MICHIGAN ECONOMIC CONDITION ASSESSMENT

VERSION 2.0

LANSING AND ANN ARBOR

The Great Recession's toll on metropolitan America has motivated a growing chorus of business leaders and economists to call for a rebalancing of the American economy, towards one driven by exports, powered by low carbon, fueled by innovation, and rich with opportunity. An economy with these characteristics will largely be metropolitan, in form and function.

Michigan has assets that make it well-positioned for the next economy. The state's metropolitan areas are among the nation's leaders in export intensity; in important but often overlooked aspects of the clean economy; and in the universities, research institutions, and advanced manufacturing plants that drive innovation. This economic condition assessment, created as part of the Michigan Urban and Metropolitan Strategies Project, highlights the next economy strengths of Michigan's metropolitan areas, and compares them with peer regions across the nation and with regions whose overall economic performance generally exceeds that of the comparable Michigan regions. This assessment will help Michigan understand where it its strengths are, and where its competitor regions stand. It will be used to inform the policy recommendations that ultimately emerge from the Urban and Metropolitan Strategies Project.

This assessment, particularly the first section, should inspire Michiganders long accustomed to hearing only bad news about their cities, metropolitan areas, and state. But at the same time, it does not gloss over the real challenges that Michigan's metropolitan areas confront. The second and third sections of the assessment show the broad, often sobering, economic and social trends that confront Michigan's metropolitan areas. While the rest of the country surged forward economically over the last thirty years (with the exception of the recent recession), many of Michigan's metros stood still, and thus lost ground from a national perspective. While more education is the key to individual and collective economic success, many of Michigan's residents have not sought higher education credentials.

The next economy represents a chance for Michigan to use existing strengths to chart a new course in the Lansing-East Lansing and Ann Arbor metropolitan areas.

HIGHLIGHTS

EXPORTS

While Ann Arbor and Lansing have a different economic composition than most Michigan metros, the strongest export sector in both is transportation equipment manufacturing, and their top trading partner is Canada. Most of their peer and aspirational metros are more service-exports intensive. This is noteworthy because, while the United States is losing global market share in goods exports, it dominates the fast-growing services category. The education of foreign students (which counts as a service export) is a potential service export strength for Ann Arbor and Lansing, as are the royalties and licensing fees from intellectual property. Indeed, royalties and licensing fees is the second-biggest export "industry" in Ann Arbor.

INNOVATION

Metropolitan Ann Arbor scores very well on two key innovation indicators. It is a powerhouse in patenting activity. Ann Arbor's rate of patent application per 1000 employees is far higher than that of peer or aspirational metros, and is almost three times higher than the average of all U.S. metro areas. But that high patent rate does not translate into an exceptionally high share of high tech employment, a category in which Ann Arbor is merely average. Lansing is fairly weak on both of these indicators, but, as noted above, is phenomenally strong in biofuel technology patents.

CLEAN ECONOMY

Most clean economy strengths arise from a metro's existing or long-standing knowledge and experience, so Lansing has an outsized share of jobs in regulation and compliance, reflecting its status as the state capital region. MSU's agricultural focus is reflected in the fact that Lansing's patent activity in biofuel technology is almost 25 times higher than the U.S. metro average. Ann Arbor specializes in green chemical products and fuel cells. Neither metropolitan area has a very high number of clean economy jobs per 100 workers, but in both metropolitan areas the median wage of clean economy jobs is above the overall median wage (as is true in most US metropolitan areas).

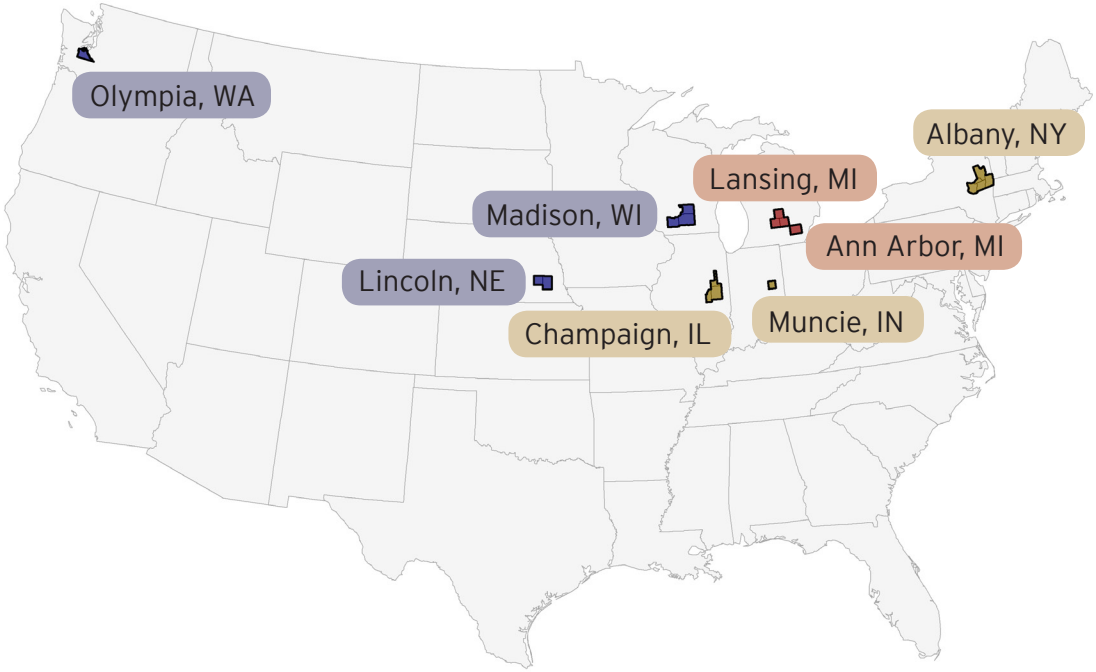
OPPORTUNITY

In Lansing younger residents (ages 25-34) are more likely to hold a bachelor's degree than older residents (ages 35-44). This holds true for Lansing's peer and aspirational metros as well. Surprisingly, Ann Arbor exemplifies the troubling national trend of lagging attainment progress among young adults. That said, Ann Arbor and Lansing are both home to a very well-educated populace. The next economy will require workers who are well educated when they enter the workforce and who continually upgrade their skills. As one would expect, Ann Arbor and Lansing have high numbers of residents enrolled in higher education.

GEOGRAPHIES

The following tables include economic data for 1980-2009, information that helps Michigan's metropolitan areas understand their strengths in the next economy, and demographic data for the period 2000-2009. Each table compares Michigan's metropolitan areas with other metros that resemble them in terms of industrial composition and overall size. Differentiating metropolitan areas along these lines ensures that these comparison metros have faced challenges and opportunities similar to those faced in Michigan. The analysis divides 14 of Michigan's metropolitan areas, Detroit, Grand Rapids, Lansing, Ann Arbor, Flint, Kalamazoo, Holland, Saginaw, Muskegon, Niles, Jackson, Monroe, Battle Creek, and Bay City, into four groups based on size, and each group has three peer metros – those with similar population, industrial composition, and internal competitiveness factors – and three "aspirational" metros – places with similar population and industrial composition, but with internal factors that have enabled them to gain jobs and expand their output much faster their Michigan counterparts. As most Michiganders recognize, the Lansing-East Lansing and Ann Arbor metropolitan areas have a somewhat different industrial composition than other Michigan metros, because of the presence of major state universities and of course the seat of state government. Their peer metros are Champaign, Albany, and Muncie. Their "aspirational" metros are Madison, Olympia, and Lincoln.

Counties Within Compared Metros			
MI	Lansing, MI Clinton, Ingham, Eaton	Ann Arbor, MI Washtenaw	
PEER	Albany, NY Albany, Schenectady, Rensselaer, Schoharie, Saratoga	Champaign, IL Champaign, Ford, Piatt	Muncie, IN Delaware
ASP.	Lincoln, NE Lancaster, Seward	Madison, WI Dane, Iowa, Columbia	Olympia, WA Thurston



The nation's 366 metropolitan areas contain 84 percent of U.S. population, but account for 85 percent of its jobs, and 88 percent of Gross Domestic Product (GDP). They will be primary drivers of the next economy. They dominate U.S. trade and are on the front lines of commerce with the world's rapidly expanding economies in Asia and Latin America. Though these 366 metropolitan areas vary in size and the nature of their work, each represents an important economic building block for their state and national economies.

Among Michigan's smaller and mid-sized metropolitan areas there is a great deal of variance in the size and nature of their economies. These differences can be observed by comparing metros along the three measures shown below. Output, or gross metropolitan product (GMP), is the total value of goods and services produced in a metropolitan area, providing a sense of the absolute size of the economy. Employment measures the number of wage and salary jobs in a metropolitan economy, illustrating the magnitude of a metro's employed workforce. And because people can "vote with their feet," population can be an indicator of how well a place marshals its opportunities and amenities, and provides a quality of life that is both attractive to potential residents and conducive to people at all stages of their life.

Ann Arbor and Lansing are mid-sized metropolitan areas that enjoy the powerful economic benefits and population stabilizing effects of major state universities and state government. They are larger than most of their peer and aspirational metros except Albany and Madison.

Output, population, and employment, 2009

	Metropolitan Area	Gross metropolitan product (millions of dollars)	Total population	Total employment
	United States	12,863,351	307,006,550	N/A
	All Metro Areas	12,318,168	257,292,850	116,084,310
	100 Largest Metros	9,219,093	201,445,823	91,060,460
MI	**Lansing**	**18,720**	**453,603**	**218,900**
MI	**Ann Arbor**	**16,350**	**347,563**	**193,560**
PEER	Albany, NY	44,276	857,592	450,130
PEER	Champaign, IL	10,488	226,132	112,800
PEER	Muncie, IN	3,494	115,192	50,660
ASP.	Madison, WI	30,379	570,025	350,290
ASP.	Lincoln, NE	13,750	298,012	175,540
ASP.	Olympia, WA	8,632	250,979	103,560

NEXT ECONOMY

The next economy must have four characteristics: higher exports, to take advantage of rising global demand; low carbon technology, to lead the clean-energy revolution; innovation, to spur growth through ideas and their deployment; and greater opportunity, to reverse the troubling, decades-long rise in inequality. Metros will take the lead on all four fronts.

Metros dominate U.S. trade, for example. The 10 largest metros, including Detroit, generated 28 percent of national exports in 2008. Smaller and medium-sized metros, such as Grand Rapids and Kalamazoo, also export a large share of what they create and produce.

The low carbon economy will be primarily invented, financed, produced and delivered in metropolitan areas. They are a prime market for air and water management, energy efficiency goods and services, building retrofits, renewable energy, low-carbon transportation solutions, and the smart systems needed to run them. But more than major markets, the nation's metropolitan areas aggregate the key inputs to clean innovation, such as research hubs and advanced manufacturing facilities.

On innovation more broadly, our metropolitan areas are the nation's knowledge and finance centers. The top 100 metros produce 78 percent of all patents and their universities and research centers receive 82 percent of NIH and NSF research funding. Almost all (94 percent) of the venture capital needed to finance laboratory breakthroughs and their transition to market are found in the 100 largest metros.

Metropolitan areas also have the potential to speed workers' wage growth and increase workers' productivity levels and earnings, even after they leave the metro. This, combined with the range of educational offerings available in metropolitan areas makes them key sites for helping workers succeed.

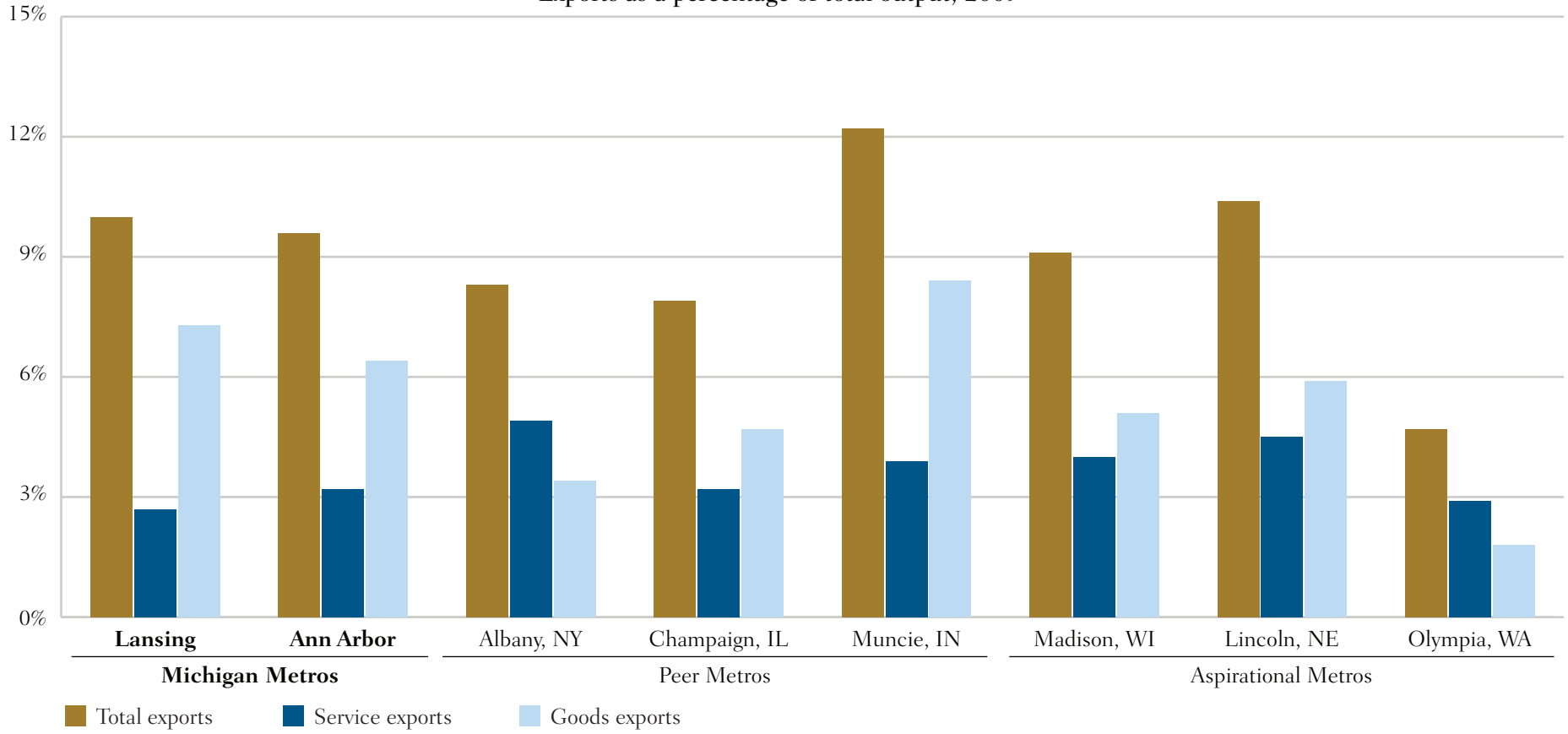
EXPORTS

For more than 200 years, economists have linked trade with economic growth. Exporting forces companies to stay on the cutting edge of competition and exposes them to international best practices. Even if companies initially struggle in foreign markets, there is evidence that this intense competition forces them to improve over time. Trade also allows companies to spread the costs of developing a particular product over a much larger number of consumers. Many products with large upfront costs could never be profitable if not for vast international markets, which allow producers to cut down on the costs of producing a single product.

Although the U.S. trade deficit is huge, we still manufacture a range of advanced goods that the rest of the world wants, including aircraft, space craft, electrical machinery, precision surgical instruments, and high-quality pharmaceutical products. Services, such as education or health-care at US institutions, architectural and engineering consulting, financial and legal services, and royalities are increasingly in demand abroad. On average across all metropolitan areas in 2009, 43.5% of exports were services and 56.5% were goods; the overall export intensity was 11.0%. *(Sources: Brookings analysis of BEA, USITC, IIE, IRS, and Moody's Analytics data.)*

Michigan metro areas' export intensity is driven by manufactured goods

Exports as a percentage of total output, 2009

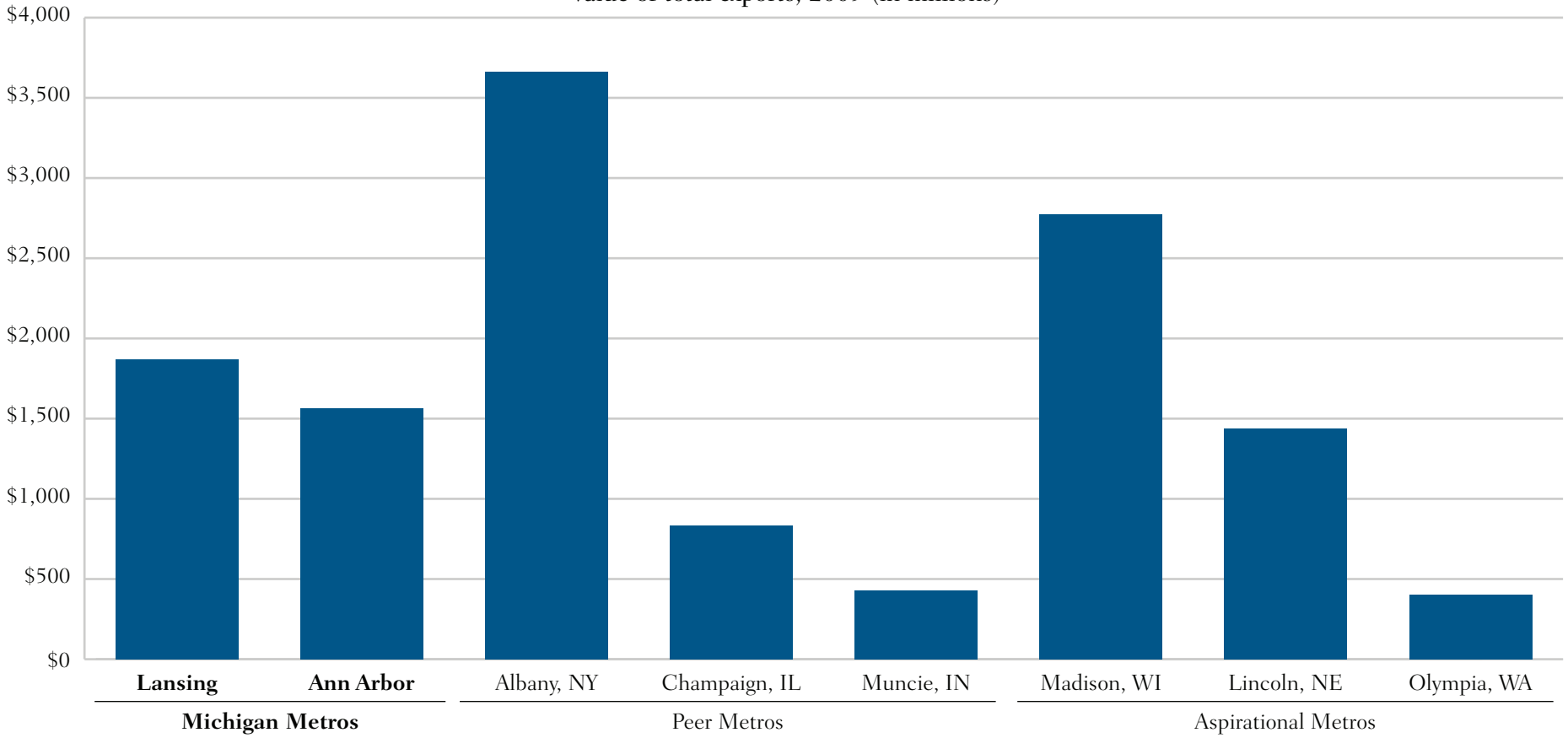


Exports are an important growth engine in the United States, Michigan, and many of its metropolitan areas. American exports grew 12.7 percent from the third quarter of 2009 to the third quarter of 2010, outperforming the 3.2 percent growth of the economy. Almost 15 percent of Michigan's state GDP came from exports in 2008.

