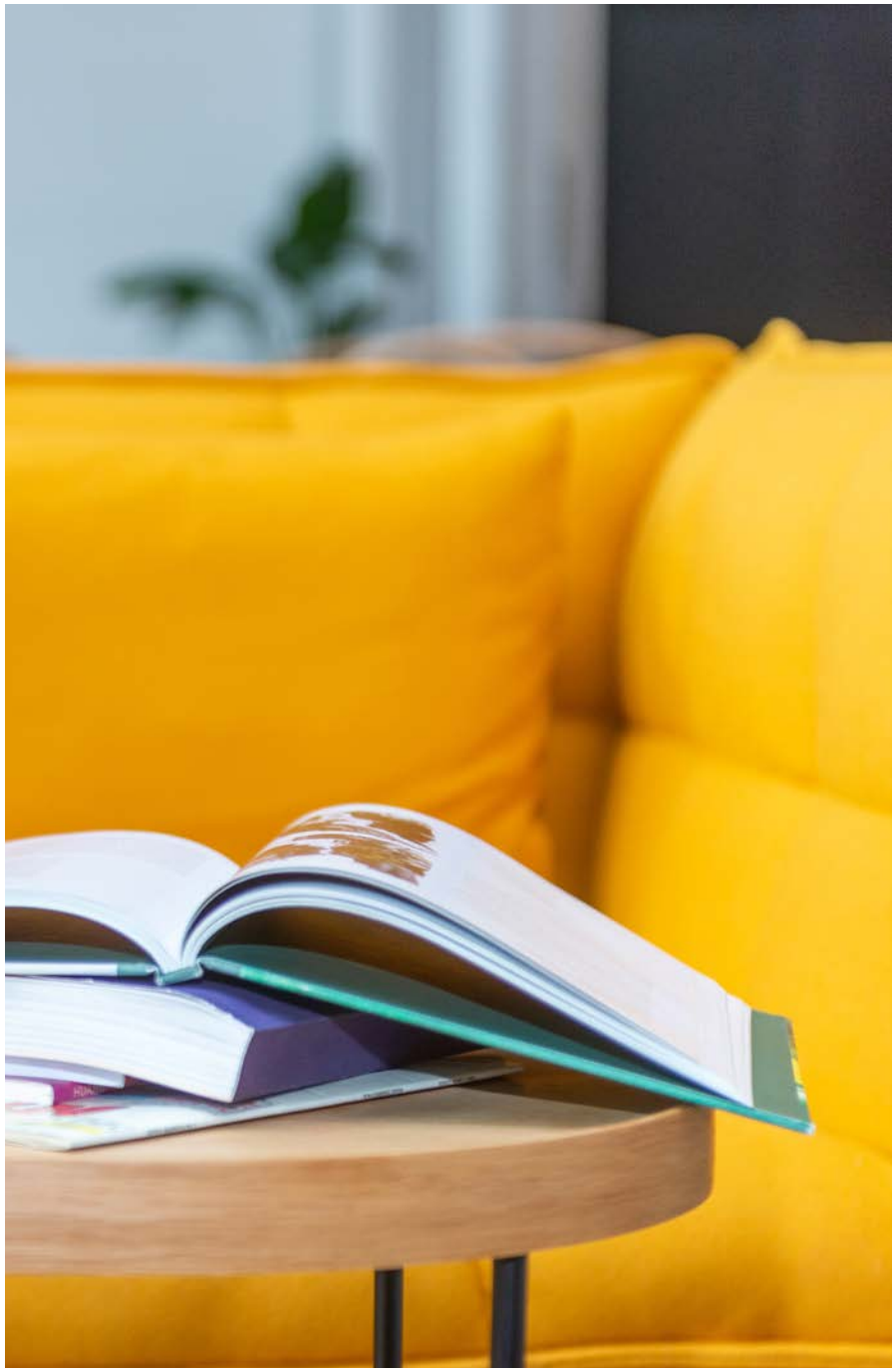
JobsOhio is the state's economic development corporation. Uniquely, it is a private nonprofit, with its own board of directors, and is funded by the state liquor enterprise, which it purchased in 2013. This setup allows JobsOhio to carry out its variety of economic-development activities like workforce development, site selection, and business attraction with a longer time horizon. JobsOhio has a number of impactful programs, such as the JobsOhio Growth Capital Fund, which provides funding to early-stage companies primarily in health care and enterprise tech. JobsOhio also makes larger investments in the state's innovation and tech economy, including a $100 million investment in Ohio State University's and Nationwide Children's Hospital's cancer research-focused innovation district in Columbus in 2021.

Ohio Third Frontier is an initiative of the state's Department of Development that provides a variety of supports to tech startups across the state. The Ohio Early Stage Focus Fund, plans to deploy approximately $36 million for funds that invest in early-stage tech companies that are women-owned, minority-owned, or located in an area underserved by venture capital (requires a 1-to-1 match from each recipient fund). The Ohio Venture Fund is capitalized with approximately $75 million, requires the same 1-to-1 match, and is for growing tech companies, with a program target of 40% of the funding going to woman- and/or minority-led venture capital funds. These investments by Ohio have driven innovation and encourage tech startups and founders to locate and thrive in the state.

Business support organizations (BSOs)

Detroit has hundreds of business-support organizations, but support specifically for tech startups often misses the mark

Business-support organizations and workforce development agencies are critical parts of Detroit's tech ecosystem. Alongside capital to start and scale a business, having the proper support, training, and mentorship, alongside a skilled workforce to hire from is crucial for tech founders. There are approximately 30 organizations that provide education, skills training, and workforce development organizations and 46 organizations that specifically support tech companies/ entrepreneurs based in Detroit.[xxx] Tech companies in the region are further supported by 15 Detroit-based venture capital firms, 17 others based in Michigan that have invested in at least one Detroit company, and philanthropic organizations that invest in the city's tech ecosystem.[xxxi] Major anchor employers like Ford Motor Company, General Motors, DTE Energy, Rocket, Google, Stock X, and nine hospitals are also critical parts of the wider tech ecosystem. In general, this is a deep bench of organizations designed or able to help tech companies.



Business-support organizations

Southeast Michigan has a wide range of organizations that provide support to startups and businesses. Business support organizations (BSOs) can be divided into two general categories: innovation support organizations (ISOs) and entrepreneurship support organizations (ESOs).[xxxii] ESOs tend to specialize in areas like legal services, economic development, and starting a business.[xxxiii] ISOs tend to specialize in areas like product development, technology commercialization, manufacturing, and high-tech development.[xxxiv]

A 2018 report produced for the New Economy Initiative found that Metro Detroit had 147 BSOs,112 of which were in the city of Detroit.[xxxv,18] This breaks down further into 56 (38%) Innovation Support Organizations (ISOs) and 91 (62%) Entrepreneurship Support Organizations (ESOs) located in the region.[xxxvi] In general, ISOs help entrepreneurs with generating the initial idea, creating prototypes, and bringing the first product or service to market, and ESOs providing more generalized support in growing a business and routinizing operations.[xxxvii]

Especially as it relates to supporting tech businesses, a key challenge in this area is that Detroit is overweight in ESOs and underweight in ISOs. Metro Detroit has become highly effective at delivering basic entrepreneurship support services, which often fit the needs of small, main-street-style businesses like retail and restaurants. However, these support organizations can struggle to provide the deep, niche innovation support that tech startups often need. This sentiment was heard during interviews for this report, where participants noted that finding tech-specific innovation support can be challenging.

The needs of tech startups align far more closely with the services of ISOs. These specific technology- and innovation-focused specialties are far more relevant to the needs of tech businesses. Take Ann Arbor, which pulls in a significant amount of venture capital dollars each year and has a robust tech and startup ecosystem supported by a major research university, for example. Ann Arbor had 34 ISOs compared to just six ESOs, demonstrating how a high saturation of ISOs can help boost a tech ecosystem.[xxxviii]

[18] Given that this report was done in 2018, it is likely that the exact number of BSOs in the region has changed.

Beyond the type of services offered, unequal access to business support is a key challenge in Detroit's tech ecosystem. Historical roadblocks for Black and Hispanic/Latino tech founders have resulted in fewer mentors of color to guide Detroit's diverse group of current founders and would-be founders, as well as open doors to them that may otherwise remain closed. This makes it more difficult for Black and Hispanic/Latino tech founders, who experience high barriers especially with accessing funding, to find their way within the regional tech ecosystem. Interview participants noted that there are few regional examples that can be held up, especially to Black and Hispanic/Latino entrepreneurs, that say, "This is how you grow and exit a tech startup in Detroit." The consensus seems to be that when founders in Detroit fail, it is often because they cannot find the right mentors, peers, and networks to help them move through the ecosystem.

As Metro Detroit thinks about the future of its tech industry, providing the right support services to entrepreneurs will be critical. Looking towards what other cities have done to support tech companies can show the kind of well-planned, tech-specific entrepreneurship-support systems will be needed for Detroit to grow into a major tech hub.

Case study: mHUB Chicago

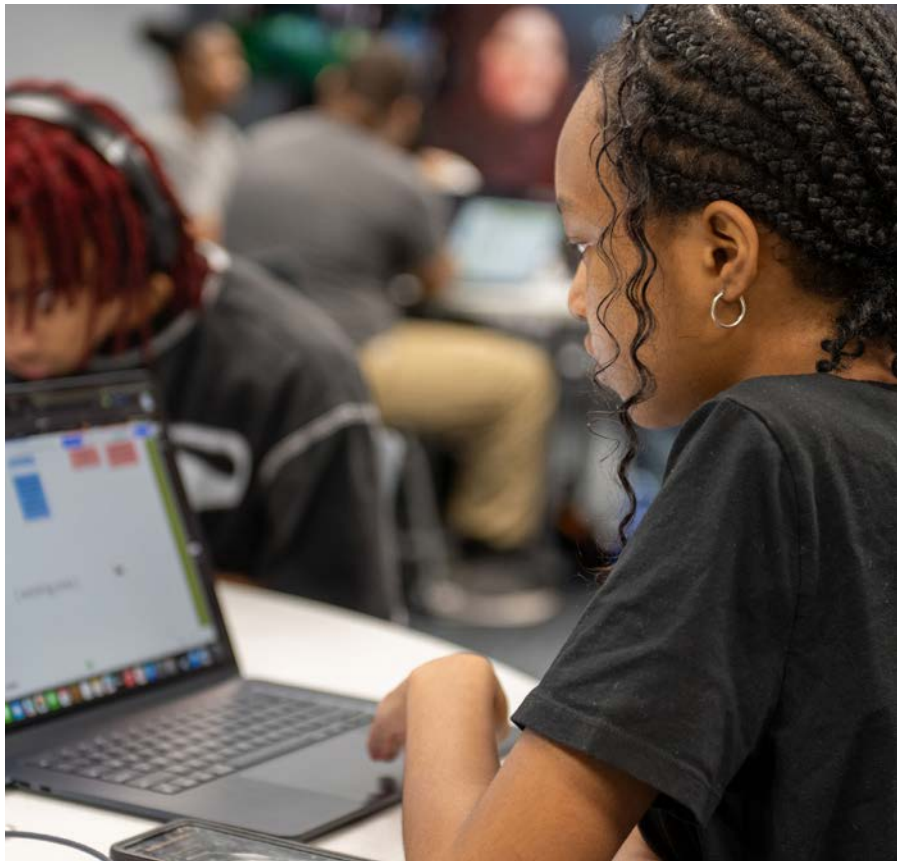
Like Detroit, Chicago has deep experience in the manufacturing field. mHUB is a manufacturing innovation center in Chicago focused on supporting Chicagoland's manufacturing and HardTech entrepreneurs, firms, their supply chains, and the ecosystem broadly. It is a membership-based organization and offers accelerator programs in three areas (energy tech, medtech startups, and sustainable manufacturing), a prototyping shop, technical assistance (e.g., market fit, product design, patenting, fundraising, and scaling), supply-chain network supports, partnerships with corporates (including research and development), a venture fund, mentorship programs, and a variety of events. In collaboration with the Illinois Manufacturing Excellence Center part of mHUB's strategy is to support existing, legacy manufacturers to expand (or pivot entirely) their product offerings to plug into and grow emerging and innovative supply chains and industry.

Workforce development and skills-training

Detroit has a strong network of workforce-development organizations, but navigating options and tailoring education programs for a rapidly changing tech industry is difficult

There is a wide variety of organizations in Detroit that support adults with tech-specific workforce development and training. These organizations, and others, offer learning opportunities ranging from tech fundamentals to full-stack development and are designed to give adults the skills they need to break into tech careers. Usually, the education component is accompanied by job-placement assistance. In addition to local programs, there are a wide range of online and AI-driven learning and certification programs, but many charge tuition or fees. These programs are designed to give individuals from any background the platform they need to move into tech.

Though these alternative learning programs and trainings are helpful, challenges exist. In 2025, the project team hosted a roundtable and series of interviews on tech-related workforce development services to better understand challenges regarding support services for tech workers. This roundtable included youth-serving nonprofits, school districts, workforce-development organizations, and higher-education institutions. One challenge that came up during this conversation, as well as in other interviews, was the connection between workforce development and employers. There is a sense that outside of a few major corporations, like Ford Motor Company and Rocket, established businesses are not deeply involved in the ecosystem. Workforce-development organizations also acknowledged that tech-training programs can miss the mark for employers, but getting feedback from employers (especially major corporates) is one of the key challenges. Overall, strengthening the connection between workforce organizations and industry is crucial for a functioning talent pipeline.



Some workforce organizations also face a separate set of challenges related to funding requirements and reporting policies. Workforce organizations associated with a larger government entity/agency are often allowed to count only full-time (W-2) employment as a success for their programs. This is a challenge because in the tech economy, consulting, contract work, and becoming a founder are all pathways to success. This means that programs and courses that are successfully funneling people into tech might not be able to get the funding that they need.

A lack of strong connectedness between employers and workforce training affects the ecosystem in other ways. There are ongoing concerns that entry-level roles are becoming less available in the tech industry, and employers today often want even early-career candidates to have some level of experience. Though some paid bootcamps and training courses include project-based or on-the-job experience, many do not. This has led to concerns over the effectiveness of many certification programs in terms of actual job placement. Perhaps of greater concern is that it can be challenging for students to know which courses deliver results.[xxxix] Additionally, despite the desire for candidates to have on-the-job experience, things like apprenticeship programs have not often found eager partners with local companies.