Simply put: More exports means more jobs. Brookings research shows that, for the average metropolitan area in 2008, 5,800 jobs supported every $1 billion in exports. Export-related jobs offer good pay to workers at all levels of education, including those without college degrees. New Brookings research has found that for every $1 billion dollar increase in the exports of the industry in which they work, workers in the exporting industries located in the top 100 metro areas earn roughly one to two percent higher wages. Even workers without high school diplomas who work in export industries earn this premium. *(Sources: Brookings analysis of BEA, USITC, IIE, IRS, and Moody's Analytics data.)*

Michigan's mid-size metros have relatively strong export volumes

Value of total exports, 2009 (in millions)



Manufactured goods like automobiles and auto parts account for at least half of the value of all exports in most Michigan metros. In every Michigan metropolitan area except Detroit and Ann Arbor, the top three exporting industries are a type of manufacturing. Metro Detroit's airport and the knowledge-driven economy of Ann Arbor lead those metros to export things other than goods, like tourism, research and development, and patents for new technologies, which result in royalties and licensing fees. *(Sources: Brookings analysis of BEA, USITC, IIE, IRS, and Moody's Analytics data.)*

Manufactured goods account for as much as half of all exports in many Michigan metros

Top three exporting industries, 2009

Metropolitan Area	Industry name	Value of industry exports, 2009 (in millions)	Industry share of total exports, 2009
Lansing, MI	**Transportation Equipment Manufacturing**	**$883**	**47.3%**
	Chemical Manufacturing	**$107**	**5.7%**
	Machinery Manufacturing	**$83**	**4.5%**
Ann Arbor, MI	**Transportation Equipment Manufacturing**	**$685**	**43.8%**
	Royalties and license fees	**$83**	**5.3%**
	Research and development and testing services	**$68**	**4.3%**
Albany, NY	Chemical Manufacturing	$607	16.6%
	Telecommunications	$509	13.9%
	Machinery Manufacturing	$347	9.5%
Champaign, IL	Machinery Manufacturing	$82	9.9%
	Agriculture	$80	9.6%
	Telecommunications	$69	8.3%
Muncie, IN	Transportation Equipment Manufacturing	$90	21.2%
	Machinery Manufacturing	$78	18.3%
	Primary Metal Manufacturing	$39	9.1%
Madison, WI	Chemical Manufacturing	$284	10.2%
	Machinery Manufacturing	$282	10.2%
	Telecommunications	$257	9.3%
Lincoln, NE	Chemical Manufacturing	$246	17.1%
	Transportation Equipment Manufacturing	$144	10.0%
	Other transportation	$142	9.9%
Olympia, WA	Travel	$52	12.9%
	Telecommunications	$48	11.9%
	Agriculture	$38	9.3%

Exports are critical now for several reasons. Foreign nations are where the recovery from the Great Recession and demand for imports are strongest. According to the Brookings' *Global Metro Monitor*, 30 metropolitan areas that have recovered are almost exclusively located in Asia and Latin America, such as Lima, Shenzhen, Santiago, and Guangzhou. Rising nations and their rising metros are now driving global demand for trade and commerce. Brazil, India, and China accounted for 8.6 percent of the global middle-class consumption in 2009, but could account for 26 percent by 2020, according to a recent Brookings study.

Like the United States a whole, most metropolitan areas trade most with their North American neighbors, Canada and Mexico. In Michigan, trade with these nations accounts for at least a quarter of all exports in most metros. The United Kingdom, Japan, and Germany are also important destinations for exported goods and services for Michigan's metro areas. The high volume of trade with these advanced economies reflects the highly sophisticated and technology-driven goods Michigan exports to the rest of the world. *(Sources: Brookings analysis of BEA, USITC, IIE, IRS, and Moody's Analytics data.)*

Like the United States, most metros' largest trading partners are in North America

Top three foreign export partners, 2009

Metropolitan Area	Country name	Value of exports to country, 2009 (in millions)	Country share of total exports, 2009
Lansing, MI	**Canada**	**$352**	**18.8%**
	Mexico	**$152**	**8.1%**
	United Kingdom	**$121**	**6.5%**
Ann Arbor, MI	**Canada**	**$273**	**17.4%**
	Mexico	**$116**	**7.4%**
	United Kingdom	**$99**	**6.3%**
Albany, NY	Canada	$432	11.8%
	United Kingdom	$327	8.9%
	Mexico	$248	6.8%
Champaign, IL	Canada	$123	14.8%
	Mexico	$72	8.6%
	Japan	$57	6.9%
Muncie, IN	Canada	$70	16.4%
	Mexico	$35	8.2%
	United Kingdom	$32	7.4%
Madison, WI	Canada	$387	14.0%
	Mexico	$226	8.1%
	United Kingdom	$195	7.0%
Lincoln, NE	Canada	$193	13.4%
	Mexico	$111	7.7%
	Japan	$97	6.8%
Olympia, WA	Canada	$51	12.8%
	United Kingdom	$35	8.7%
	Japan	$29	7.2%

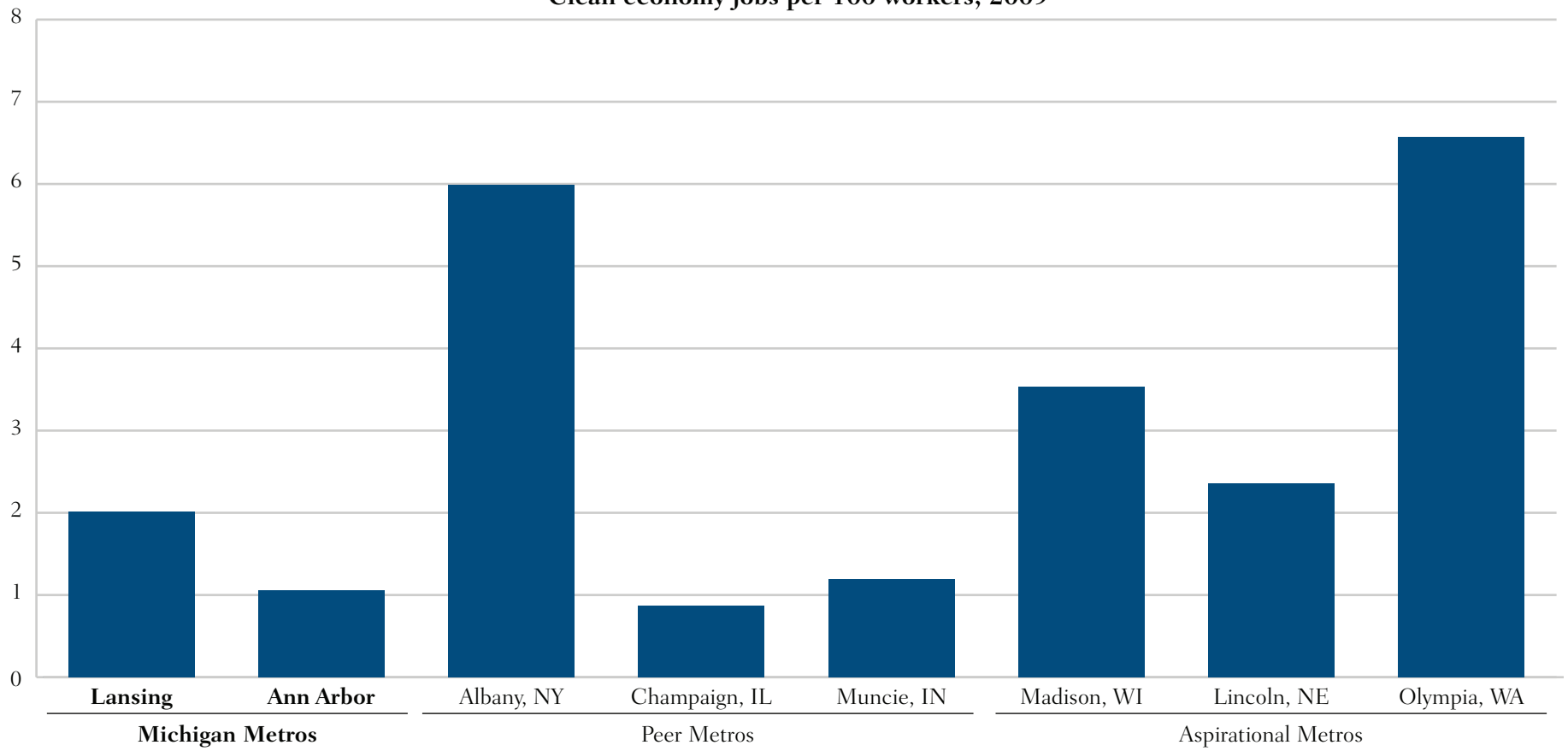
CLEAN ECONOMY

As Brookings and Battelle researchers note in *Sizing the Clean Economy*, "The clean economy ... interfaces with nearly every aspect of the rest of the economy and is emerging as a site of rapid technological and process innovation world-wide." Narrow discussions of the impacts of cap and trade regimes or of green jobs have obscured how profound and market-driving the transition will be. Shifting to new energy sources and focusing on conservation of all kinds of fuels will affect the source of our energy, the cars we drive, the products we buy, the kinds of homes we live in, the shape and location of our communities, and how we get from one place to another.

As the Brookings-Battelle team writes, "The clean economy increasingly looks like a promising location for the emergence of significant new technologies, processes, and industries that will shape the next economy and generate new jobs. That dozens of the world's nations ranging from Brazil and China to South Korea and Turkey are investing heavily in such development both reinforces the emerging consensus and underscores that the 'race to clean' has become an urgent competition among nations for the resource productivity, jobs, and export-oriented manufacturing that will come with it." *(Source: Brookings and Battelle 2011.)*

The Lansing and Ann Arbor metros suffer from having little clean economy employment

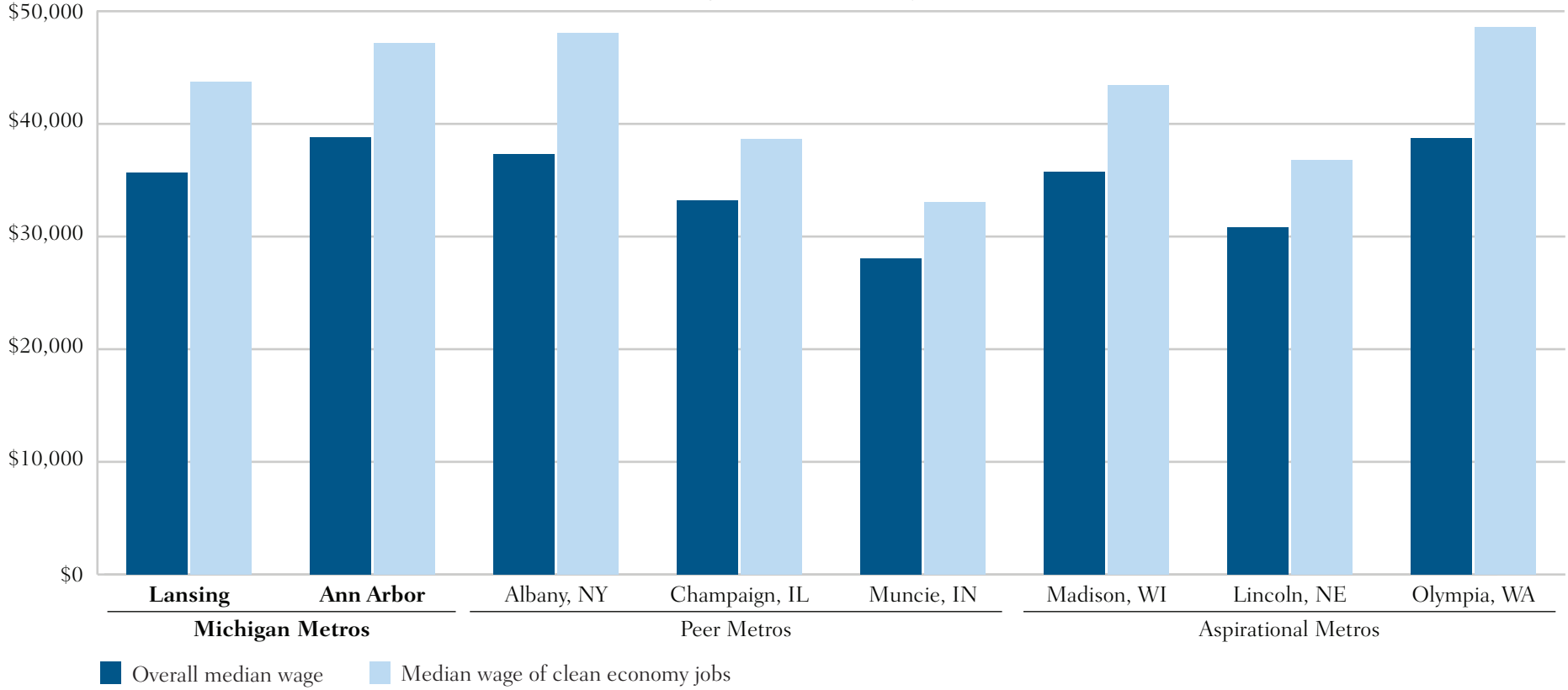
Clean economy jobs per 100 workers, 2009



In many ways, the burgeoning clean economy embodies all four characteristics of the next economy: exports, innovation, low-carbon, and especially opportunity. Median wages for clean economy industries are higher at nearly all skill levels than in the rest of the economy. This is especially true in Michigan, where clean economy workers in metros like Jackson earn nearly a 30 percent premium over their counterparts in other sectors of the economy. The broad skill base and market-driven growth of the clean economy offers great opportunity to workers throughout the economy. *(Source: Brookings and Battelle 2011.)*

Jobs in the clean economy provide greater opportunity

Median annual wage of clean economy jobs, 2009



Researchers from Brookings and Battelle cut the clean economy into 39 distinct segments, reflecting the diversity of this sector. Each segment represents a discrete technology, from wind power to energy efficient lighting, or a specific service, like environmental remediation services or regulatory work on the government or non-profit side. Metropolitan areas specialize in different segments of the clean economy just as they tend to specialize in sectors such as financial services or automotive manufacturing.

The clean economy in Michigan's metros tends to be oriented around a metro economy's existing strengths, usually advanced manufacturing. For example, Detroit has an outsized share of jobs in electric vehicle and battery technology, reflecting that metro's knowledge and experience with automobiles. As the capital, Lansing contains a larger-than-normal share of jobs in regulation and compliance. Monroe's power plant provides it with a specialization in nuclear energy production. *(Source: Brookings and Battelle 2011.)*

Michigan's mid-size metros have diverse clean economy segments

Top three clean economy segment specializations by metro, 2009

Metropolitan Area	Clean economy segment name	Segment employment as share of all-metro average
Lansing, MI	**Regulation and Compliance**	**672%**
	Air and Water Purification Technologies	**321%**
	Recycled-Content Products	**156%**
Ann Arbor, MI	**Green Chemical Products**	**690%**
	Fuel Cells	**518%**
	Professional Environmental Services	**239%**
Albany, NY	Wind	5337%
	Battery Technologies	3021%
	Fuel Cells	1496%
Champaign, IL	Regulation and Compliance	107%
	Green Architecture and Construction Services	91%
	Biofuels/Biomass	75%
Muncie, IN	Battery Technologies	1856%
	Recycled-Content Products	255%
	Public Mass Transit	116%
Madison, WI	Appliances	609%
	Regulation and Compliance	525%
	HVAC and Building Control Systems	437%
Lincoln, NE	Organic Food and Farming	494%
	Conservation	266%
	Waste Management and Treatment	204%
Olympia, WA	Conservation	1453%
	Sustainable Forestry Products	1067%
	Regulation and Compliance	802%

Patenting activity is a good predictor of commercialization; the commercialization of innovation, or the process of bringing knowledge to market, is the crucial driver of innovation. Patent figures certainly do not capture all aspects of innovation, but they are a useful, tested, and proven proxy. *(Source: The U.S. Patent and Trademark Office courtesy of the Strumsky Patent Database, University of North Carolina at Charlotte.)*