In addition to better connectedness between industry and workforce-development agencies, interview participants also talked about the need for better collaboration between tech-training providers. In the workforce-development ecosystem, data on participants and outcomes is sometimes tracked differently and not usually shared between ecosystem members. The reasons for this are understandable, as sharing information on individuals receiving different tech-training services would require complex data-sharing agreements and the infrastructure to safely manage that data. However, this lack of collaboration makes it difficult to really identify talent gaps in the tech economy, adjust programming to meet changing needs, and help different workforce organizations focus on the types of services they are best at.

Collaboration across sectors

Across business-support services, workforce development, and even capital, ecosystem wide collaboration is a key challenge. Interview participants regularly talked about the need for a singular vision for Detroit's tech ecosystem. In some cases, this discussion was about service delivery, where participants expressed a desire to see a "one-stop shop" or tech-hub led by people with tech-startup experience and diverse backgrounds that can completely support tech businesses through the startup and growth stages. As some founders and stakeholders put it during interviews, Black and Hispanic/Latino founders in the region tend to be overprescribed technical assistance but are underfunded. A unified voice, that sets a vision for tech in Detroit and helps coordinate resources, is needed to pull Detroit's tech ecosystem together. Pieces of this already exist in organizations like Black Tech Saturdays, which is helping founders of color build their networks to increase access to entrepreneurship resources. Additionally, ensuring access to tech opportunities in neighborhoods across the city, like the work of Life Remodeled with their Durfee Innovation Society and upcoming Anchor Detroit projects, will be crucial to Detroit having an equitable tech future. This need for a unifying vision for tech also goes beyond service delivery and networking. There is a desire for an organization or group of organizations that can set the direction for tech in Detroit, and get other key stakeholders on board with getting there. Throughout interviews, we consistently heard about the need for capital providers to strengthen their connections with support organizations and industry partners, and to work more closely with workforce development and education providers to ensure students gain exposure to real-world learning and work opportunities. All of these are examples of cross-sector collaboration, and require the region to be on the same page about where they want Detroit's tech economy to go.

Educational pathways to tech

Education institutions and nonprofits are working hard to prepare students for tech

The previous sections addressed immediate needs for Detroit's entrepreneurs, in the form of capital, business support, and workforce. These needs, especially for Black and Hispanic/Latino entrepreneurs and workforce, must be addressed for Detroit to have a chance to become a major hub that grows and attracts tech companies that can positively impact the city and region. If the needs aren't met, then much of the following section, which addresses building a pipeline of local tech talent, will result in training young people who may have to leave the region to find opportunities in tech and to businesses leaving in search of talent.

Detroit has talent primed for tech, including young students across the city taking advantage of in-class and out-of-class opportunities, as well as thousands of graduates from local universities each year, many who graduate with STEM degrees. Long term, the focus should be on the continued development of an equitable and effective pipeline that supports tech talent and provides a future workforce for Detroit-based tech companies. This section will focus on the current state of in-school and out-of-school education and tech exposure that is crucial to Detroiters' ability to thrive in the tech economy, whether that be in technical or non-technical roles.

Since 2018, Detroit schools have increased the number of computer science learning opportunities for students

Direct exposure to computer science is critical to help students learn about tech. Without exposure to new topics and ideas, students may never even consider whether a career in tech is right for them. Computer science has been a key focus area for the Detroit Public Schools Community District (DPSCD) since 2018, when it committed to expanding computer science opportunities to students throughout the district and hired an executive director of computer science. While the pandemic presented a period of transition in the district, by 2023, DPSCD was selected as a CSforALL Accelerator community, and CSforDetroit was launched. The program invests in all aspects of K-12 computer science education in Detroit, including teacher and administration staff training and the development of a culturally responsive computer science curriculum, with the goal of expanding access to computer science education and building future leaders in tech.[xl]

These efforts have yielded positive results; opportunities for computer science education are catching up with the region and state. Younger students are exposed to coding and computer science in a variety of ways, such as through Lego-based building, coding courses, and robotics teams.[19] Some high schools in the city also offer computer science courses. According to Code.org, 48% of Detroit's schools (public and charter) offer computer science courses, which is catching up with the rest of the region (61%) and Michigan (54%). Even

[19] To learn more about what computer science education for younger students looks like at DPSCD, read: https://michiganvirtual.org/blog/using-computer-science-and-computational-thinking-in-the-kindergarten-classroom/#:~:text=This%20transformation%20first%20began%20after,growth%20both%20academically%20and%20socially.

though the city still lags behind the rest of the state, there are still significant formal education opportunities for Detroit students to learn about computer science, and opportunities are expanding.

Across DPSCD, 35% of schools in the district (K-12) and 65% of high schools report offering at least one computer science-specific course, with a range of other courses that might help prepare students for computer science offered, as well.

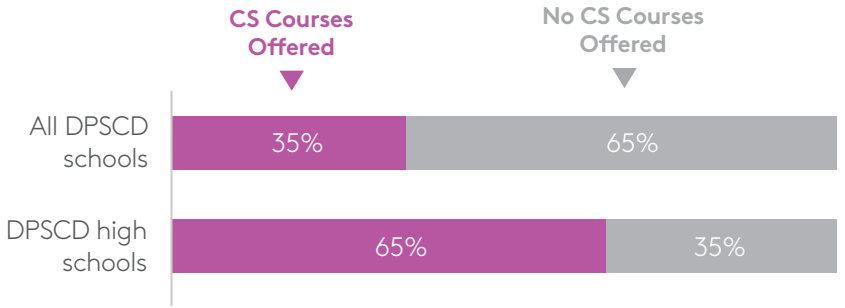
About half of Detroit schools offer computer science courses

Public and charter schools offering computer science courses, 2024.

Sources: Code.org. (2024). Computer science access report data.; Mass Economics analysis

35% of DPSCD schools (K-12) offer computer science courses

Percent of Detroit Public Schools Community District schools offering any computer science courses, 2025



Note: DPSCD data are as of summer 2025 and subject to change in the future as additional courses are offered at other DPSCD schools

Sources: Special request to DPSCD; Mass Economics analysis

Beyond basic computer science offerings, the presence of advanced computer science courses is important for the development of proficient tech students. Especially for students that know that they want a career in tech, having the chance to take an advanced course is crucial. In this regard, advanced opportunities in Detroit are still limited. The Advanced Placement (AP) program offers two AP computer science courses, computer science principles and computer science A. In 2024-25, only nine high schools in the city across public (7), charter (1), and private (1) offered at least one AP computer science courses. (There are 28 high schools just in DPSCD.)[20]

Number of schools offering AP computer science courses

AP Class	Year	Michigan	Detroit
Computer science A	2023-24	141	3
	2024-25	139	4
Computer science principles	2023-24	218	12
	2024-25	207	8

Sources: https://apcourseaudit.inflexion.org/ledger/; Mass Economics analysis

For high schools that receive public funding, state law will mandate at least one computer science class be offered in every Michigan public high school by the 2027-28 school year.[xli] The course is supposed to focus on the creation of tech, not just the use of it.[xlii] Though this is an important development and will boost the number of students exposed to computer science across the state, there are key challenges to expanding computer science learning opportunities in Detroit and across Michigan.

In Detroit, locating, hiring, and retaining qualified computer science teaching talent is the key issue. In 2017, the State of Michigan phased out the computer science teaching endorsement.[xliii] This made it possible for more people to teach computer science in schools, and interview participants noted some success recruiting teachers from industry, but some administrators believe it has shrunk the pipeline of educators available to teach these courses. To expand opportunities around computer science education of any level, finding, training, and retaining qualified teachers is key.

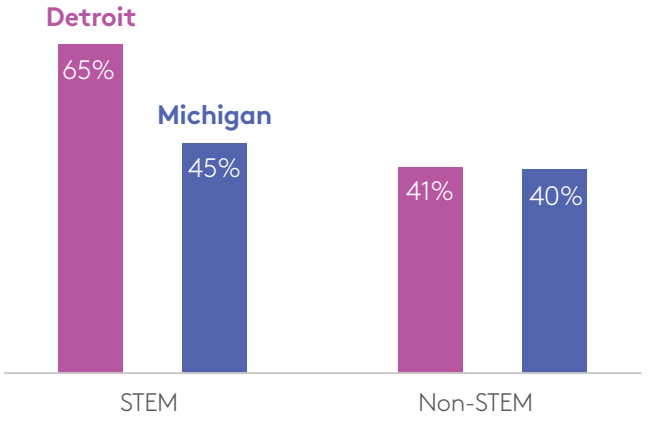
[20] See Appendix page 79 for list of high schools offering AP courses.

Detroit students take advantage of tech/STEM CTE programs when offered

In addition to formal classroom computer science education, career technical education (CTE) programs are available to provide students with experience in tech. These programs combine in-classroom learning with more hands-on experiences and are usually linked to a specific job or pathway. Getting students hands-on experience with tech is crucial to helping students explore career pathways and build competency. As of the 2023-24 school year, 10% of all Detroit high school students (grades 9 to 12) took part in a CTE program (enrolled, participated, concentrated or completed) versus 25% statewide.[xliv] However, when STEM-specific CTE courses are offered, the Detroit students who take them capitalize on the opportunity by completing the program.

Detroit students capitalize on STEM CTE programs when available

CTE completion rates, 2024



Note: For STEM crosstabulations, enrollments are duplicated across CIPs (i.e., if someone is enrolled in multiple programs, they are counted in each program)

Sources: Michigan Department of Education, CTE Reports; STEM Classification of Instructional Programs (CIP) definition from U.S. DHS STEM Designated Degree Program List, 2023; Mass Economics analysis

The 65% completion rate for the four[21] STEM courses offered to Detroit students was significantly better than the 45% completion rate for all STEM CTE courses offered across Michigan in the same year, as well as the rates for non-STEM courses.[xlv] Finding ways to both boost CTE enrollment and increase the number of STEM- and tech-related opportunities available to Detroit students is critical, especially with students completing at such a high rate. However, like formal, in-class education, locating qualified teaching talent is a key challenge to providing more CTE opportunities in Detroit.

[21] As of 2025, DPSCD is offering a computer programming CTE course, which does not appear in the 2023-24 state reporting data. It is possible that there are now more than four tech/STEM related CTE programs offering in Detroit.

Out-of-school learning opportunities are a critical part of Detroit's tech education landscape

Along with formal in-classroom computer science opportunities and CTE, Detroit has a robust system of nonprofits that expose students to tech. While ensuring computer science education happens in classrooms is critical to all students having a baseline level of access, these nonprofits help students go deeper into computer science than they might be able to during school hours.

CSforDetroit's Out of School Time Collective is a community of practice that supports established nonprofits providing tech training and education to Detroit's students.[xlvi] The 15 current partner organizations are focused on providing tech education opportunities to students from communities historically underrepresented in tech. The collective provides a place for leaders of these nonprofits to connect as well as funding for initiatives. Grant partners include Code313, Accelerate4Kids, Detroit Area Pre-College Engineering Program (DAPCEP), and Detroit Hispanic Development Corporation and cover a range of tech topics from robotics, to web development, to artificial intelligence.[xlvii] In these programs, students receive a combination of theory and hands-on practice, while often interacting with instructors who come from similar backgrounds. In addition to the participating member organizations of the Out of School Time Collective, a variety of other youth-facing organizations, such as YouthTank Detroit, provide similar out-of-school opportunities to students.

These opportunities are an important part of the tech-training ecosystem but come with challenges themselves. Access is the main issue. When programs take place out of school and/or after school, some families and students may find it challenging to attend. During interviews for these projects, practitioners spoke about not only having to consider the needs of students, but of under-resourced families where there may not be adequate transportation or parents can't miss work to bring students to programs. Multiple nonprofits spoke about having to find solutions to these access issues, including providing transportation and/or stipends to attendees and their families, as well as partnering with schools to provide programming during school hours or at least on school grounds. Expanding these opportunities, and making sure students can attend, is key for growing Detroit's tech-training pipeline moving forward.

Anchor college institutions

Some tech jobs do not require a college degree, but many do. Once a prospective tech employee/founder graduates from high school, a key potential pathway for them is pursuing a two- or four-year college degree.

Detroit is home to a strong collection of higher-education institutions that could produce tech-proficient graduates. Wayne State University is the city's major research institution and shares the ecosystem with other strong colleges, such as the University of Detroit Mercy and College for Creative Studies. Overall, Detroit has five colleges or universities (main campuses) with some type of tech/STEM program; these schools graduated about 11,000 students in 2023, of which about 2,300 received STEM-related degrees.

Number of graduates from Detroit universities, 2023

Institution	Total graduates	STEM-related	% STEM-related
Wayne State University	6,533	1,285	20%
Wayne County Community College District	2,248	93	4%
University of Detroit Mercy	1,502	417	28%
Detroit School for Digital Technology (DSDT)	377	329	87%
College for Creative Studies	284	159	56%
Total	**10,944**	**2,283**	**21%**

Sources: NCES-IPEDS, 2023; Mass Economics analysis

These nearly 2,300 STEM graduates represent a significant potential workforce for the tech ecosystem in the city of Detroit. This is about 21% of all graduates in the city and is just below the rate for Michigan (26% of graduates with STEM-related degrees) and is identical to the national rate (21%).[xlviii]

An additional component that links local colleges and universities to the local tech economy is graduate retention. Generally, it is positive for communities to retain a large share of their graduates, rather than exporting talent that has spent (usually) four years learning in the area. A 2021 study that looked at four-year college graduates (who graduated between 2010 and 2015) found that Michigan is a net exporter of college graduates.[xlix] For Detroit, however, that same study found that 81% of graduates from Wayne State were in the state of Michigan (either they stayed or left and returned).[l] This means that graduates from Detroit's largest university are often opting to remain in the state. There is a real opportunity to connect tech startups and companies with local higher-education institutions to more intentionally recruit graduates to jobs in the regional tech economy.

Pathways into tech careers

This discussion of K-16 tech education leads to an important point around pathways. Throughout interviews and focus groups for this report, stakeholders noted that understanding how to get into a tech career can be difficult for both students and parents; there is a lack of knowledge of what tech careers exist, and the steps it takes to get there. Awareness, exposure, navigation, and readiness are all critical components of career connected learning. Students must be exposed to new ideas at early ages, find careers that interest them, be able to identify the pathways to get there, and gather the skills they need along the way to be successful. Put another way, what are the core competencies of a full stack developer, or a systems administrator, and what needs to happen in K-12, college, and certification programs to help students progress toward careers that interest them? The example of doctors comes to mind. Most young people who decide they want to become a doctor have a clear understanding of the major milestones they need to hit in high school, college, and medical school. Better describing pathways into tech is a key area to focus on for the education ecosystem.