Michigan's mid-size metros have excellent clean economy patenting activity

Patent applications and patenting activity in renewable energy, 2001–2010

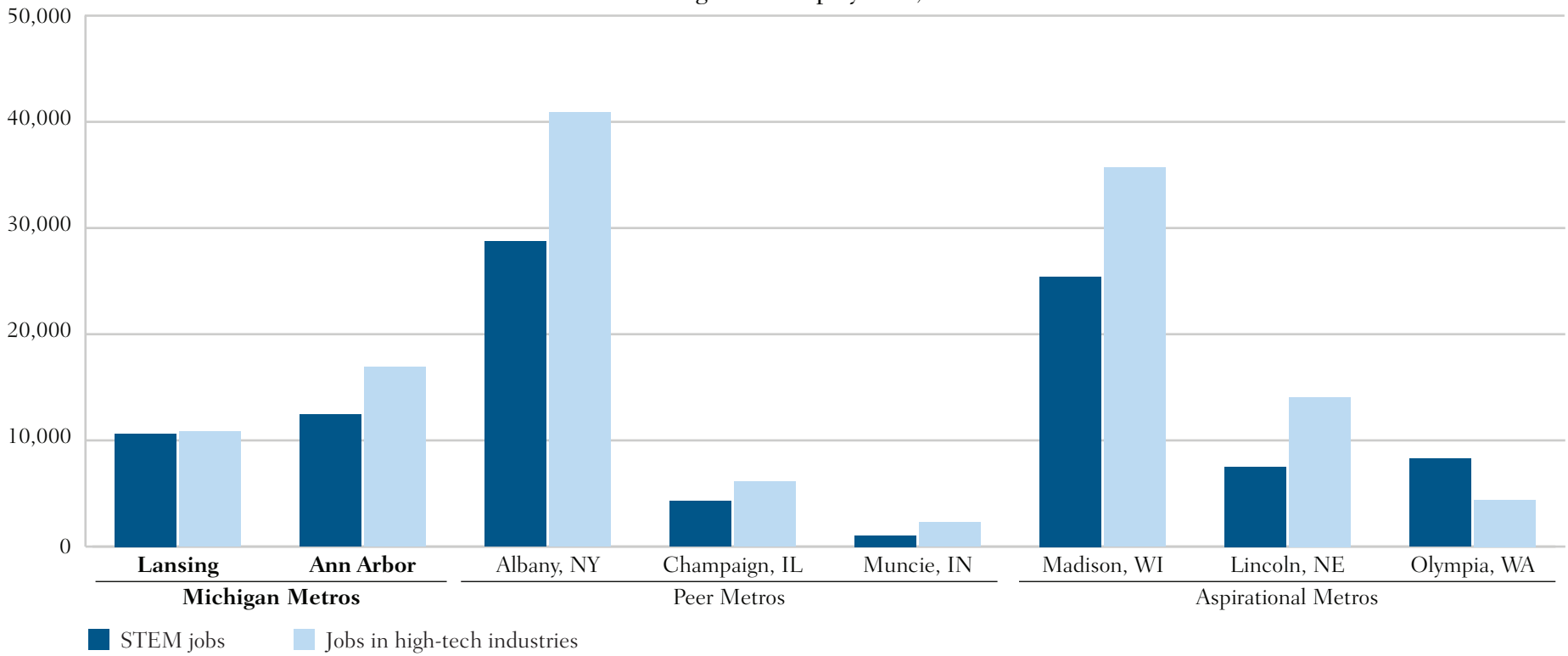
	Metropolitan Area	Patent applications, 2001 to 2010	Patent applications per 1,000 employees	Number of unique patent inventors, 2001 to 2010	Patent activity as share of U.S. metro average* in		
					Biofuel Technology	Solar Energy Technology	Wind Energy Technology
	All Metro Areas	2,722,745	23.5	1,547,405	N/A	N/A	N/A
	100 Largest Metros	2,362,809	25.9	1,338,662	N/A	N/A	N/A
MI	**Lansing**	**2,148**	**9.8**	**1,389**	**2442.9%**	**138.7%**	**49.7%**
MI	**Ann Arbor**	**14,141**	**73.1**	**8,243**	**98.4%**	**242.9%**	**101.3%**
PEER	Albany, NY	22,801	50.7	11,340	30.9%	298.2%	1248.2%
PEER	Champaign, IL	2,908	25.8	2,041	138.0%	97.8%	0.0%
PEER	Muncie, IN	192	3.8	145	0.0%	0.0%	0.0%
ASP.	Madison, WI	11,086	31.6	6,799	325.0%	61.9%	48.1%
ASP.	Lincoln, NE	1,241	7.1	837	620.3%	0.0%	0.0%
ASP.	Olympia, WA	842	8.1	557	877.7%	0.0%	84.5%

* These location quotients are equal to the particular technology's share of all local patent applications divided by the technology's share of total patents produced in all U.S. metropolitan areas. A score of 250% means that the metropolitan area in question has two-and-a-half times the U.S. metropolitan average.

New technologies need people to discover and develop them. Often those people work in science, technology, engineering, or math (STEM) fields. The concentration of STEM workers within a metropolitan area can be a good indication of the amount of high-tech, innovative activity taking place there. However, it takes a team of managers, marketers, accountants, production workers, and others to bring new technologies to market. One scientist or engineer, or "STEM worker," could represent a hundred jobs involved in other types of work in high-tech industries. Here, high-technology industries are defined as those in which scientists and engineers comprise at least 10 percent of all jobs. *(Sources: Brookings analysis of Moody's Analytics data and BLS Occupational Employment Statistics, 2009.)*

Metros Lansing and Ann Arbor have appreciable STEM and high-tech job opportunities

STEM and high-tech employment, 2009



* High-tech STEM occupations are defined by Daniel Hecker in "Tech-technology employment: a NAICS-based update" in the July, 2005 Monthly Labor Review.
** In accordance with Hecker, 2005. This definition included 46 four-digit NAICS industries in 2002.

In several of Michigan's metros, technology workers account for a large portion of local employment and support a large number of jobs, reflecting the integral role of technical skill and knowledge in those economies. However, other Michigan metros, particularly smaller ones, trail their peers in the relative size of their technology workforce. This is likely a reflection of the nature of their economies, which are based largely on work that, in general, is less-skilled and more routine, such as primary metal manufacturing, food-related manufacturing, or on service and regulatory work such as state government. *(Sources: Brookings analysis of Moody's Analytics data and BLS Occupational Employment Statistics, 2009.)*

Michigan metros lag behind nationwide levels of high-tech industry employment

STEM and high-tech employment, 2009

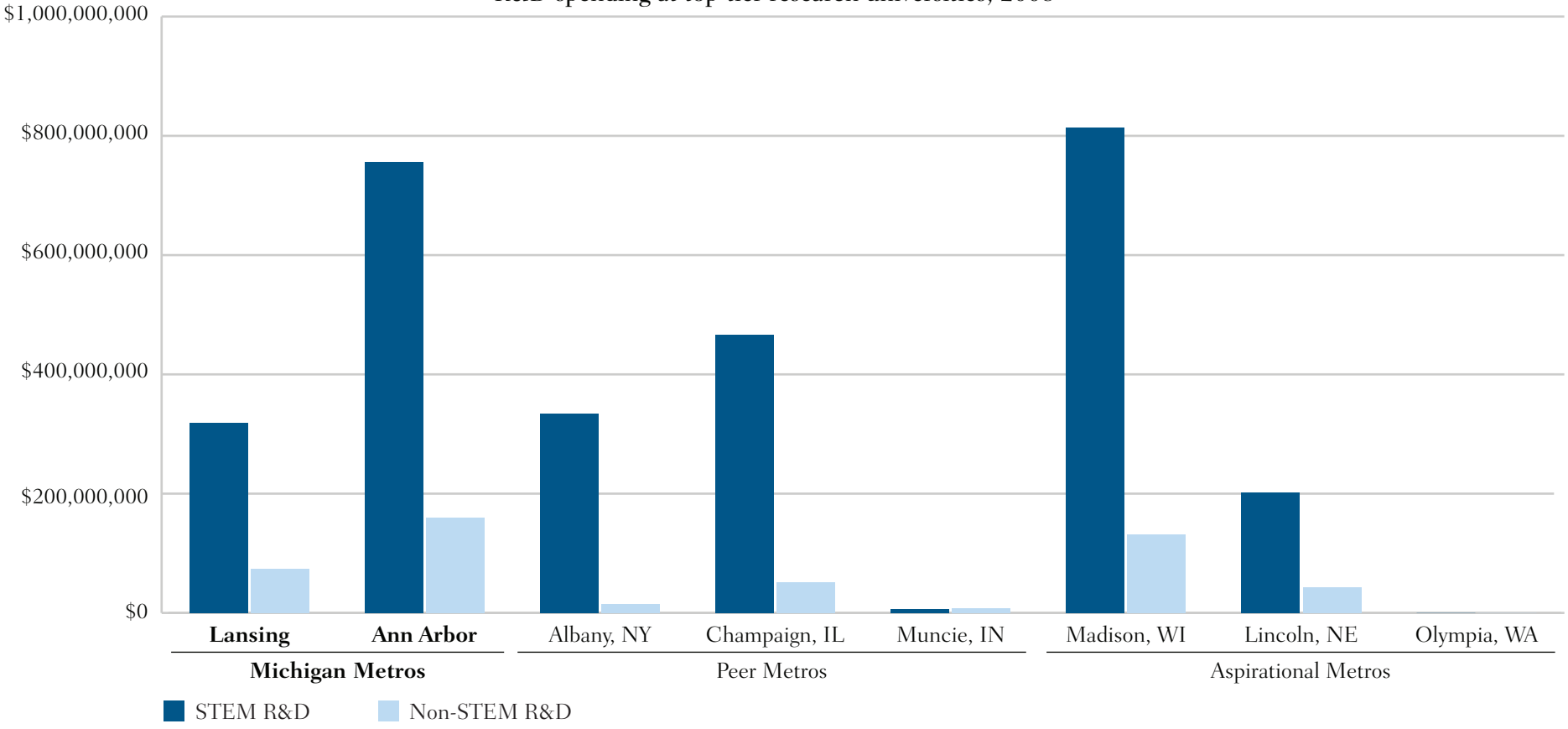
	Metropolitan Area	Total number of STEM jobs	Number of STEM jobs per 1,000 jobs	Employment in high-tech industries	High-tech industry employment as a share of total	High-tech industry employment as a share of national average
	United States	6,894,500	52.8	11,981,758	8.8%	N/A
	All Metro Areas	5,954,270	53.1	11,055,597	9.5%	108.4%
	100 Largest Metros	N/A	N/A	9,388,834	10.3%	117.3%
MI	**Lansing**	**10,630**	**53.0**	**10,859**	**5.0%**	**56.4%**
MI	**Ann Arbor**	**12,420**	**65.3**	**16,909**	**8.7%**	**99.4%**
PEER	Albany, NY	28,730	66.1	40,899	9.1%	103.4%
PEER	Champaign, IL	4,310	43.2	6,134	5.4%	61.9%
PEER	Muncie, IN	1,040	22.7	2,290	4.5%	51.4%
ASP.	Madison, WI	25,420	77.2	35,706	10.2%	116.0%
ASP.	Lincoln, NE	7,520	46.4	14,077	8.0%	91.3%
ASP.	Olympia, WA	8,310	86.6	4,406	4.3%	48.4%

Each year billions of dollars of research funding flows through American universities. Below are the research expenditures (in 1,000s of dollars) of the 670 largest recipients of federal research money, though the numbers also include research expenditures funded by other sources. Though this is not nearly comprehensive accounting of all research funding in metropolitan areas, it is suggestive of the academic research activity in a place.

R&D spending at research universities in Michigan, not surprisingly, concentrates in Ann Arbor and Lansing, home to the state's largest public research institutions. This is not a resource that can be evenly distributed around the state. Policymakers looking to bolster metro and state economies should marshal resources around technology transfer and commercialization, drawing on venture capital, manufacturing, and product development capacity across the state. *(Sources: Carnegie Foundation for the Advancement of Teaching and the National Science Foundation.)*

Research institutions attract large investments in metro economies

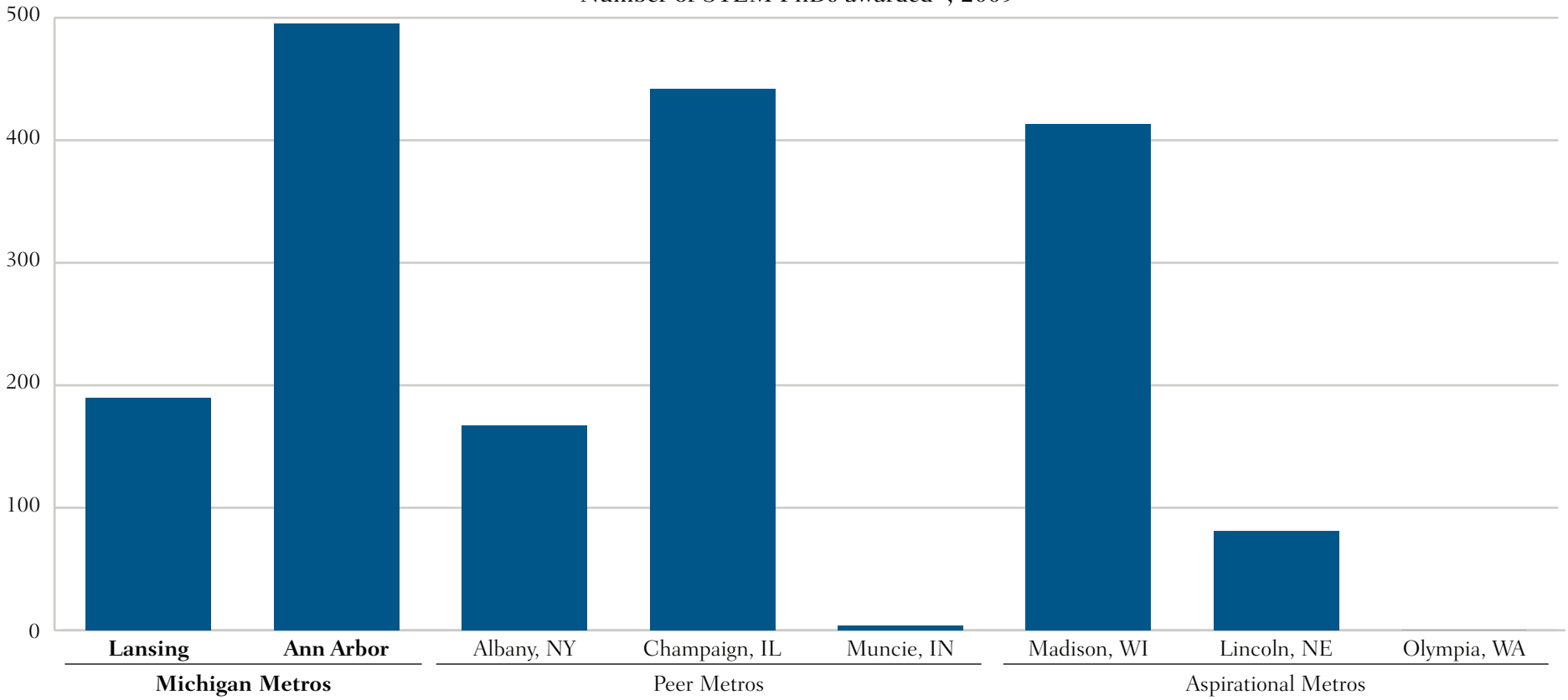
R&D spending at top-tier research universities, 2008



Science, technology, engineering, and mathematics (STEM) students tend to be attracted to places with a wealth of funding and research opportunities. As a result, metropolitan areas with research intensive academic institutions also tend to be the places where new ideas take root as their commercialization begins, creating jobs and establishing new industries. As with research dollars, PhD programs are not spread thinly across the state, but cluster in the Lansing and Ann Arbor metropolitan areas. The benefit to other metros comes when these highly educated individuals choose to stay in Michigan and deploy their skills in creating new technologies, attracting additional research or venture capital funding, and creating new companies. *(Sources: Carnegie Foundation for the Advancement of Teaching and the National Science Foundation.)*

Metro areas with large research institutions attract the world's future technology experts

Number of STEM PhDs awarded*, 2009

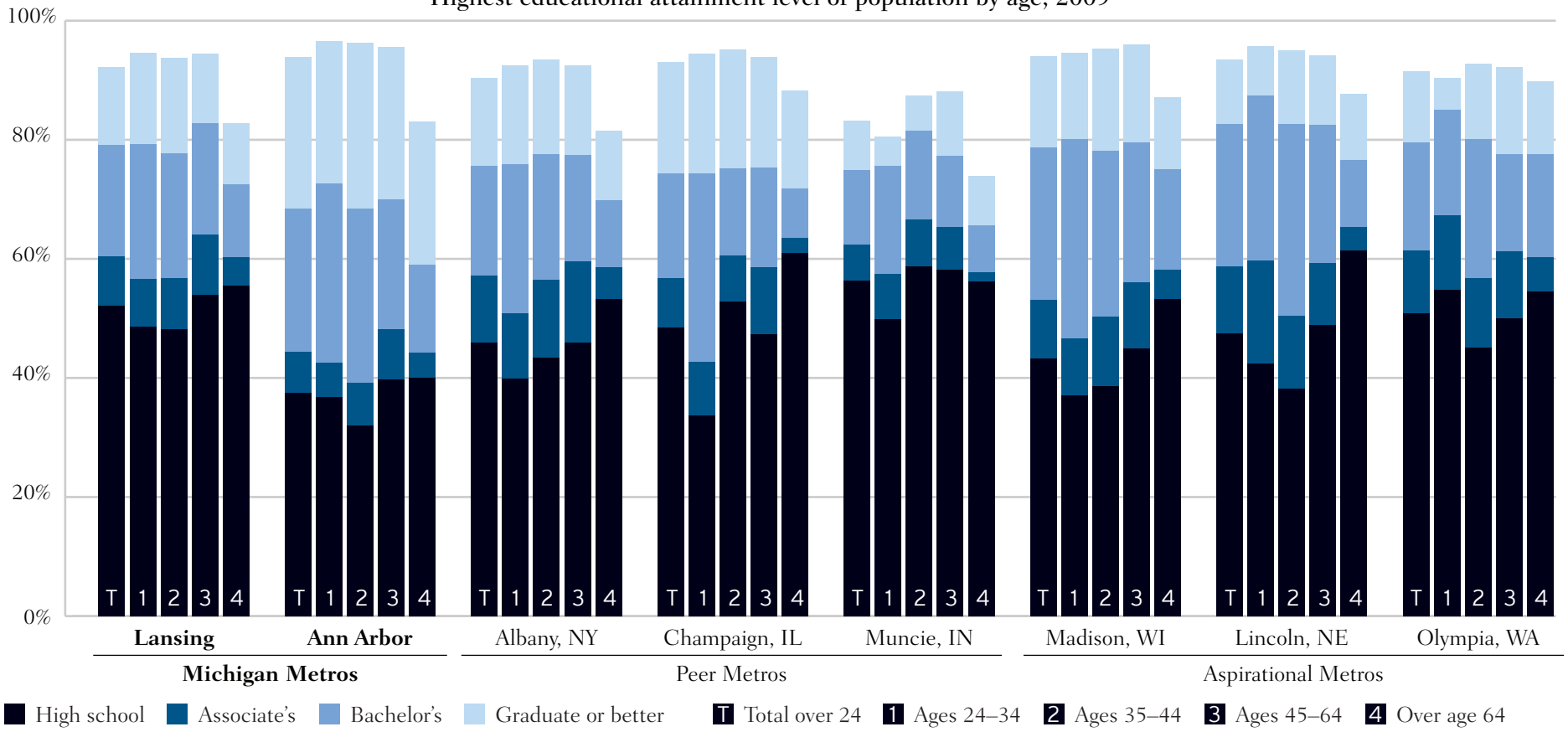


* Based on location of degree-granting educational institution.