The role of policy

Beyond capital and entrepreneurship support, the policy environment at the local, state, and federal levels, has a big impact on tech companies. Whether it is local policy that makes it easier/harder to start a business, federal trade policy, or attraction efforts to bring tech businesses to certain areas, government agencies hold a significant amount of power in sparking and supporting tech and entrepreneurship. Though federal policy, especially tariffs, will have a significant impact on Detroit's tech industry, the City of Detroit and State of Michigan have a critical role to play in Detroit's tech future.

Both Detroit and Michigan governments have several programs and policies that impact tech. For example, the previously mentioned Michigan Innovation Fund included dollars to help provide business-support services. Along with the Michigan Innovation Fund, a research-and-development tax credit program was passed in 2025, which provides incentives to businesses that collaborate with research universities. These incentives help businesses afford partnerships with universities.

Local and state governments are also major players in workforce-development programming. Detroit at Work (part of Michigan Works), is a key organization in Detroit that provides a variety of training programs to the city's residents, including some related to tech occupations. The State of Michigan has also worked to offer services, trainings, and programs in partnership with community colleges designed to help people move into tech roles. These include Michigan Reconnect, which helps adults 25 years and older attend their local community college for free or at low cost, and the Battery Jobs Training Program at Henry Ford Community College, which was supported by the Electric Vehicle (EV) Jobs Academy, and provides a battery-technician certification to students.

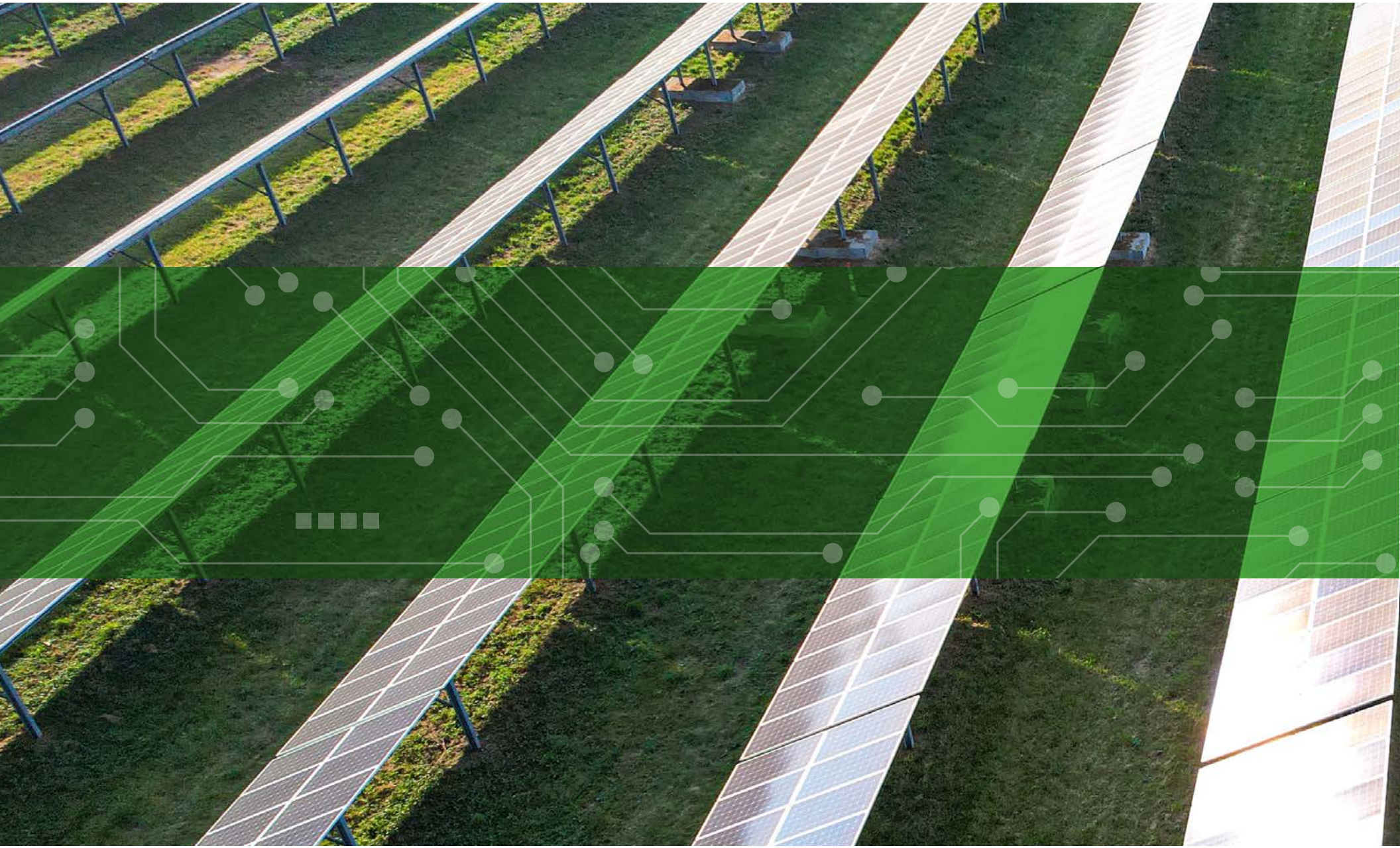
Though Michigan has demonstrated a willingness to spend on entrepreneurship and innovation, interviews and recent analysis point to the state falling behind its neighbors in this category over recent years.[22, li] Interview participants also suggested that Michigan tends to change policies in this area relatively frequently. For Detroit to become a city with a thriving tech industry, continued investment from the state to support entrepreneurship and innovation is a key part of the mix.

[22] Referenced Citizens Research Council report was published in 2024, while many of Michigan's recent investments in entrepreneurship and innovation were deployed in 2025.

Case study: City of Atlanta/Invest Atlanta

Atlanta has the goal of becoming a major American tech hub. The city government as well as Invest Atlanta, the city's official economic development agency, invest heavily in initiatives related to tech and entrepreneurship. In a unique example of a startup accelerator being funded by a municipality, Invest Atlanta supports the Women's Entrepreneurship Initiative, a 9-month business accelerator that supports Atlanta-based women entrepreneurs with early-stage companies. Invest Atlanta also partnered with dealroom.co to publish and maintain the Invest Atlanta Dealroom Platform. The Dealroom platform provides data on the local tech ecosystem, including detailed information on companies and investors. Additionally, the City of Atlanta, with Invest Atlanta as a sponsor, hosts events that showcase the city's progress as a tech hub and center for innovation—such as Avant South in partnership with Georgia Tech, as part of Atlanta Tech Week.

Invest Atlanta also has advocated for unique financial incentives to support technology startups in the city. One example is the New and Emerging Technology Business Tax Waiver was added to city books in 2015, which waives occupation taxes for three years for new businesses that fall within certain tech industries identified by the city. The waiver was added in an effort to encourage and retain more technology startups. Invest Atlanta also administers a number of loan programs designed to support the city's small businesses including targeting businesses looking to add quality jobs to the city and businesses located in local accelerators and incubators.