The next economy will require workers who are well educated when they enter the workforce and who continually upgrade their skills. Brookings' *State of Metropolitan America* report indicates that while Americans are growing more educated, progress appears to be slowing among younger adults. In 2009 nationwide, 25 to 34 year-olds were less likely to hold a bachelors degree than 35 to 44 year-olds, a reversal from the pattern in 2000. Most Michigan metropolitan areas exemplify this trend (Grand Rapids, Lansing, and Holland are exceptions). Because highly educated metropolitan areas are getting "smarter" faster than other areas, lagging attainment progress among young adults could slow future gains and overall economic growth. *(Source: American Community Survey 1-year Estimates, 2009.)*

Workers' skills in Michigan metros rival those of their counterparts in peer metros

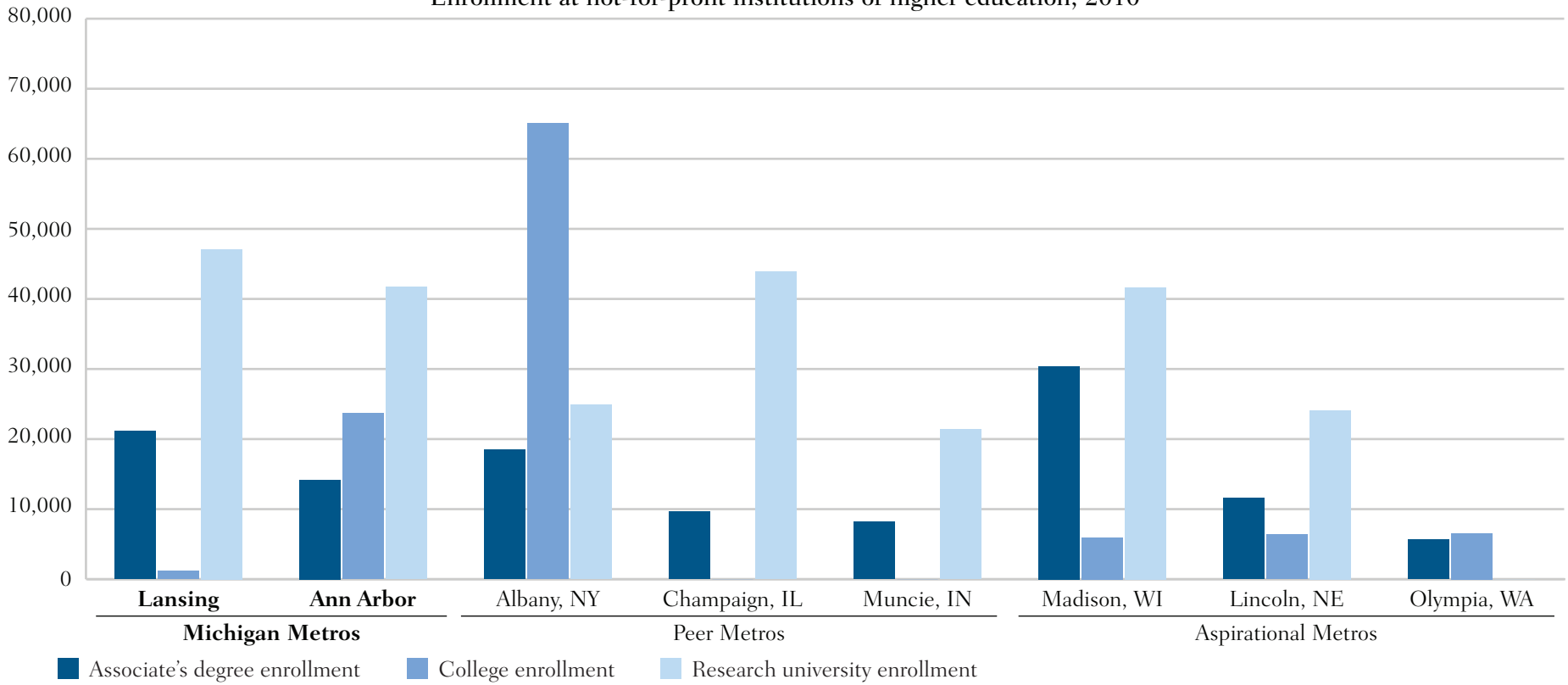
Highest educational attainment level of population by age, 2009



While completion rates may be troubling, the past decade saw widespread increases in college and graduate school enrollment among young adults. This trend was particularly pronounced in large older industrial metropolitan areas in the Great Lakes region, where enrollments surged. *State of Metropolitan America* hypothesizes that, "It may be that the loss of manufacturing jobs over the course of the decade, many of which had not required a bachelor's degree, spurred more young people in these regions to pursue higher education," but warns, "whether they will stay in these regions to pursue job opportunities after earning degrees remains to be seen." Even as Michigan's metropolitan areas weigh how they boost current residents' educational attainment, they have to provide an attractive environment for these workers after graduation as well. *(Sources: National Center for Education Statistics, Carnegie Foundation for the Advancement of Teaching.)*

Community colleges play an important role in preparing the Michigan workforce

Enrollment at not-for-profit institutions of higher education, 2010



*Associate's degree programs include not-for-profit two-year community colleges, college programs include four-year, BA-offering institutions (excluding research universities), and research universities include institutions focused on research-intensive graduate programs, as defined by the Carnegie Foundation.

ECONOMIC PERFORMANCE

Michigan's metropolitan areas in many ways embody the next economy. They host companies with extensive experience in global trade, boast emerging centers of clean energy research, and are home to top-ranked universities. And, as the birthplace of Henry Ford's five-dollar-a-day wage, Michigan was once the standard-bearer for an opportunity rich economy. These strengths are an inheritance from their rich industrial heritage.

In recent decades, however, that same heritage has caused wrenching difficulties for Michigan's metros. Despite their soaring economic growth throughout the greater part of the 20th century, most of Michigan's metropolitan economies stood still over the past thirty years, achieving very little or even negative job and output growth even before the Great Recession, as peer metros passed them by.

This section examines Michigan metros' long-term economic performance from 1980 through 2009. It shows that despite all their potential, Michigan's metropolitan economies have fallen behind largely due to their failure to keep up. As America transitioned from an industrial to service-based economy, other metros were able to leverage their existing assets to foster new and expanding knowledge-based industries as they ceded less productive work in other parts of their economies. For many reasons, the metropolitan economies of Michigan did not make these same shifts.

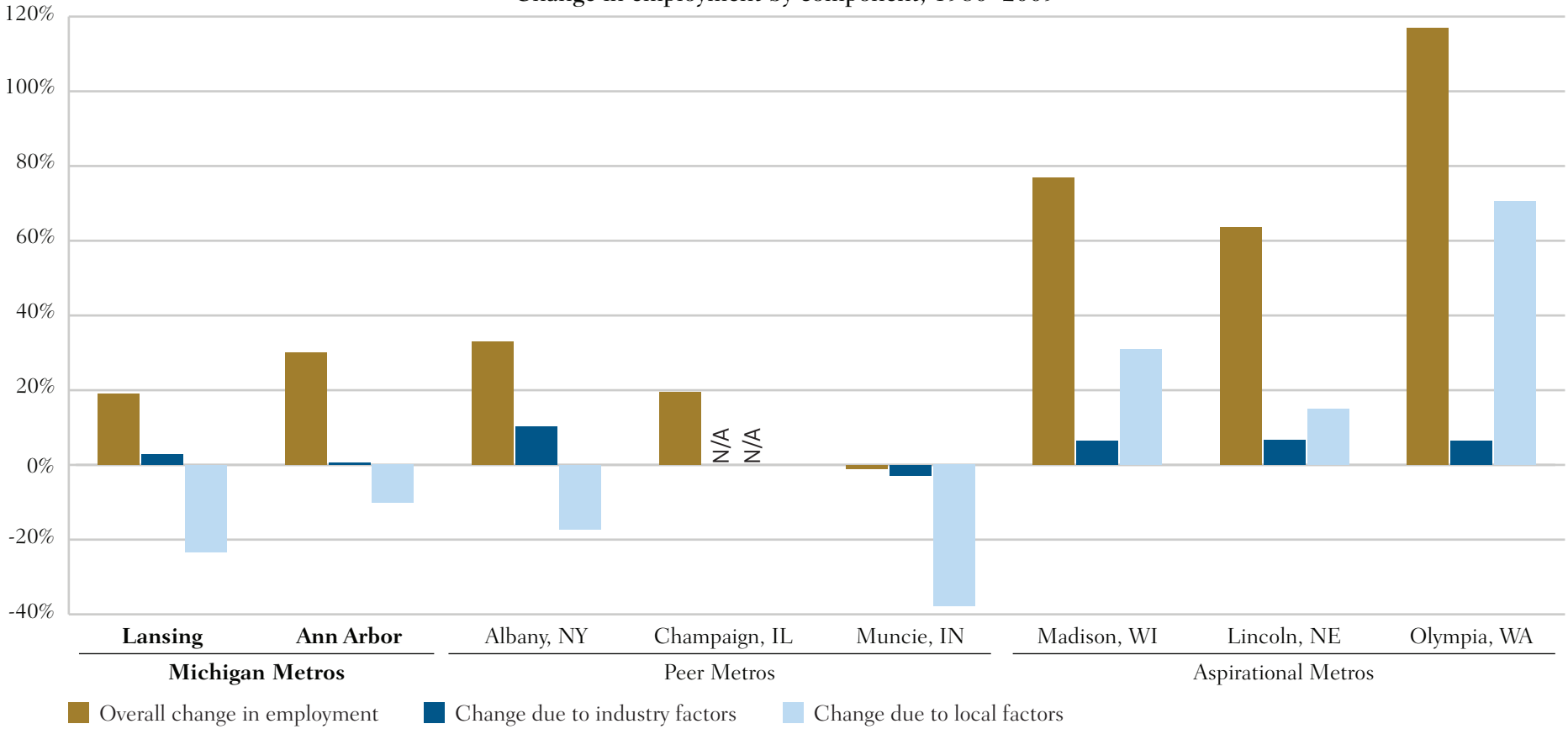
Michigan has the potential to be a center for advanced manufacturing and innovation, the Germany of the United States, where well-trained workers implement the designs of imaginative engineers to create products that compete on quality. But Michigan faces additional challenges as it prepares itself for a global economy much more similar to the one it came of age in. The next economy will be driven by more fragmented, diverse, and loose networks of firms rather than the large vertically integrated ones Michigan has come to know well. It will require highly-trained and nimble workers who adapt to ever-changing technologies and rapidly evolving new industries.

EMPLOYMENT GROWTH

Employment measures the number of wage and salary jobs in a metropolitan economy. Two factors account the differences among employment growth rates in metropolitan areas. First, industries grow at different rates. A metropolitan area dominated by slow-growing industries will typically see slower job growth than a metropolitan area with more fast-growing industries. "Change due to industry factors" captures the change in employment that would have occurred in a metropolitan area if the area's industries had grown at their respective national rates (minus the overall national growth rate). Second, metropolitan areas have different internal competitive strengths. For example, the same industry can add jobs in one metropolitan area, but not another; or a new industry can spring up in one metropolitan area, but not another. "Change due to local factors" captures how much these local competitive factors have hindered or accelerated employment growth. *(Source: Brookings analysis of Moody's Analytics data.)*

Most Michigan metros saw weak employment growth compared to their counterparts

Change in employment by component, 1980–2009



Most of Michigan's metro areas grew more slowly than the metro average because they inherited an industrial composition disproportionately composed of slower-growing industries and because, on average, those industries grew more slowly than the same industries did nationally. In Flint, for example, absent other factors, employment would have declined by 12.7 percent between 1980 and 2009 because nationally, the industries it specialized in actually shrank over those years. However, Flint lost jobs in those poor performing industries in which it specialized faster than other metros due to a deficit in the competitiveness of its existing local industries. In Detroit, employment would have grown by a modest 7.5 percent based on industry factors alone, a comparatively healthy pace. But a large deficit in local competitiveness, captured in the "local factors" measure, meant Detroit's employment grew by only 4.6 percent between 1980 and 2009. As the authors of one recent Brookings report put it, these industrial metros were placed on a slow horse and they rode it poorly. *(Source: Brookings analysis of Moody's Analytics data.)*

Local competitive factors held back employment growth in most Michigan metros

Employment change by component, 1980–2009

	Metropolitan Area	Employment, 2009	Change, 1980 to 2009	Change due to industry factors	Change due to local factors	Expected change absent local factors
	All Metro Areas	116,084,310	44.7%	2.7%	2.3%	42.4%
	100 Largest Metros	91,060,460	44.6%	4.8%	0.1%	44.5%
MI	**Lansing**	**218,900**	**19.1%**	**2.8%**	**-23.4%**	**42.5%**
MI	**Ann Arbor**	**193,560**	**30.1%**	**0.6%**	**-10.2%**	**40.3%**
PEER	Albany, NY	450,130	32.9%	10.3%	-17.2%	50.0%
PEER	Champaign, IL	112,800	19.4%	N/A	N/A	N/A
PEER	Muncie, IN	50,660	-1.0%	-2.9%	-37.9%	36.8%
ASP.	Madison, WI	350,290	76.9%	6.3%	30.9%	46.1%
ASP.	Lincoln, NE	175,540	63.6%	6.6%	15.0%	48.5%
ASP.	Olympia, WA	103,560	116.9%	6.5%	70.5%	46.4%

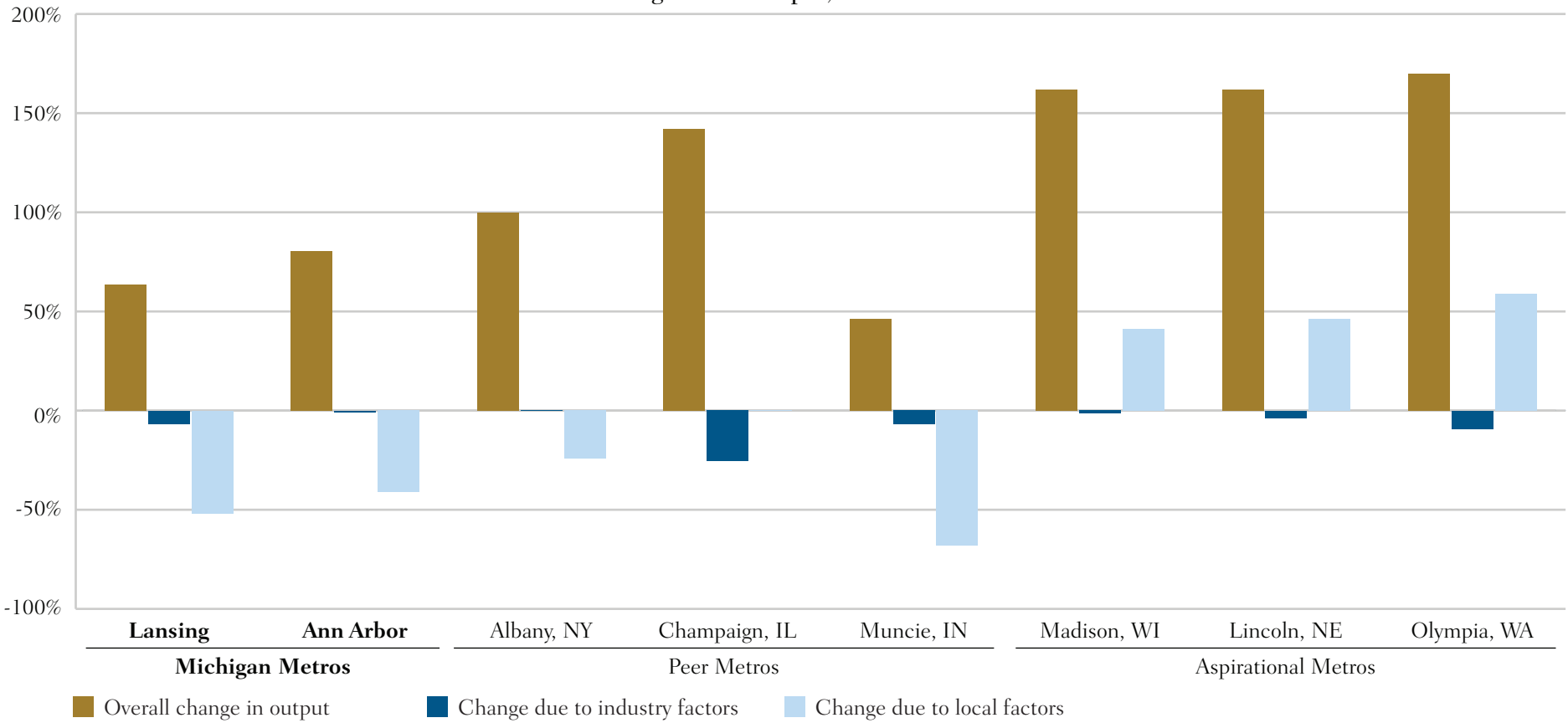
* These findings make use of shift-share analysis, a technique of regional economics. Shift-share analysis breaks change in employment down into three components: 1) a "national growth" component representing the change in employment that would have occurred in a metropolitan area if employment in all its industries had grown at the overall national employment growth rate; 2) an "industry share" or "industry factors" component representing the difference between the change in employment that would have occurred in the metropolitan area if all the area's industries had grown at their respective national rates and the national growth component; and 3) a "competitive shift" or "local factors" component representing the difference between the actual employment change and the sum of the national growth and industry share components. Results of a shift-share analysis are sensitive to the beginning and ending years of the analysis and to the level of industry aggregation chosen. We conduct all analysis at the NAICS three-digit level as modified by Moody's Analytics and our period of analysis is 1980–2009.