DETROIT TECH TOMORROW

DETROIT TECH TOMORROW

Scenarios for the future

For tech to be a driver of economic prosperity and economic equity in Detroit, there must be a vision for how the tech economy grows. Currently, Detroiters hold 34,300 of the region's tech jobs. Economic projections for the future of specific industries can be difficult to do accurately. It is even more difficult for an industry like tech, which is constantly changing. However, recent trends can be used to create a range of growth scenarios for the tech economy and its potential impact on Detroiters over the next five years. Below are four scenarios for tech growth that rely on two key factors:

1. **Job growth:** Total regional job growth in tech
2. **Job capture:** Share of tech jobs in the region that are held by Detroiters

Best case: High-growth and high capture[23]

In the best-case scenario, where there is a focus on growing the region's tech industry and increasing the number of Detroiters in tech roles over the next five years, Detroiters could hold approximately 20,300 more tech jobs in the region, increasing the total number of tech jobs held by Detroiters to 54,600. Assuming Detroiters earn the regional average wage in tech of $111,000 a year, a steady increase in the number of Detroiters holding tech jobs in the region year-over-year could generate up to $6.8 billion in new wages over five years.[24,25]

Low-capture and low-growth

If tech job capture remains at the 2023 value (8%) and tech job growth aligns with low national projections, about 400 tech jobs held by Detroiters will be added to the economy.

High-capture and low-growth

Even if there was low tech job growth in the region over the next five years, an absolute increase of 3% in job capture for Detroiters (from 8% to the capture rate of the rest of the economy, 11%) would lead to 13,500 more Detroiters in tech jobs in five years.

Low-capture and high-growth

If growth is high and job capture is low, Detroiters will add 5,350 tech jobs in five years.

The scenarios demonstrate that the ability of Detroiters to enter into tech jobs is essential for an equitable future in tech. This makes the recommendations in this report, especially around equity and inclusion throughout the education pipeline and capital system, imperative.

[23] In 2023, Detroiters held 8% of the tech jobs in the region. Detroiters captured 11% of jobs in the rest of the region's economy in 2023. The high job-capture growth scenario assumes Detroit's tech job-capture rate increases from 8% to 11%.

[24] See Appendix for more detailed explanation of scenarios.

[25] These wage predictions assume the shift in job capture and job growth happens evenly across 5 years, and, once employed, Detroiters remain employed for all five years. They also assume an average wage for tech jobs of $111,141, consistent with the average wage of tech jobs in the region in 2023.

Five-year growth scenarios

Five-year scenario	Jobs	Increase from baseline	New wage creation	No. of startups needed*
High capture/**high** growth	54,600	+20,300	+$6.768 billion	750
High capture/**low** growth	47,800	+13,500	+$4.501 billion	500
Low capture/**high** growth	39,600	+5,300	+$1.784 billion	195
Low capture/**low** growth	34,700	+400	+$140 million	15

Note: Baseline is 34,300 jobs. The scenarios focus specifically on tech jobs and do not include indirect job creation in related services that is spurred by an increased tech economy. See appendix for specific assumptions.

*This modeling approach is informed by venture ecosystem and portfolio dynamics illustrated in prior work by Asher Siddiqui (Asilica/500 Startups) and Dave McClure (Practical VC/500 Startups).

Funding startups to create job growth

While the scenarios presented above are primarily driven by Detroiters being hired into more tech roles in the region, some of this growth, and especially the high job growth scenarios, will require more startups launching and scaling to become sustainable companies.

Estimating how many startups are needed involves several considerations. Job creation from startups is rarely immediate; it unfolds over multiple years as companies mature and expand, well beyond the five-year time period estimated here. Also, not every startup will succeed, and ultimately, most new job creation will come from a relatively small share of startups that manage to successfully grow. This reality underscores the importance of cultivating a big enough pool of startups over multiple years to increase the likelihood that some will become larger employers. The startups that don't make it to this stage still contribute value—with every attempted startup there is knowledge gained, networks built, and talent created that can flow into supporting other companies or new startups.

Given this, the estimated number of startups needed in each job-growth scenario assumes that some startups will create few or no jobs, while others will generate a substantial number (see Appendix for more on the methodology). Based on this, the model estimates that Detroit would need between 15 successful startups (to create roughly 400 new jobs in the lowest-growth scenario) to 750 successful startups (to create more than 20,000 jobs in the highest-growth scenario).

To get there, significant and sustained investment is required across all stages of the startup lifecycle—not just one-off injections of capital. If Metro Detroit wants to become a true tech hub, rivaling other Midwest tech hubs like Chicago, the region will need to commit to deploying consistent and substantial capital over many years.

Assuming an average cost of $10,000 of venture capital investment per job, it would take $200 million in investment in startups to add 20,000 tech jobs in Detroit. The overall impact of these investments on Detroiters would be shaped by the proportion of these new jobs that were filled by city residents. Factors such as the location of jobs, the availability of robust education and training opportunities, access to networks, and firm hiring practices can be shaped in ways that promote access to these jobs for Detroiters.

Recommendations for tech tomorrow

If done equitably, tech growth could create new jobs and wages that would impact thousands of residents and boost neighborhoods across the city. The question looking forward is two-fold: How can we grow Detroit's tech economy, and how can we ensure that Detroiters, especially Black and Hispanic/Latino residents, can compete for tech jobs?

The following are recommendations for improving Detroit's tech economy to help get to the high growth, high capture scenario where approximately 20,000 jobs and $6.8 billion in wages are added to the city of Detroit's economy. Because Detroit's tech economy has both short-term and long-term needs, there is a sequence to the recommendations to build for the future.

In the short term, existing entrepreneurs need to be supported with better access to capital and networks and more options to grow and exit their companies. These will push Detroit's tech economy towards equitable growth in the near term. Short-term interventions need to be supplemented by longer-term programs that prepare the local workforce for jobs and entrepreneurs, such as continuing to grow computer science programming in K-12 and making job pathways clearer and more accessible. Without the short-term strategies to grow the tech economy in Detroit, the education system may be training talent that eventually leaves for stronger, more equitable ecosystems in other parts of the country. Without the long-term strategies to grow the pipeline, companies may not have the local labor force needed to support growth, and residents won't benefit from the tech economy.

Case study: Baltimore Tech Hub

Recently, Baltimore has shown how a cohesive vision for tech and strong public/private cooperation can lead to strong investment in a regional tech ecosystem. Led by the Greater Baltimore Committee, a group of 48 businesses, tech leaders, universities, and government agencies came together to apply to and be designated as a Regional Technology and Innovation Hub by the U.S. Economic Development Agency. The region received a planning grant in support of their proposal to position Baltimore as a center for the development of predictive health care technology, leaning on the region's background and expertise in healthcare.

The Baltimore Tech Hub plans to connect entrepreneurs with resources that will help the start and grow companies, provide funding for infrastructure projects to support companies looking to commercialize their products, and open up career pathways in biotech and health-tech fields that do not require four-year degrees. The next step will be for the region to secure an implementation grant or additional resources to advance this work.