OUTPUT GROWTH

Output, or gross metropolitan product (GMP), is the total value of goods and services produced in a metropolitan area, providing a sense of the absolute size of the economy. Like employment, two factors account for the differences among output growth rates in metropolitan areas. First, industries grow at different rates. A metropolitan area dominated by slow-growing industries will typically see slower output growth than a metropolitan area with more fast-growing industries. "Change due to industry factors" captures the change in output that would have occurred in a metropolitan area if the area's industries had grown at their respective national rates (minus the overall national growth rate). Second, metropolitan areas have different internal competitive strengths. For example, the same industry can expand production in one metropolitan area, but not another; or a new industry can spring up in one metropolitan area, but not another. "Change due to local factors" captures how much these local competitive factors have hindered or accelerated output growth. *(Source: Brookings analysis of Moody's Analytics data.)*

Output in many Michigan metros grew more slowly than in peers

Change in real output, 1980–2009



OUTPUT GROWTH CONTINUED

As was the case with employment growth, output growth in Michigan metros trailed the nation's metropolitan average between 1980 and 2009. This was again due to a dependence on slower growing industries and a deficit in local competitiveness. Holland and Monroe were the only Michigan metros that did beat the U.S. metropolitan average, and this was due to their superior local competitiveness. Holland's local competitiveness factors added 76 points to its growth rate. In Grand Rapids, where both industry and local factors were a modest drag on metropolitan output growth, local output grew faster than in other Michigan metros largely due to the expansion of the national economy. *(Source: Brookings analysis of Moody's Analytics data.)*

Few of Michigan's metropolitan areas outperformed the U.S. metro average

Real output change by component, 1980–2009

	Metropolitan Area	Output, 2009 (in $1,000,000s)	Real change, 1980 to 2009	Change due to industry factors	Change due to local factors	Expected change absent local factors
	All Metro Areas	11,315,970	126.0%	-1.7%	3.6%	122.4%
	100 Largest Metros	9,219,093	128.1%	1.3%	2.5%	125.6%
MI	**Lansing**	**18,720**	**63.7%**	**-6.7%**	**-51.9%**	**115.5%**
MI	**Ann Arbor**	**16,350**	**80.4%**	**-0.8%**	**-41.1%**	**121.6%**
PEER	Albany, NY	44,276	99.8%	-0.3%	-24.1%	123.9%
PEER	Champaign, IL	10,488	141.9%	-25.4%	0.2%	141.6%
PEER	Muncie, IN	3,494	46.2%	-6.8%	-68.2%	114.4%
ASP.	Madison, WI	30,379	161.6%	-1.4%	41.1%	120.5%
ASP.	Lincoln, NE	13,750	162.0%	-3.7%	46.0%	116.0%
ASP.	Olympia, WA	8,632	169.9%	-9.2%	59.0%	111.0%

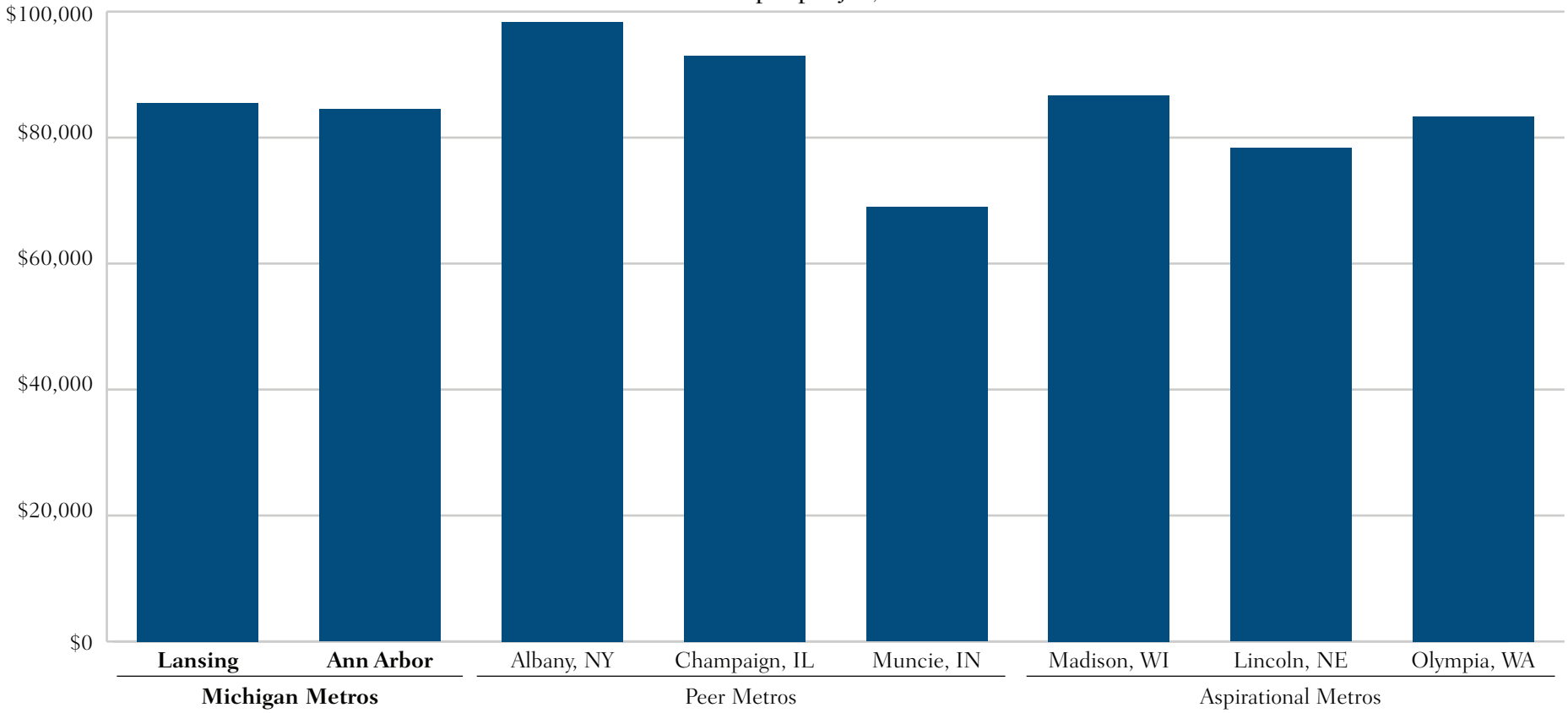
* These findings make use of shift-share analysis, a technique of regional economics. Shift-share analysis breaks change in employment down into three components: 1) a "national growth" component representing the change in output that would have occurred in a metropolitan area if employment in all its industries had grown at the overall national output growth rate; 2) an "industry share" or "industry factors" component representing the difference between the change in output that would have occurred in the metropolitan area if all the area's industries had grown at their respective national rates and the national growth component; and 3) a "competitive shift" or "local factors" component representing the difference between the actual output change and the sum of the national growth and industry share components. Results of a shift-share analysis are sensitive to the beginning and ending years of the analysis and to the level of industry aggregation chosen. We conduct all analysis at the NAICS three-digit level as modified by Moody's Analytics and our period of analysis is 1980–2009.

PRODUCTIVITY

Paul Krugman famously described productivity growth as "the single most important factor affecting our well-being." It is the foundation of economic development: recombining inputs, leveraging innovations, and growing the stock of knowledge to produce more value out of scarce resources, increasing living standards. Gross metropolitan product (GMP) per job is one of the most basic measures of productivity. Overall change in GMP per job within a metropolitan area reflects two changes. First, it reflects the aggregate increase in GMP per job within the metropolitan economy. Second, it reflects changes in the number of jobs in individual industries. The productivity of the workforce in most Michigan metros rivals or exceeds that of their peers. *(Source: Brookings analysis of Moody's Analytics data.)*

Michigan metros tend to be more productive than their counterparts

Annual output per job, 2009

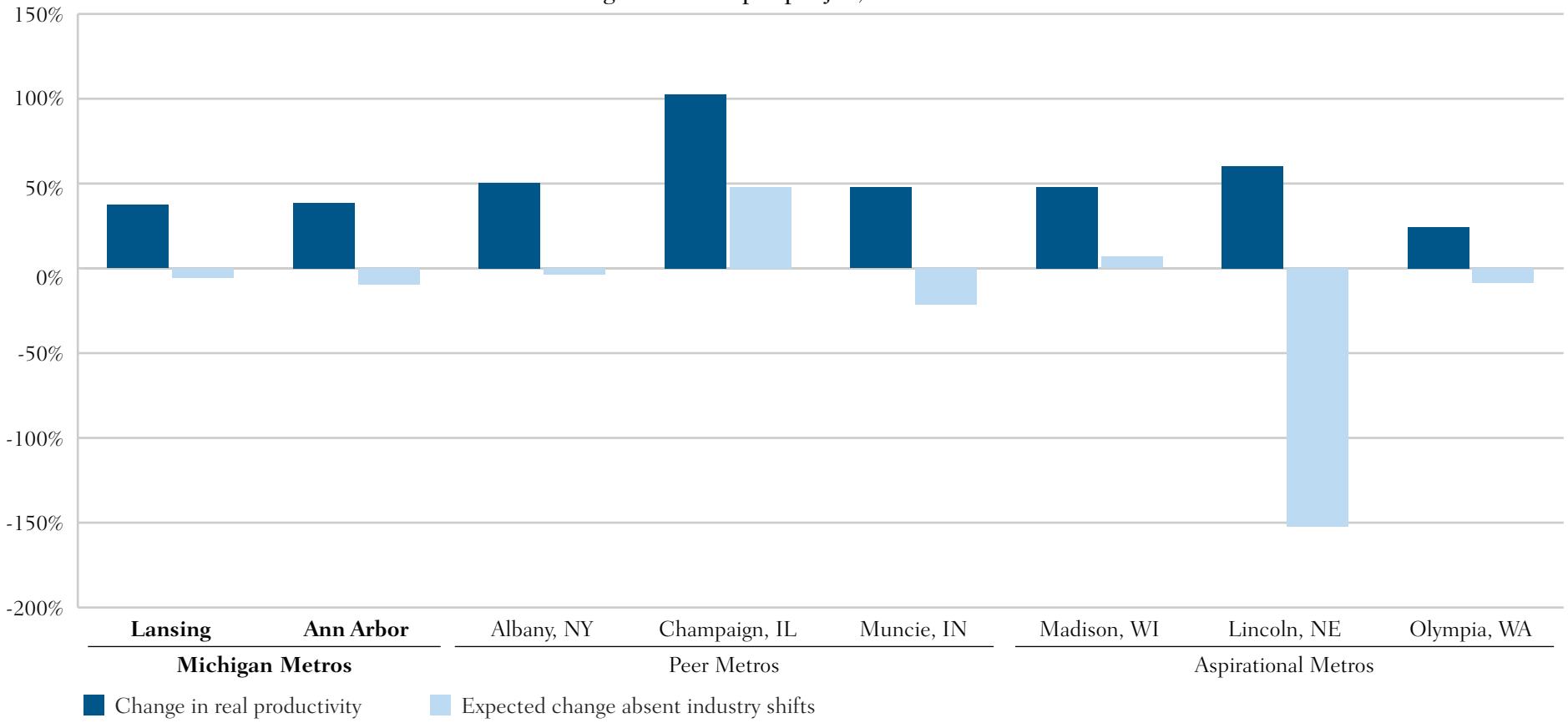


Because productivity varies among industries, shifts out of more productive industries and into less productive ones will lead to lower aggregate productivity growth. Productivity change due to industry shifts is shown below. If overall change is less than "expected change absent industry shifts," this indicates that a metropolitan economy has shifted jobs from more productive industries to less productive industries.

In Michigan's larger metropolitan areas, like Detroit and Grand Rapids, shifts out of more productive work and into less productive work, like food service and health care, have led to less real productivity growth than the growth that would have been possible had the industrial composition of those metros' economies remained the same from 1980 to 2009. In most small Michigan metros, the opposite was true: productivity would have declined had those metros not shifted their employment into more productive industries, like manufacturing or utilities. In both large and small Michigan metros, productivity growth was often more modest than it was for peer metros. (*Source: Brookings analysis of Moody's Analytics data.*)

Most Michigan metros and their peers experienced slower productivity growth due to industry shifts

Change in real output per job, 1980–2009

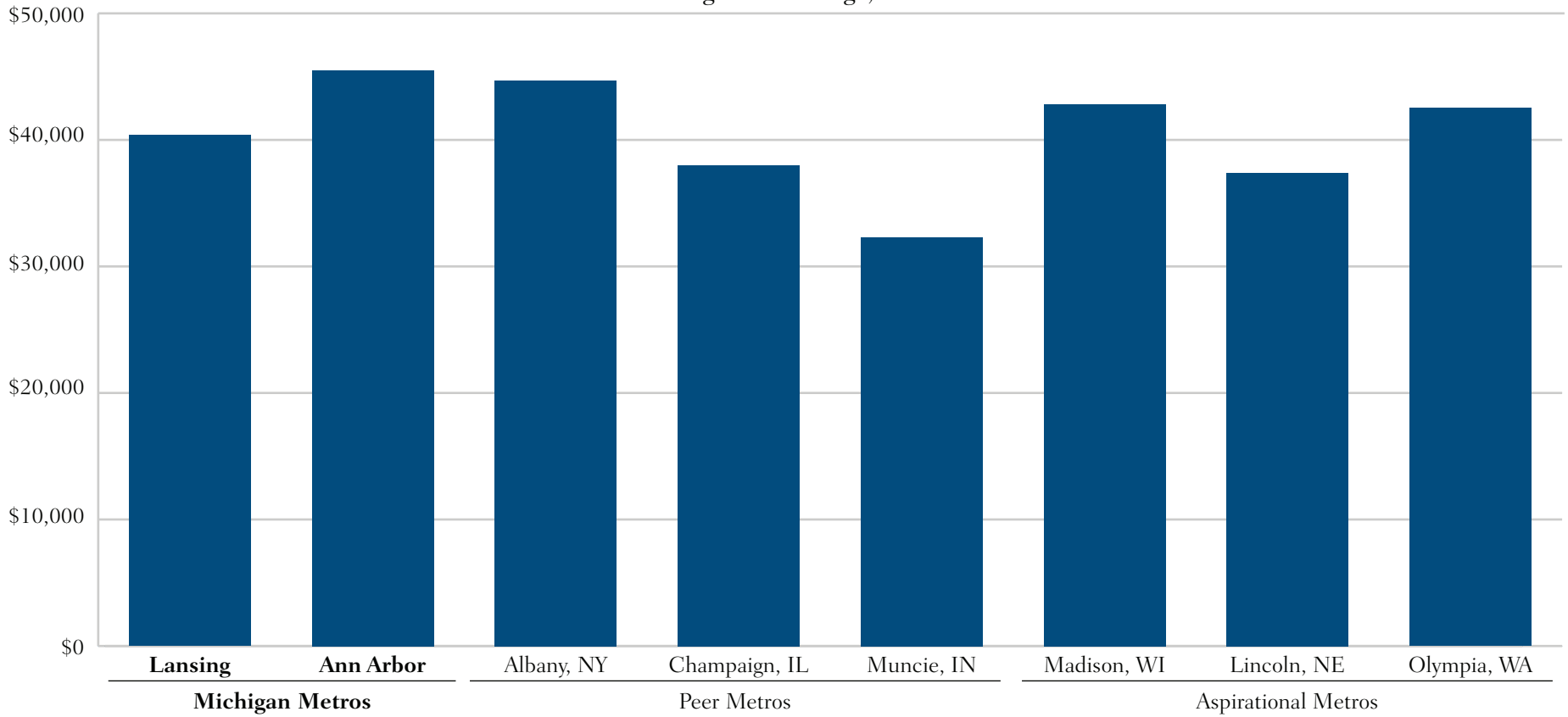


WAGES

Average wages account for the total real dollar amount of salary, wages, and tips paid per employee annually. Wages and average wage growth measure the ability of a metropolitan economy to secure a high and rising standard of living for its residents. Wages reflect back on worker productivity and the market value of their skills. High wages relative to costs of living also attract talent. Wage levels in Michigan's metros tend to rival or exceed those in their peers, reflecting the premium that higher worker productivity earns, and the higher-value added industries in which many of Michigan's metros specialize. *(Source: Brookings analysis of Moody's Analytics data.)*

Wages in Michigan's metros rival peers and exceed those in many aspirational metros

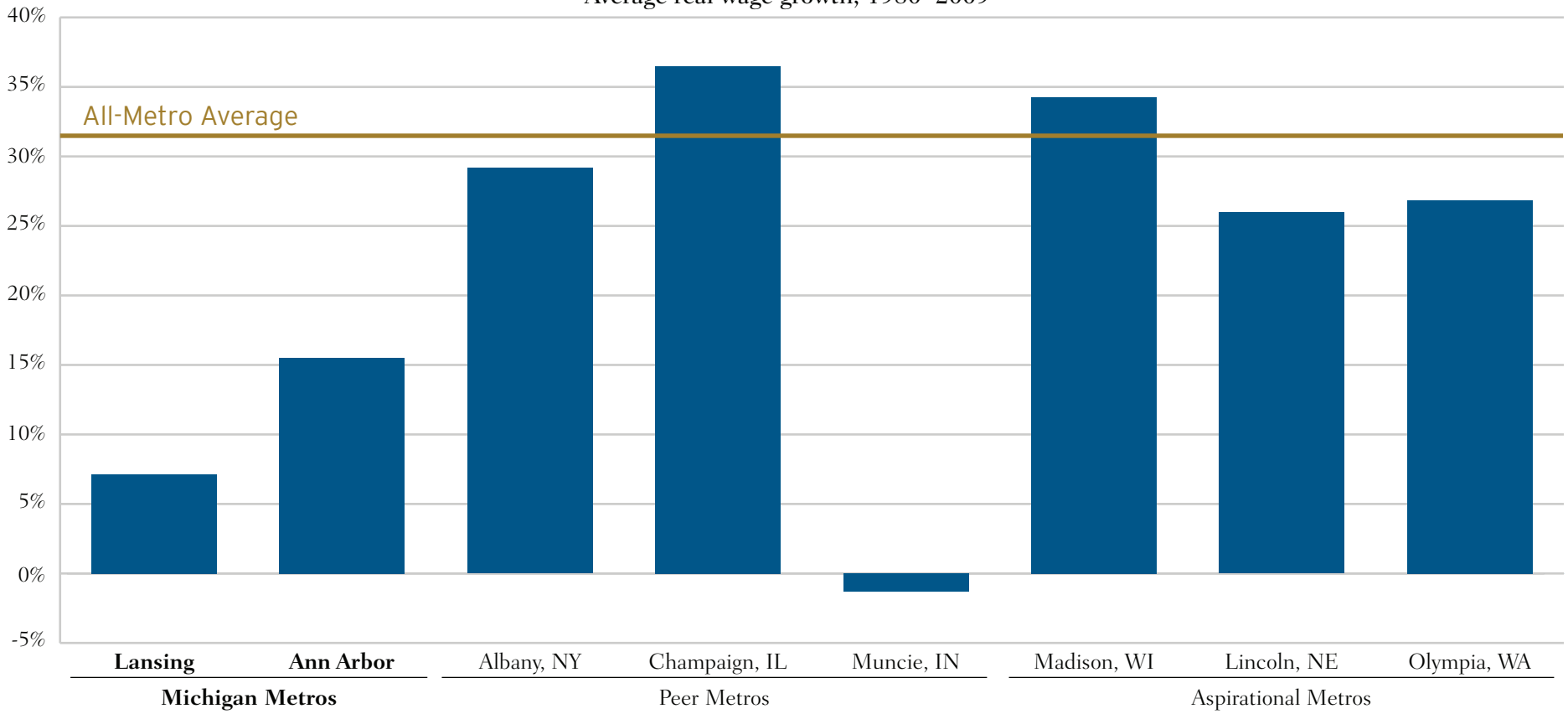
Average annual wage, 2009



Wage growth in Michigan metros did not keep pace with the U.S. metropolitan average or with the growth seen in peer metropolitan areas over the 30-year period from 1980 to 2009. In fact, in many of Michigan's metropolitan areas, real wages actually declined over the period. In Flint, Saginaw, Muskegon, Battle Creek, and Bay City, workers in 2009 were paid, on average, less in inflation-adjusted dollars than they were in 1980, reflecting a decline in the quality of jobs available to most workers and a static or declining quality of life. This was not the case for the majority of these metros' peers. *(Source: Brookings analysis of Moody's Analytics data.)*

Wage growth in Michigan's metros has not kept pace with other metros

Average real wage growth, 1980–2009



INDUSTRY SPECIALIZATION

Some metropolitan areas are more specialized than others, but all earn their income from two sources: traded activities with other regions, such as selling machinery, raw materials, or financial services, and non-traded activities or exchange within the region, such as local government, daycares, and dry-cleaning. Traded sectors chiefly drive growth and development, although important competitive advantages can stem from unique, originally regional activities. Presented below are the three industry sectors (three-digit NAICS-code level) in which each metropolitan area is most specialized. The degree of specialization is measured as the local industry's share of employment relative to that industry's share of national employment. For definitions of industry sectors visit: http://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2007. *(Source: Brookings analysis of Moody's Analytics data.)*

Michigan's metros tend to specialize in manufacturing and advanced services

Top three industry specializations by metro

Metropolitan Area	Industry name (NAICS code)	Industry employment as a share of U.S. average
Lansing, MI	**State Government***	**489.8%**
	Transportation Equipment Manufacturing (336)	**259.6%**
	Funds (525)	**237.9%**
Ann Arbor, MI	**State Government***	**731.3%**
	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works) (533)	**350.1%**
	Printing and Related Support Activities (323)	**276.0%**
Albany, NY	State Government*	305.5%
	Educational Services (611)	234.4%
	Funds (525)	208.2%
Champaign, IL	State Government*	614.7%
	Plastics and Rubber Products Manufacturing (326)	218.5%
	Publishing Industries (except Internet) (511)	183.6%
Muncie, IN	State Government*	414.0%
	Museums (712)	275.2%
	Monetary Authorities-Central Bank (521)	248.2%
Madison, WI	State Government*	371.7%
	Nonstore Retailers (454)	340.5%
	Insurance Carriers and Related Activities (524)	265.5%
Lincoln, NE	Rail Transportation (482)	582.0%
	Truck Transportation (484)	352.9%
	State Government*	306.7%
Olympia, WA	State Government*	623.2%
	Private Household Workers*	256.7%
	Nonmetallic Mineral Product Manufacturing (327)	208.8%

* These industries do have NAICS codes, but are modified here by Moody's Analytics and so are not comparable to to NAICS industries.

ENTREPRENEURSHIP

The metric presented below measures the number of new businesses established in a year relative to the size of the regional economy and is meant to capture the presence of high-impact entrepreneurship. High-impact firms or "gazelles" account for the most lasting impact on regional employment and economic growth. These firms exist in all industries and generally continue to grow in recessions. They are generally younger and smaller than other firms in an economy, but are not necessarily considered start-ups (which is all we are able to measure here). Mid-size establishments are defined by the Small Business Administration as those employing 20-499 persons. *(Source: Bureau of Economic Analysis Local Area Personal Income and Employment.)*

Some Michigan metros trail their counterparts in attracting new business

Births of mid-size*, or "high impact," start-ups, 2006

	Metropolitan Area	Mid-size establishment births per 10,000 employees	Mid-size establishment births as a percentage of total establishments	Mid-size establishment births as a percentage of total establishment births
	United States	N/A	N/A	N/A
	All Metro Areas	10.4	1.85%	13.7%
	100 Largest Metros	9.9	1.10%	13.1%
MI	**Detroit, MI**	**8.5**	**1.65%**	**13.7%**
MI	**Grand Rapids, MI**	**8.9**	**1.84%**	**17.3%**
PEER	St. Louis, MO-IL	11.0	2.12%	16.9%
PEER	Cleveland, OH	8.1	1.55%	14.4%
PEER	Milwaukee, WI	7.7	1.66%	14.9%
ASP.	Indianapolis, IN	11.0	2.27%	16.5%
ASP.	Nashville, TN	11.4	2.37%	15.8%
ASP.	Pittsburgh, PA	8.2	1.54%	15.1%

* Mid-size start-ups are defined as new establishments founded in the preceding 12 months with between 20 and 499 employees.

The metrics presented below capture some harder to define, more dynamic elements of the regional economy, such as the rate at which resources are redeployed and how flexible the economy might be. The measure of firm births and deaths is the most influential factor affecting employment growth and is also correlated with output growth, per capita income growth, and productivity, and therefore highly correlated with economic growth in general. A higher rate of establishment births and deaths relative to the total number of establishments is indicative of a more rapidly-changing and therefore a more dynamic economy. A ratio of establishment births to deaths that is above 1.0 indicates more establishments are entering the economy than exiting it. Note that firm contractions and expansions are weighted equally "positive" in the first metric below and should be considered together with the ratio of births and deaths to get one dimension of overall business expansion or contraction. (*Source: Small Business Administration.*)

Michigan metros experienced less business churning than the nation as a whole

Birth and death dynamics in business establishments, 2007

	Metropolitan Area	Establishment births and deaths as a percentage of total establishments	Employment turnover from business churning as a percentage of total employment	Ratio of establishment births to deaths
	United States	24.5%	11.6%	1.20
	All Metro Areas	24.7%	11.6%	1.21
	100 Largest Metros	25.5%	12.1%	1.20
MI	**Lansing**	**21.3%**	**9.9%**	**1.12**
MI	**Ann Arbor**	**22.8%**	**8.6%**	**1.04**
PEER	Albany, NY	20.8%	8.9%	1.14
PEER	Champaign, IL	20.0%	8.9%	1.22
PEER	Muncie, IN	16.8%	8.5%	1.07
ASP.	Madison, WI	21.7%	9.5%	1.08
ASP.	Lincoln, NE	20.7%	9.9%	1.25
ASP.	Olympia, WA	27.6%	12.7%	1.27

The Small Business Administration (SBA) provides loans to small businesses through a number of lending programs. Two of its biggest, the 7(a) and 504 programs account for a large portion of the SBA's total lending. The 7(a) loan program provides loan guarantees for general business purposes through commercial lending institutions. The 504 loan program offers longer-term financing for the acquisition of fixed assets, such as equipment or real estate. Businesses in Michigan's metros do not tend to take as great an advantage of SBA financing as many of their peers. According to SRI international, the state is one of the largest recipients in the number of SBA loan guarantees. However, Michigan metros tend to receive relatively less financing when the size of their economies are taken into account. *(Source: Small Business Administration.)*

Metros Lansing and Ann Arbor received less SBA funding than their aspirational counterparts

Value of SBA-insured loans to businesses, 2010

	Metropolitan Area	Number of SBA loans received by businesses	Total value of SBA loans per $1,000 of GMP	Total value of 7(a) SBA loans per $1,000 of GMP	Total value of 504 SBA loans per $1,000 of GMP
	United States	18,376	0.35	0.18	0.07
	All Metro Areas	15,486	0.40	0.20	0.08
	100 Largest Metros	12,179	0.39	0.15	0.06
MI	**Lansing**	**17**	**0.20**	**0.05**	**0.15**
MI	**Ann Arbor**	**17**	**0.31**	**0.04**	**0.26**
PEER	Albany, NY	45	0.12	0.01	0.11
PEER	Champaign, IL	5	0.17	0.00	0.17
PEER	Muncie, IN	8	0.15	0.00	0.15
ASP.	Madison, WI	54	0.28	0.05	0.23
ASP.	Lincoln, NE	29	0.33	0.05	0.28
ASP.	Olympia, WA	21	0.29	0.09	0.20

SOCIETY

Michigan's residents are the drivers – and the beneficiaries – of the next economy that is taking root in its urban and metropolitan areas. State and metropolitan leaders must respond to the opportunities presented by new immigrants and a pipeline of college graduates, and the challenges presented by gaps in educational attainment, poverty and income inequality.

As Brookings' *State of Metropolitan America* report, from which most of the data in this section is taken, states bluntly, "We now stand on the precipice of a 'decade of reckoning.'" Even as states and metropolitan areas dig out from the economic roller-coaster of the 2000s, they also have to address closely related demographic issues such as aging populations, unfilled labor market needs, the challenges of low-skilled workers, and a saddening legacy of mistrust and friction between people of different backgrounds and races.

Most of Michigan's metropolitan areas fit the profile of "Industrial Cores" as defined by the *State of Metropolitan America* report: "Industrial cores are in some ways the most demographically disadvantaged of the metropolitan types… Their populations are slower-growing, less diverse, and less educated than national averages, and significantly older than the large metropolitan average. A remaining industrial base combined with lack of diverse in-migration to these metro areas has kept educational and wage inequalities in check."

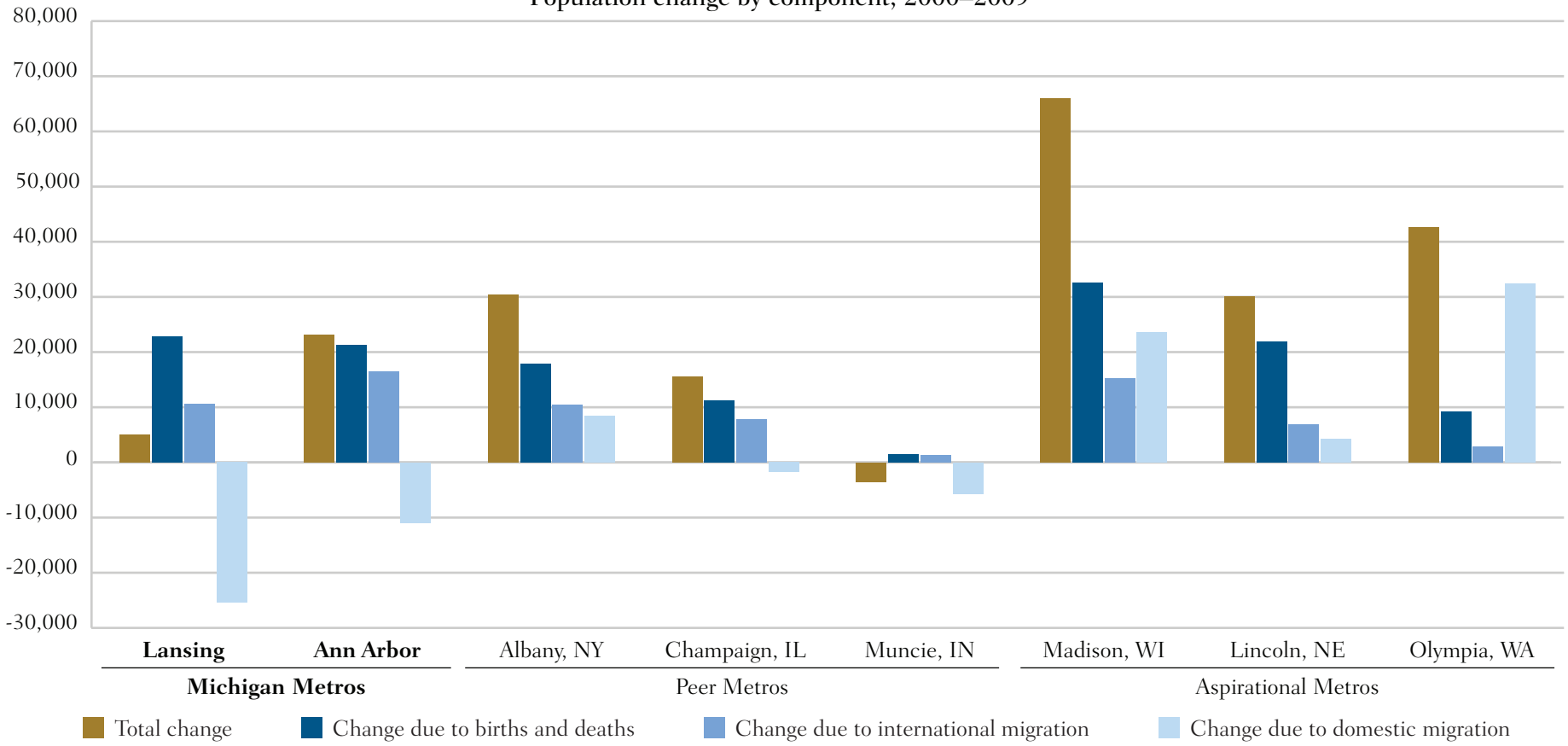
The task ahead for Michiganders in the public, private, and philanthropic sectors, and across cities and suburbs, is to overcome that demographic disadvantage. The people of Michigan helped invent the 20th century American dream. What is their contribution to the 21st century?

POPULATION GROWTH

Population growth does not by itself define a metropolitan area's health. Nevertheless, the fact that people "vote with their feet" makes population change an indicator of a place's opportunities and amenities. In general, large U.S. metropolitan areas grew faster than other places during the 2000s, and the decades-long shift of population to the West and South from the Northeast and Michigan and its Midwestern neighbors continued. Two key trends at the end of the decade – the housing crisis and the difficulties of U.S. automakers – combined to accelerate population loss in some metropolitan areas, such as Detroit. But housing's uneven recovery may slow the movement of people from the industrial heartland to the Sunbelt. Six of Michigan's metropolitan areas, including Detroit, Flint, and Saginaw, lost residents during the 2000s, while eight, including Lansing, Ann Arbor, Grand Rapids, and Holland grew. *(Source: Census Population Estimates.)*

Michigan metros lagged behind their aspirational counterparts in population growth

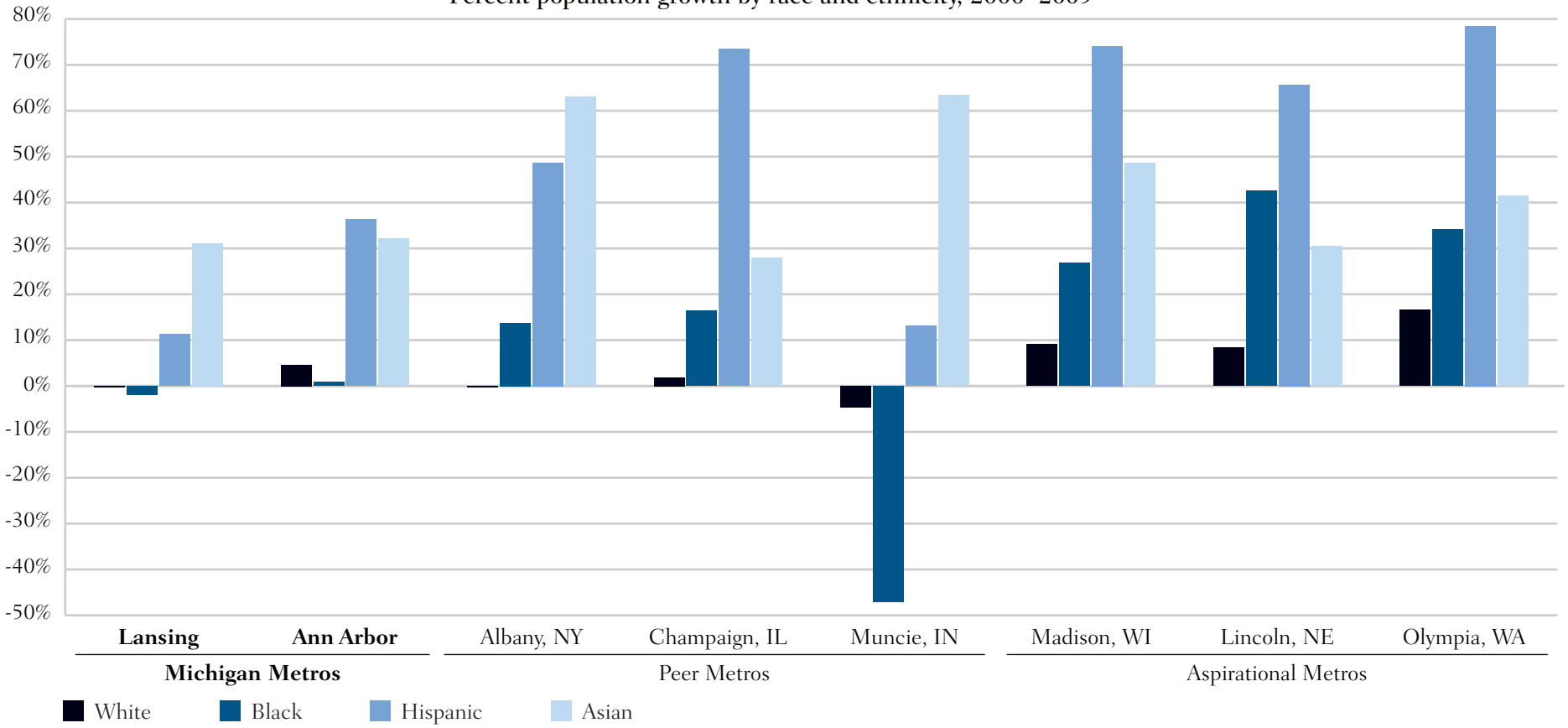
Population change by component, 2000–2009



Racial and ethnic minorities accounted for over 80 percent of U.S. population growth from 2000 to 2009, while the growth among whites was much slower. The dispersal of Hispanic and Asian residents away from their traditional immigration gateways drove large gains in Hispanic and Asian populations in parts of the Southeast and the Midwest (for example, Nashville, Indianapolis, Champagne, Knoxville, and Danville). Michigan's metros tended to see more modest percentage gains in Hispanic and Asian residents, and very small gains or outright losses in white population. Most Michigan metros lost black residents. *(Sources: Census 2000; American Community Survey 1-year Estimates, 2009.)*