Recommendations

System-wide

1. **Identify one anchor organization that can lead the alignment and strategy for a regional tech ecosystem:** Founders, business support providers, workforce development, and policy leaders consistently emphasized the need for a unified vision that can help guide Detroit's tech ecosystem. A cohesive strategy that would align stakeholders and move the ecosystem in one direction could have the single largest impact on Detroit's tech ecosystem. Currently, there is a level of communication across organizations working on different aspects of tech in Detroit, but there was a sentiment that organizations are still siloed and working in different directions. There is a deep need for these organizations to work collaboratively towards the same vision, plan together, fundraise together, identify best fits for different roles across the ecosystem, and compile resources and knowledge in one place. Some stakeholders felt that rather than focusing on creating a new organization and additional tech hubs, there is an opportunity to increase collaboration among what already exists.

Opportunity for action

By the end of 2026, tech stakeholders—including entrepreneurs, business-support providers, workforce-development organizations, youth education leaders, capital providers, and policymakers—should try to convene twice with the goal of exploring what identifying a tech anchor organization or collaboration could look like. The group could also consider what it looks like to have smaller tables exploring key topics such as capital, tech-business support, and the talent pipeline.

2. **Expand into tech industries where Detroit already has expertise:** A significant amount of Detroit's current tech activity is based off its strong foundation in automotive and manufacturing. However, diversification of the tech industry will be important for Detroit to become a true tech hub and harness the wealth generation and economic development powers of tech. Building off this, Detroit has deep institutional knowledge in a variety of fields beyond manufacturing, including health care, design, and beauty. Stakeholders in Detroit's tech scene should consider ways to encourage the ecosystem to focus on other emerging tech industries where Detroit has existing expertise.

3. **Ensure equitable access to support resources and capital:** Beyond the resources provided by business-support organizations and bringing more capital to the ecosystem, work must be done to ensure that Black and Hispanic/Latino founders have access to business-support resources, networks, and capital available in the region, now and in the future. Organizations like Black Tech Saturdays have already driven change in this regard, especially by creating a new space for tech entrepreneurs to come together. This momentum must be continued, and efforts need to be infused across the entire ecosystem to ensure that Black and Hispanic/Latino entrepreneurs are heard in program design, provided mentorship, introduced to key investors, and don't face barriers in access to resources across the region.

Capital for startups

4. **Pursue strategies to increase the amount and access to capital, especially for Black and Hispanic/Latino founders, in the region:** Overall, Detroit needs to attract more investment in order for it to truly become a tech hub. This is especially true for Black and Hispanic/Latino entrepreneurs who are underfunded both nationally and locally. In 2024, Detroit ranked 26th among the 50 largest metro regions in terms of all venture capital investment (tech and non-tech).[lii]

Opportunity for action

Set a stretch goal for Detroit to move into the top 15 of this list by 2030.

a. Work locally to train, hire, and organize Black and Hispanic/Latino individuals to become venture capital firms and angel investors: *Increasing representation in venture capital and angel groups will go a long way towards improving funding for Black and Hispanic/Latino entrepreneurs.*

b. Work nationally to develop and attract funds and angel groups that will invest in Detroit-based founders: *Nationally, there are a number of venture capital firms that specialize and/or have a track record in investing in Black and Hispanic/Latino founders and hard-tech/manufacturing companies. Attracting some of those venture capital firms, and learning from their practices, would be beneficial to the local ecosystem.*

5. **Increase the amount of government funds in the regional tech ecosystem:** Government funds are a strong tool for developing regional tech ecosystems. Grants, especially, are non-dilutive, patient forms of capital that can support tech startups and may be excellent fits for manufacturing heavy startups, which require significant and patient capital to effectively grow.

Opportunity for action

a. Provide technical assistance for complex government grants: *One area of improvement is with the Small Business Innovation Research (SBIR) and Small Business Tech Transfer (STTR) Phase I+II programs. SBIR and STTR operate at the intersection of research, development, and commercialization of tech and can be helpful sources of funding for business formation and new product/tech creation. These are often referred to as America's Seed Fund, and Detroit can improve at attracting this funding. Providing technical assistance to founders on successfully applying for these grants, especially Black and Hispanic/Latino founders, could help open doors to capital for underserved entrepreneurs and the city as a whole.*

b. Increase local/regional funding for startups: *Though state and federal investment in tech can be transformative, those types of investments can often be difficult to obtain and maintain and subject to politics. However, local and regional governments should consider ways to expand their funding for programs that invest in tech companies, such as the recently launched Detroit Startup Fund.*

6. **Build alternative paths to exits:** Capitalize on the presence of large corporates in Detroit by building relationships between e arly-stage startups (pre-seed) with products/ideas relevant to these companies. This may help some companies reach an exit via merger or acquisition before they need to search for venture capital or other funding that may or may not be accessible to them.

Business support

7. **Develop a business-support ecosystem specifically tailored to the unique needs of tech businesses:** Business supports are not one-size-fits all, and tech companies require services that differ significantly from those designed for main street or retail businesses. Rather than fitting tech companies into existing supports, the ecosystem should prioritize creating supports specifically targeted to the needs of tech businesses—such as innovation and design—designed and led by people with direct tech entrepreneurship experience. These specialized resources will be crucial for the long-term success of the ecosystem.

Workforce development and skills-training

8. **Strengthen partnerships between workforce development and industry:** Stakeholders need to find avenues to increase tech talent in the region, both now and in the future. Critical to this will be programming that brings three key parties to the table: workforce development organizations, industry/tech businesses, and prospective employees/clients. Without all three of these parties at the table, the workforce development system will continue to face barriers when trying to help Detroiters transition into tech careers.

9. **Pursue apprenticeship models for tech:** Apprenticeships, while recently seeing increased use, are underutilized in tech fields.[liv] There are some programs operating in the region that address tech-adjacent fields. The MI Apprenticeship program, run by the Workforce Intelligence Network, is a regional model focused on advanced manufacturing. Previously, the Detroit New Apprentice (DNA) Network did work in this area. However, paid apprenticeships in tech are not nearly as prominent as shorter-term training tools, such as certificate programs and boot camps. Two of the key reasons for this are the upfront cost to employers, both in terms of wages and time spent training the apprentice, and the complexity of setting up registered apprenticeship programs.[lv] Regional stakeholders interested in increasing the number of tech apprenticeship programs in Detroit must consider the needs of employers in program design. Providing direct incentives for employers who follow through on participating in apprenticeship programs and making the process as easy as possible for businesses are two key aspects that must be considered, especially for time-strapped tech startups.[lvi]

Education

10. Integrate tech career exposure and high-quality, tech-connected learning opportunities into K–12 education across Detroit: Exposing young Detroiters to tech careers and providing them with quality learning opportunities is essential for building Detroit's future workforce. These experiences and curriculum should be embedded as a core component of the educational journey—from computing, to computational science, to emerging technologies. Achieving this vision requires coordinated work across a range of actors to set priorities, strengthen partnerships between schools and industry, and identify dedicated and sustained funding streams.