Minorities accounted for much of the population growth in Michigan's metros

Percent population growth by race and ethnicity, 2000–2009

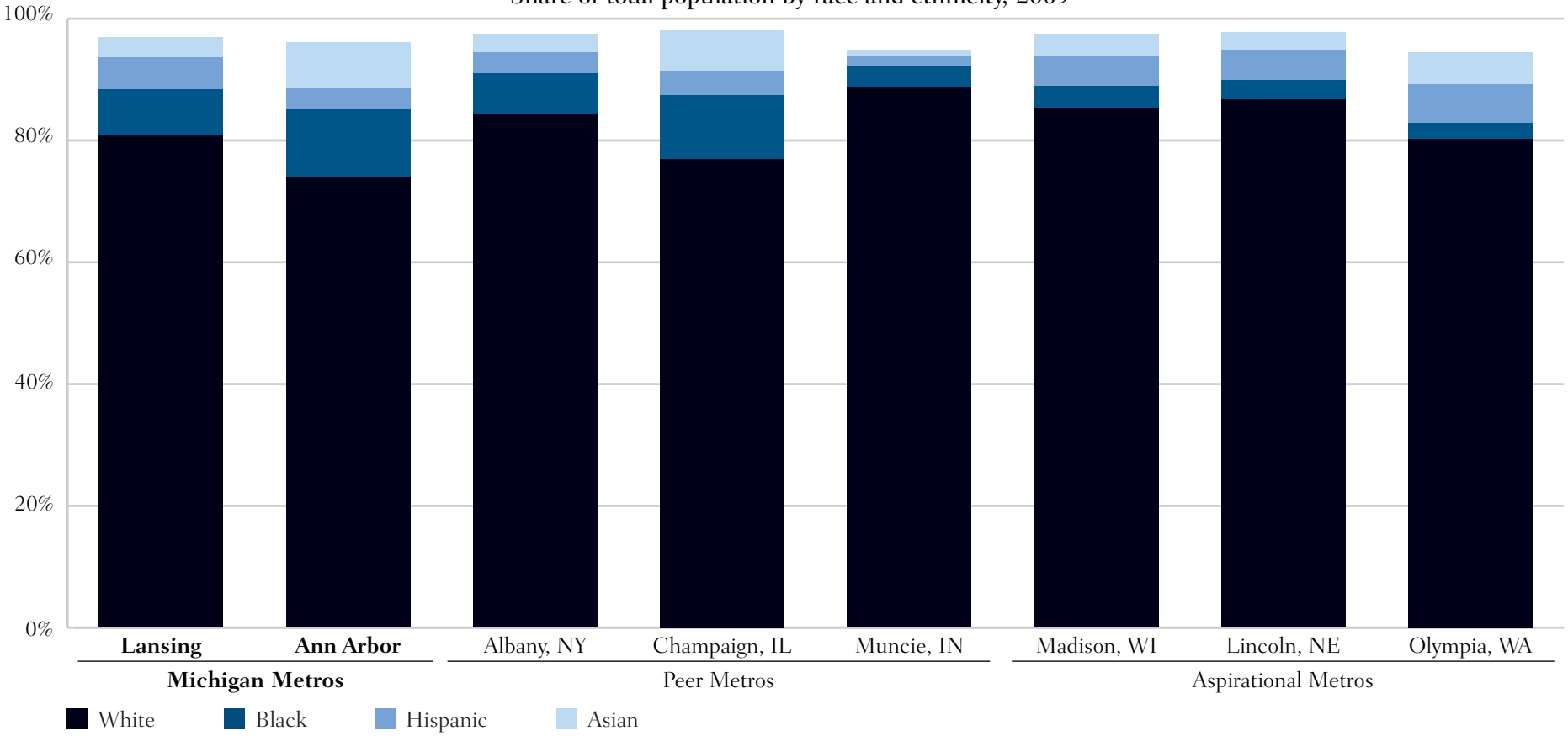


RACE AND ETHNICITY

Older industrial metropolitan areas, including many of Michigan's metropolitan areas and their peer metropolitan areas, tend to be less racially diverse than fast-growing parts of the country. Immigrants, particularly Latin American and Asian immigrants, have historically tended to concentrate in a few "gateway" metropolitan areas such as Los Angeles, New York, and Chicago, although there was some movement away from these traditional hubs in the 2000s. *(Sources: Census 2000; American Community Survey 1-year Estimates, 2009.)*

Many of Michigan's metros are more diverse than their peers

Share of total population by race and ethnicity, 2009



IMMIGRATION

High levels of immigration during the 2000s increased the nation's foreign-born population to 38.5 million, or about one in eight Americans, as of 2009. This foreign-born population concentrates disproportionately in large US metropolitan areas – 85 percent live in the largest 100 metros (a category that includes Detroit and Grand Rapids). Indeed, the Detroit metropolitan area has twice as many foreign-born residents as the rest of Michigan's metropolitan areas combined. Industrial metropolitan areas of the Midwest were very attractive to European immigrants in the early 20th century, when German, Polish, Dutch, and Irish workers helped fill factories and build communities. In recent decades both the origins and destinations of immigrants have changed, with the vast majority (80 percent) coming from Asia, Mexico, Latin America and the Caribbean, and settling in Sunbelt and Southeast metropolitan areas. *(Sources: Census 2000; American Community Survey 1-year Estimates, 2009.)*

Michigan's smaller metros generally experienced lower shares of immigration compared to peers

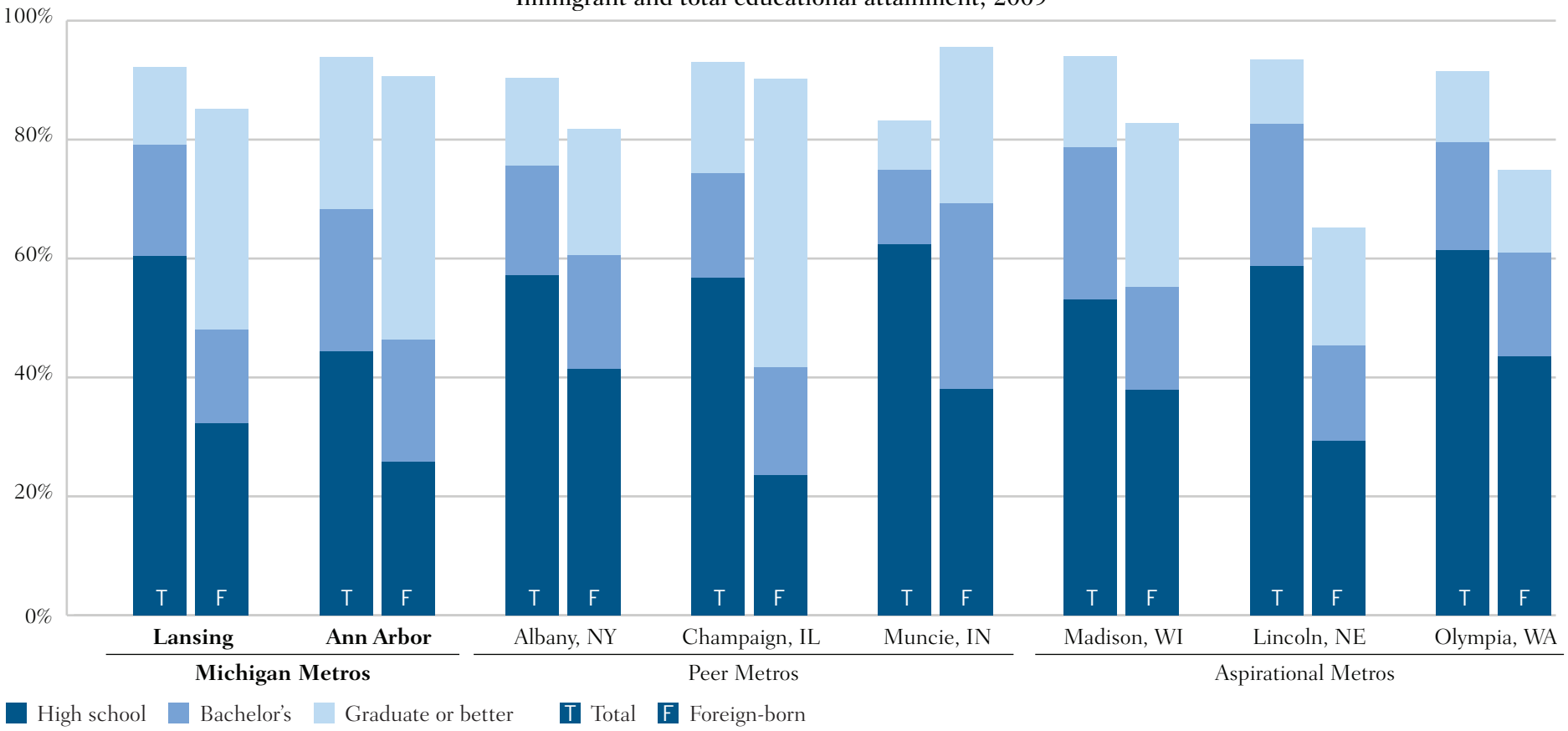
Population and population growth among immigrants

	Metropolitan Area	Total foreign born population, 2009	Percent of population that is foreign born, 2009	Change in foreign born population, 2000 to 2009
	United States	38,517,234	12.5%	23.8%
	All Metro Areas	36,689,513	14.3%	23.6%
	100 Largest Metros	32,869,854	16.3%	23.0%
MI	**Lansing**	**25,342**	**5.6%**	**23.5%**
MI	**Ann Arbor**	**39,950**	**11.5%**	**20.5%**
PEER	Albany, NY	59,321	6.9%	49.5%
PEER	Champaign, IL	18,354	8.2%	25.4%
PEER	Muncie, IN	2,051	1.8%	16.9%
ASP.	Madison, WI	35,673	6.3%	29.2%
ASP.	Lincoln, NE	18,025	6.1%	30.1%
ASP.	Olympia, WA	15,318	6.1%	20.3%

According to a recent Brookings paper by Matthew Hall, Audrey Singer, and others, "The share of working-age immigrants in the United States who have a bachelor's degree has risen considerably since 1980, and now exceeds the share without a high school diploma." This rise in immigrant educational levels was pronounced in the last decade because of labor market shifts that created more demand for high-skilled workers regardless of where they were born, and because of the rise in international students. Detroit, according to Hall and Singer, has 144 college-educated immigrants for every 100 immigrants without a high school diploma. Describing metropolitan areas like Detroit, Hall and Singer write, "Immigrants in these metropolitan areas tilt toward high-skill because they blend earlier arriving cohorts who have had time to complete higher education with newcomers entering who can fit into the labor market because of their high educational attainment. Several of the cities in these metropolitan areas also campaign to attract and retain immigrants, signaling appreciation for the small number of high-skilled immigrants they do have." *(Source: American Community Survey 1-year Estimates, 2009.)*

Immigrants tend to be higher-skilled in many Michigan metros than in peer metros

Immigrant and total educational attainment, 2009

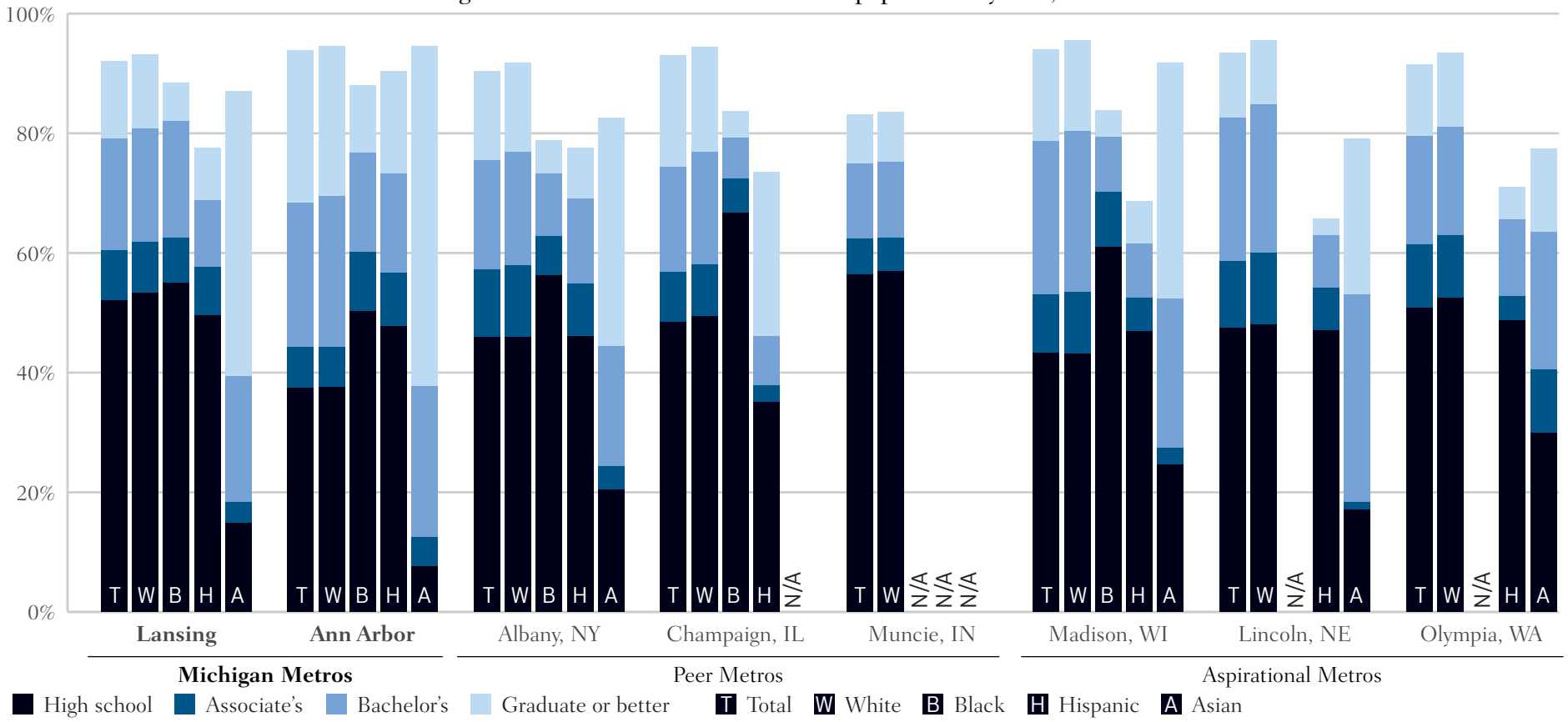


EDUCATIONAL ATTAINMENT BY RACE

In an analysis of educational attainment among different racial groups, The *State of Metropolitan America* report identifies some trends that challenge metropolitan areas like many of those in Michigan. First, among the largest U.S. metropolitan areas, "[those] with higher levels of college degree attainment in the first place have tended to make greater gains than those starting out with lower levels." Many Michigan metropolitan areas started with low levels of educational attainment because their economies once offered solidly middle-class jobs to workers with only a high school diploma. This was once a blessing, but now it is a challenge. Second, white and Asian adults far outpace black and Hispanic adults in terms of college degree attainment across the country, but those differences tend to be especially pronounced, for blacks, in manufacturing areas in the Midwest (and South). These disparities in educational attainment are reflected in disparities in employment rates. College-educated workers have faced a much more hospitable labor market than those with only a high school diploma, even before the recession. *(Source: American Community Survey 1-year Estimates, 2009.)*

Michigan metros' achievement gap is wide but not as severe as in many places

Highest educational attainment level of population by race, 2009

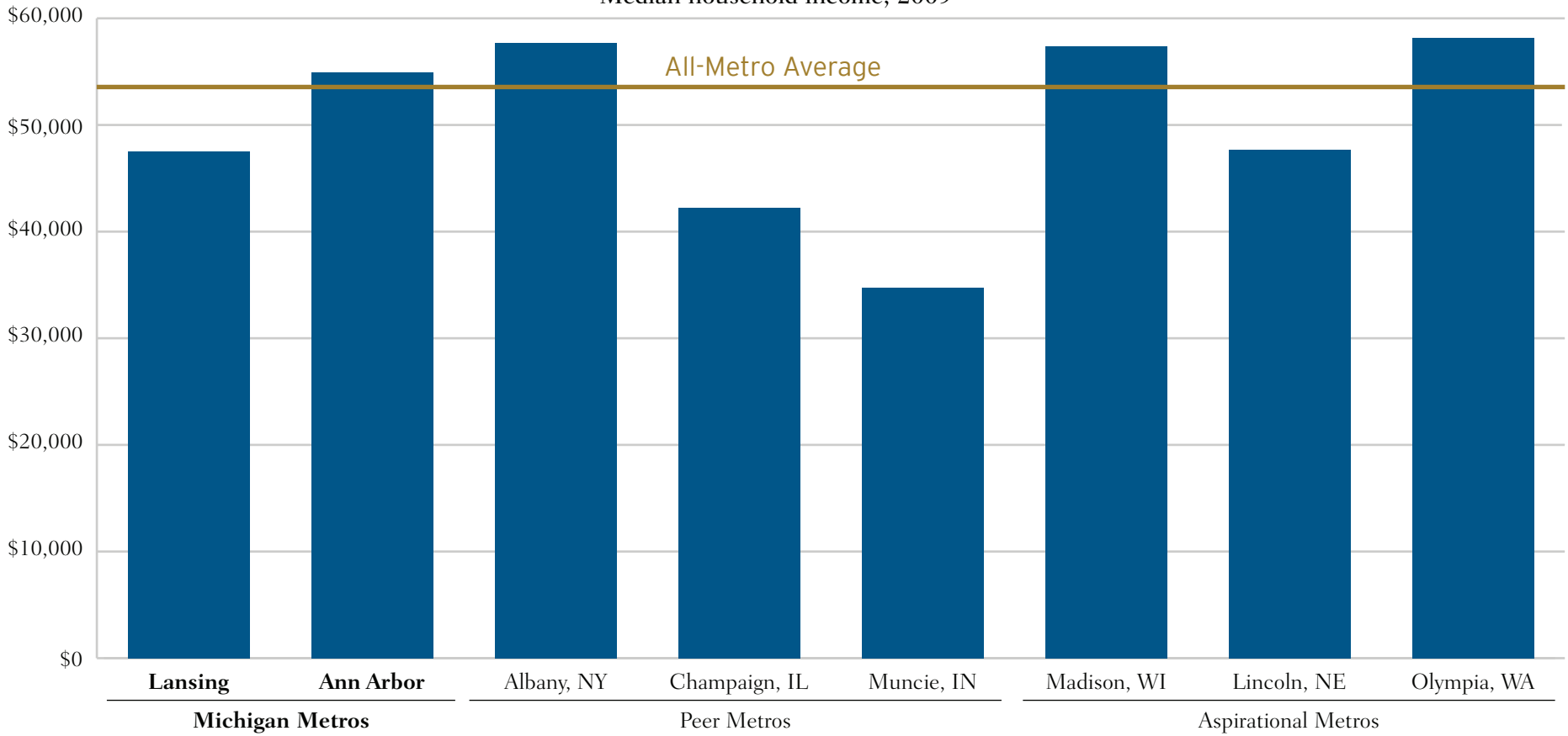


HOUSEHOLD INCOME

Income and poverty levels reflect the ability of residents to provide for themselves and their families, their capacity to support neighborhood businesses, and their prospects for building assets for the future. A city that is able to attract and retain a mix of household incomes may be well positioned to offer high-quality public services that meet the demands of its residents and workers. High levels of poverty—especially concentrated poverty—among residents, on the other hand, may constrain the city's ability to provide good schools, safe streets, and affordable neighborhoods of choice for families at all income levels.

Despite high wages, Michigan metros' household income is often lower than the average

Median household income, 2009

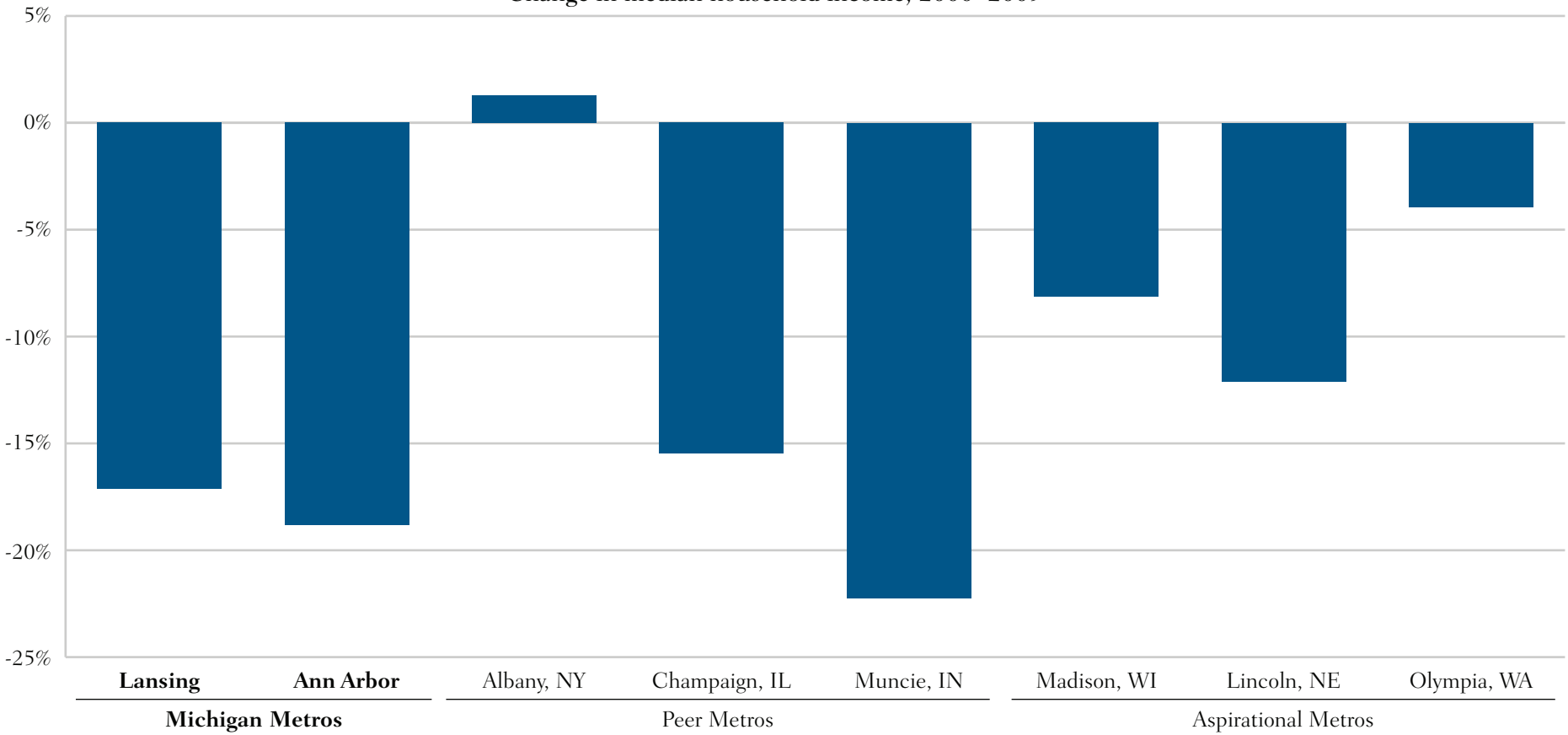


HOUSEHOLD INCOME CONTINUED

Even before the Great Recession, median household income was falling in the United States, and the relative size of the middle-class was shrinking. Michigan's metropolitan areas saw much greater declines in median household income than the U.S. as a whole between 2000 and 2009, and the major racial and ethnic groups in Michigan's metropolitan areas lost a greater percentage in terms of median income than corresponding racial and ethnic groups in the nation at large. *(Sources: Census 2000; American Community Survey 1-year Estimates, 2009.)*

Real incomes fell faster in Michigan metros than in many of their peer metros

Change in median household income, 2000–2009

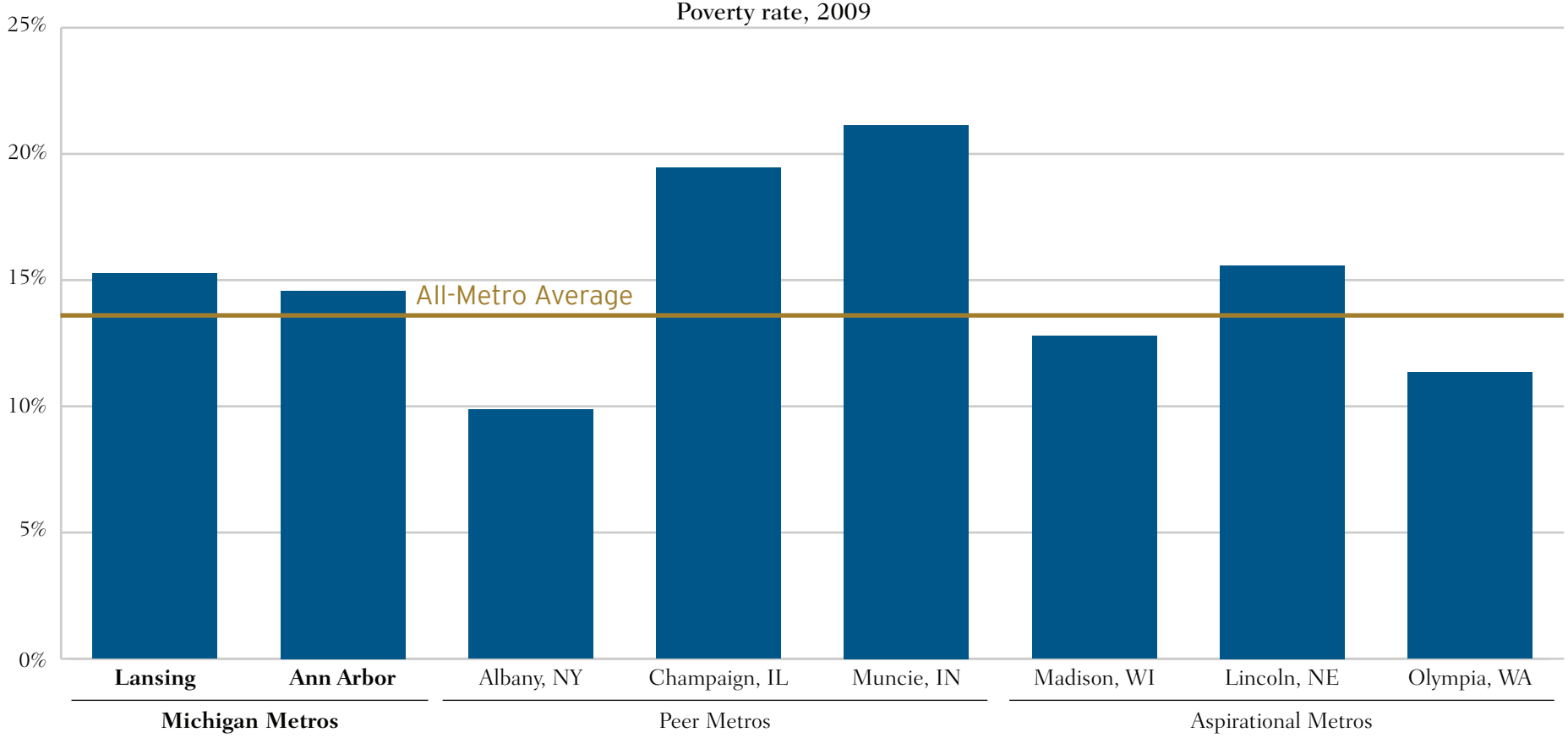


POVERTY

At the most basic level, poverty results in lower standards of living. However, there are other, less direct effects that are even more troubling. For instance, poverty is highly correlated with low levels of education, and can thus trap individuals and households for generations, lowering socio-economic mobility through lack of opportunity. The failure to combat the causes of poverty is also fiscally unsound; if those problems are not eradicated, state and local governments face smaller tax bases as well as higher outlays to support their populations. Poverty rates were well above the U.S. metro average in 2009 in all of Michigan's metros except Holland and Jackson. In metro Detroit and Grand Rapids, metros for which poverty by race data are available, poverty rates varied greatly between whites and minorities. In Grand rapids, over 40 percent of the black population was in poverty, a greater share than in any of that metro's peer or aspirational metros. *(Source: American Community Survey 1-year Estimates, 2009.)*

Poverty rates are higher and more disparate among Michigan metros than in many peer metros

Poverty rate, 2009

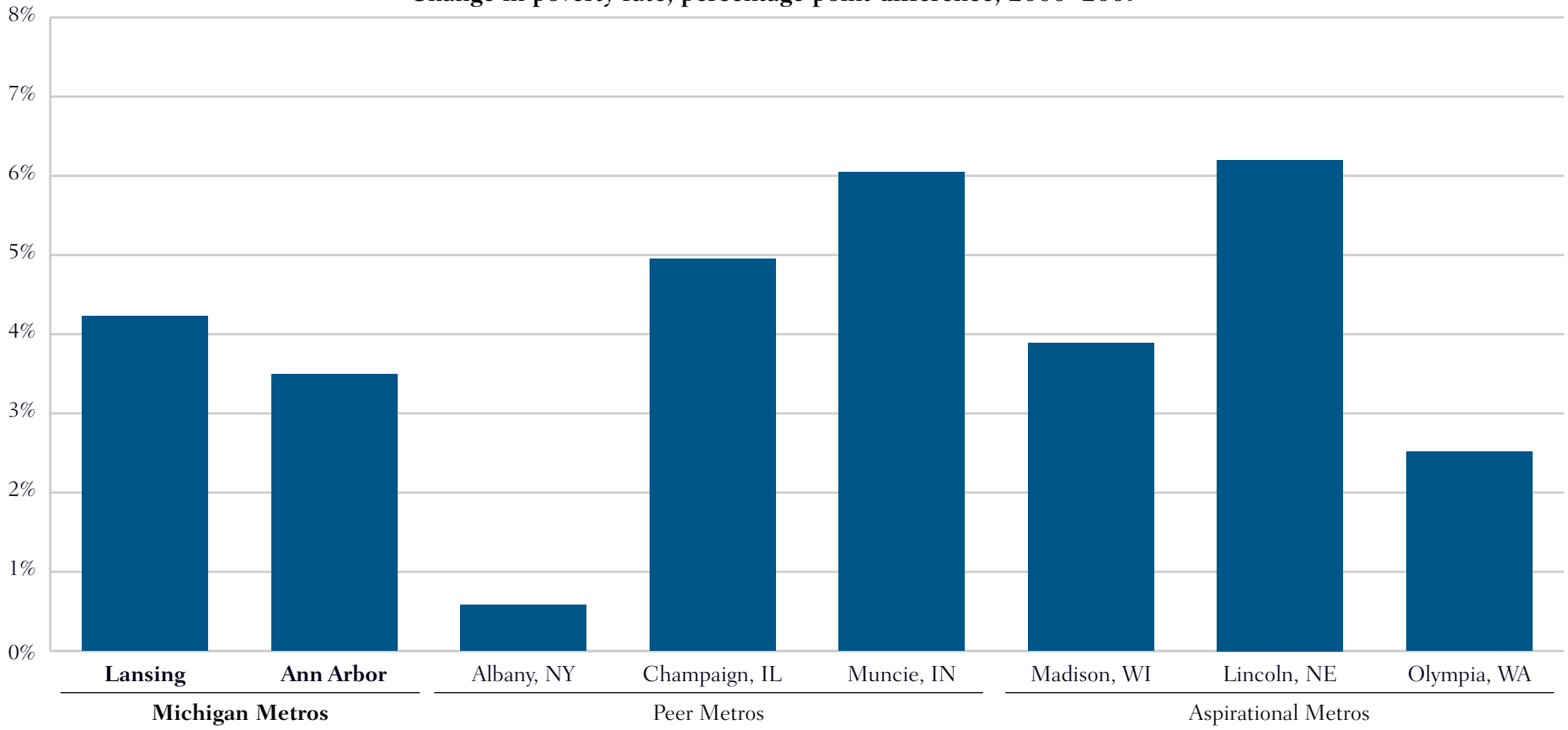


Rising poverty rates contribute greatly to the increasing divisions in American society that, as discussed on the previous page, have myriad harmful impacts. Trends in poverty's prevalence can also be a leading indicator of an area's economic future; as poor citizens generally receive less schooling and fewer opportunities, their earning potential is lower than their peers, as their adaptability to the new jobs of the next economy is limited. Thus, the increases seen in recent decades should be worrisome to policymakers in the long run as well as at present, as the growth and success of their economies can be put at risk.

As *State of Metropolitan America* says, "Many of the greatest increases in poverty were concentrated in Midwestern metro areas like Grand Rapids [among others]." Indeed, poverty increased in all of Michigan's metropolitan areas and at a faster pace than most of their peers in many cases. In metro Detroit and Grand Rapids, where poverty data are available by race, we see poverty increased most rapidly among minorities. The same was true of their peers, though rate increases tended to be less drastic in peer and aspirational metros for the most part. *(Source: American Community Survey 1-year Estimates, 2009.)*

Poverty increased rapidly in Michigan metros, especially among minority populations

Change in poverty rate, percentage point difference, 2000–2009

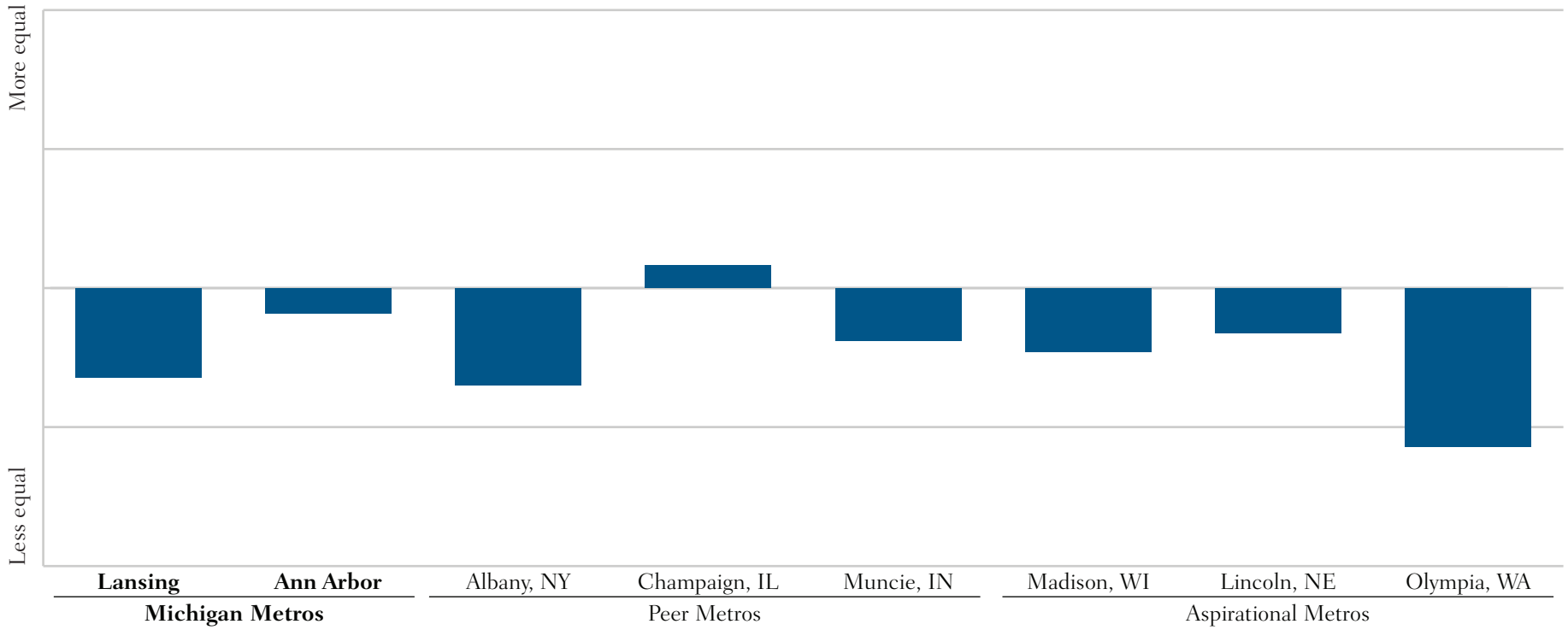


INCOME INEQUALITY

Income disparities across America have been rising for several decades. As Tara Watson writes in a recent Brookings report, "This growing gap between the incomes of the rich and the poor has raised concerns about inequitable distribution of the benefits of economic growth, declining social cohesion, growing disparities in political influence between the rich and the poor, declining public support for public services on which low and moderate-income people rely, inadequate investment in human capital, and declining affordability of housing for poor and middle-income households." *(Source: American Community Survey 1-year Estimates, 2009.)*

Economic outcomes are far less equal in Michigan metros than the U.S. metro average

Income inequality, as compared to national average, 2009



* A metros degree of income inequality is determined by its Gini coefficient as calculated by the U.S. Census Bureau. A Gini coefficient is the most commonly used measure of inequality and varies between 0, which indicates complete equality, and 1, which indicates complete inequality (meaning one person or household receives all the available income and all others have no income). What's shown above is the difference between a metro's Gini coefficient and the national Gini coefficient. If the metro's Gini coefficient is greater than the nation's, the difference is negative and the metro is considered "less equitable". If the metro's Gini coefficient is less than the nation's, the difference is positive and the metro is considered to be "more equitable".