Opportunity for action

a. Increase computer science teachers: *Increasing the number of qualified computer science teachers in the region will be key to providing tech learning opportunities to all students. Consider strategies that increase teaching talent in computer science fields. One potential model is Innovating Detroit's Robotics Agile Workforce (iDRAW) program, which supports high school STEM teachers by allowing them to co-teach with a University of Detroit Mercy professor for one year, and then receive ongoing resources for a second year. Other models have examined ways to help industry professionals transition over to teaching full time through a similar co-teaching model. In either case, pairing local educators who bring teaching experience with industry professionals into Detroit classrooms could help scale computer science education opportunities for students.*

11. Strengthen nonprofit-school partnerships and remove barriers to accessing programming: Though in-class computer science instruction is important, certain considerations, such as federal education policy, make Detroit's robust ecosystem of out-of-school tech education nonprofits (such as the CSforDetroit Out of School Time Collective) crucial to Detroit's tech talent pipeline. Schools and nonprofits should work in partnership to make it easier for nonprofits to act as vendors on school grounds to help build computer science teaching capacity. When programming happens off-campus and/or after school, providing transportation and stipends can alleviate barriers for students who may otherwise not be able to participate.

12. Clearly describe and coordinate pathways into tech Detroit's public and charter schools, universities, tech-training programs, and employers should collaborate on ways to clearly describe and market potential careers within the region's tech ecosystem and skills that are required to compete for those jobs. Making this information available to students and families early on is critical for building the pipeline of local tech talent. Beyond this, there must be planned, intentional coordination of the tech-training pipeline with the primary goal of helping students progress toward the skills and careers they wish to achieve. This means that beyond clearly describing the pathways, major actors must develop systems that have clearly designated roles for different service providers and facilitate handoffs to next steps when it is necessary for students to progress.

CONCLUSION

Across the country and in Detroit, tech is a force of change for economies.

Tech, and the high incomes and wealth generation capacity that come with it, can reshape economies overnight. Many cities held up as beacons of economic growth in the United States, such as San Francisco, Seattle, and New York, are bolstered by thriving tech and startup ecosystems. The flip side of tech, however, is that for all its ability to generate wealth, it also has the tendency to leave already marginalized communities behind, such as people who cannot access college degrees or Black and Hispanic/Latino employees and entrepreneurs often being shut out from opportunities in tech, employment, and funding. Though not explored in this report, it is also important to consider the potential negative effects of a growing tech economy, especially on vulnerable communities. Among some of these potential negative effects are environmental degradation, increased surveillance of communities of color, and the public health impact of people spending more time interacting with technology and screens. The ethical development and use of tech tools will need to be an important part of any future conversations.

Detroit has many of the necessary components for a thriving tech economy. Tech is already here, and it is getting bigger. As the city looks towards the future, a future that could see tens of thousands more tech jobs and billions of new wages generated for Detroiters, it must decide how to grow its tech industry. Business as usual in tech will leave many Detroiters behind. However, growing tech, including strengthening the education pipeline and support available to residents and entrepreneurs, with equity and access as the focus, could impact the lives of every Detroiter. Additionally, Detroit has the opportunity, with proper community engagement, to grow tech in a way that can mitigate some of the potential negative effects discussed above. Tech growth in Detroit over the next five years should mean that everybody who desires to attain the skills needed to thrive in tech can get those skills, and that there are opportunities for employment and entrepreneurship available for all. The impact of an equitable and strong tech economy can see thriving, middle-class neighborhoods grow and strengthen throughout Detroit.


EXIT

APPENDIX

Appendix 1: Computer science at Detroit high schools

High schools offering at least one Advanced Placement computer science course in the 2023-24 or 2024-25 school years

		Year 2023-24	Year 2023-24	Year 2024-25	Year 2024-25
Detroit high school	**Type**	**Computer Science A**	**Computer Science Principles**	**Computer Science A**	**Computer Science Principles**
Northwestern High School	DPSCD	1	1	1	1
Western International High School	DPSCD	1	1	1	1
Cass Technical High School	DPSCD	1	1	0	0
Martin Luther King High School	DPSCD	0	1	1	1
University Detroit Jesuit High School and Academy	Private, Religious	0	1	1	0
Cesar Chavez Academy High School	Public Charter	0	1	0	1
East English Village Preparatory Academy	DPSCD	0	1	0	1
Mumford High School	DPSCD	0	1	0	1
Osborn High School	DPSCD	0	1	0	1
Renaissance High School	DPSCD	0	1	0	1
Cody High School	DPSCD	0	1	0	0
Detroit Cristo Rey High School	Private, Religious	0	1	0	0
Total		**3**	**12**	**4**	**8**

Appendix 2: Tech/STEM CTE program completion information

2023-24 Tech/STEM CTE Programs, enrollees and percentage who completed the course

Detroit CTE Programs in STEM, 2023-24			
Course	**Total Enrollments***	**# of participants that completed at end of year**	**% of participants that completed at end of year**
Web page, digital/multimedia and information resources design	141	130	92%
Computer systems networking and telecommunications	124	48	39%
Aeronautics/aviation/aerospace science and technology, general	19	17	89%
Mechatronics, robotics, and automation engineering	18	0	0%

*Note: Enrollments are duplicated across the Classification of Instructional Programs (CIP) (i.e., if someone is enrolled in multiple programs, they are counted in each program.)

Appendix 3: Detailed five-year scenario information

	Low job capture	High job capture	
Low growth	400 (15 startups needed)	13,500 (500 startups needed)	**13,080 more jobs if high job capture**
High growth	5,300 (195 startups needed)	20,300 (750 startups needed)	**14,950 more jobs if high job capture**
	4,900 more jobs if high growth	**6,800 more jobs if high growth**	

Note: The low growth scenario is based on BLS national projections 2023 - 2023 (0.24% CAGR). The high growth scenario is based on the MSA growth rate 2010-2023 (2.9% CAGR). The low job capture scenario is if 8% of tech jobs in the region are held by Detroiters. The high capture scenario is if 11% of tech jobs in the region are held by Detroiters. The job modeling approach is informed by venture ecosystem and portfolio dynamics illustrated in prior work by Asher Siddiqui (Asilica/500 Startups) and Dave McClure (Practical VC/500 Startups).

These scenarios look at two key factors for predicting the future of tech in Detroit, job capture, and tech job growth. In this case, job capture is looking at the percentage of tech jobs and the rest of jobs in the metropolitan statistical area (MSA) that are held by Detroiters. According to ACS-IPUMS data, in 2023, Detroiters held 8% of tech jobs and 11% of the rest of jobs in the MSA. The job capture scenario asks, "What would be the impact of Detroiters capturing 11% of all tech jobs in the MSA, rather than the current 8%." The other factor here is job growth. National projections from the Bureau of Labor Statistics (BLS) for job growth in tech are fairly low, predicting about a 0.24% compound annual growth rate. The higher growth alternative is utilizing the MSA tech jobs growth from 2010-23 to settle on a 2.9% compound annual growth rate.

These "new wage creation over five years" predictions assume the shift in job capture and job gains happens evenly across five years, and once employed, Detroiters remain employed for all five years. They also assume an average wage for tech jobs of $111,141, consistent with the average wage of tech jobs in the region in 2023. As an example, in order to arrive at the $6.8 billion number, we take one-fifth of the 20,300 jobs (4,000) and multiply those year-one jobs by the average wage ($111,141); then we add two-fifths of the 20,300 jobs (8,100) and multiple those year-two jobs by the same average wage, and so on, over the five years. The number of startups needed is based on the assumption that 90% of tech start-ups support little or no job creation (average = 5 jobs); 9% become mid-sized companies (average job creation = 100) and 1% become large companies (average job creation = 1,500).

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