

ADVANCING OPPORTUNITY IN CENTRAL INDIANA



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EXECUTIVE SUMMARY

Promoting opportunity for all workers has become a defining challenge for metropolitan regions throughout the United States, including Central Indiana. The twin forces of global trade and technological change continue to open vast new markets for the goods and ideas created by Central Indiana's businesses and workers. Yet these same forces also expose the region to fiercer competition, which can quickly render some advantages and capabilities obsolete. Workers with the greatest ability to adapt to these forces have thrived in recent years, while others have fallen behind.



This report finds that these disruptive forces have both benefited and buffeted Central Indiana's economy over the prior decade. The region achieved among the fastest rates of job growth in the Midwest, fueled in no small part by its advanced industries—those that disproportionately drive the region's innovation and trade with the world. At the same time, the region lost many of its middle-class jobs in manufacturing and construction. And despite its job growth, Central Indiana saw slow and uneven earnings growth. Many more of the region's workers and families now struggle to make ends meet.

Central Indiana is not alone. These same disruptive forces are rapidly reshaping regional economies throughout the country and the access to opportunity they provide.

Recognizing these challenges, Central Indiana's leaders are seeking to promote economic growth and prosperity while advancing opportunity for more workers and families to reach the middle class. Their concern prompts this closer look at the industries, occupations, and skills that offer workers the best chances of obtaining jobs that provide family-sustaining wages and benefits.

This report considers ways in which Central Indiana can advance economic opportunity by focusing regional growth strategies on “Opportunity Industries”—the industries that concentrate the region's *good jobs* and *promising jobs*. *Good jobs* provide middle-class wages and benefits. *Promising jobs* are entry-level jobs that, while they do not provide the pay or benefits of a good job, enable the workers who hold them to reach a good job within 10 years.

Five central findings from this report emphasize that Opportunity Industries are a critically important focal point for efforts to expand and support the middle class in Central Indiana:

1. Central Indiana needs more good and promising jobs than it provides.

Central Indiana provides hundreds of thousands of good and promising jobs for workers both with and without four-year college degrees. The region is home to more than 1.1 million prime-aged workers, about 60 percent of whom have less than a four-year college degree. About 264,000, or 26 percent, of Central Indiana's jobs are good or promising jobs held by sub-baccalaureate workers, those without a four-year college degree. Another 239,000, or 23 percent, are good or promising jobs for high-skill workers, those who have at least a bachelor's degree. However, the region still does not provide enough labor market opportunity for all the workers who need it. The remaining 524,000, or 51 percent, of Central Indiana's jobs are neither good nor promising, meaning they provide insufficient pay or benefits and no viable pathway to good jobs. Providing more good and promising jobs could have important, long-lasting economic and social benefits for the region.

2. Opportunity Industries disproportionately contain Central Indiana's good jobs and can help close its opportunity deficit.

Focusing economic development efforts on Opportunity Industries can increase the number and share of good jobs in the region, in turn creating more pathways to good jobs. The region's Opportunity Industries are found within a small but diverse set of sectors. Manufacturing, government, construction, logistics, and health care provide over 70 percent of the region's good jobs for sub-baccalaureate workers. About 70 percent of good and promising jobs for high-skill workers are found in government, health care, and professional services. Sub-baccalaureate workers' advancement toward

good jobs often depends on the availability of good jobs in Opportunity Industries, rather than promising entry-point jobs. Growing Opportunity Industries that concentrate these good jobs, especially those "advanced" and "tradable" industries that drive innovation and sell most of their products or services outside of the region, can advance both opportunity and prosperity.

3. Career pathways to Central Indiana's good jobs in Opportunity Industries usually involve a major career switch.

Opportunity Industries and the good jobs they provide include many types of occupations. Construction occupations provide among the highest concentrations of good jobs for sub-baccalaureate workers, followed by production occupations such as machinists and welders. Some administrative occupations, such as secretaries and bookkeepers, also disproportionately concentrate good jobs for sub-baccalaureate workers. High-skill workers can find good jobs in management, business, and STEM occupations, among others. To gain a good job, however, most sub-baccalaureate workers (75 percent) will switch between completely different types of occupations. For these workers, career pathways with the greatest upward earnings mobility tend to involve knowledge and skills associated with construction, maintenance and repair, and manufacturing—areas of expertise that are decreasing in their importance to the labor market. By contrast, abstract cognitive abilities and social skills, which enjoy increasing demand in the region's labor market—are most closely related to upward earnings mobility for high-skill workers. Because people traditionally learn these skills and abilities in four-year degree programs, new models of learning for sub-baccalaureate workers may be needed.

4. Central Indiana workers' chances of obtaining a good job vary by their education, race and gender.

Central Indiana's shortage

of good and promising jobs affects some workers more than others. Education is a key determinant of whether someone can obtain a good job. Thirty-five (35) percent of workers in Central Indiana who have no more than a high school diploma hold a good job or a promising job, while 73 percent of workers with a bachelor's degree hold a good or promising job. However, factors unrelated to workers' education or experience, such as gender and race/ethnicity, also distinguish their chances of obtaining a good job. Among workers with only a high school diploma, 30 percent of black men hold a good or promising job, while the same is true of 54 percent of non-Hispanic men of all other races. Among workers with an associate's degree, 40 percent of black women hold a good or promising job, while 72 percent of men who are neither black nor Hispanic do.

5. Central Indiana has a lead on other regions in advancing opportunity.

Though Central Indiana faces a deficit of good jobs, the region's share of jobs that qualify as good or promising (49 percent) exceeds that in most of its peer regions. Central Indiana provides better labor market opportunities

than most of its peers not only because of its affordability but also because of the nature of its economy. Despite losses in manufacturing and construction that have changed the structure of the region's economy in recent years, Central Indiana continues to provide many jobs in Opportunity Industries, enabling sub-baccalaureate workers to earn more than they would in other regions. These advantages provide the region's leaders with a solid platform for extending opportunity to more workers and families.

The report's findings reinforce the challenges the region faces around advancing opportunity. Central Indiana faces a deep and interrelated set of issues related to the supply of good jobs, especially for workers without high levels of education, and those from underrepresented groups. However, the findings also suggest practical strategies by which the region can adapt to change and help more workers thrive. Addressing the challenges highlighted here will require new coordinated solutions from the fields of economic development, education and workforce development, and state and local policymakers.



The findings point to four key implications relevant to regional strategies to address these challenges:

- **Grow good jobs.** Economic development can help bend Central Indiana's growth curve so that it provides more good jobs. To do so, economic developers must pursue two objectives simultaneously: advancing opportunity by incentivizing the growth of good jobs, and advancing prosperity by supporting the growth of tradable advanced industries that improve the region's prosperity. This requires a sharper focus on the Opportunity Industries that support both objectives, and the policy tools that most effectively promote their growth.
- **Improve job quality.** Even with more focused and disciplined economic development investments, Central Indiana is unlikely to close its gap in good and promising jobs through growth alone. It must also improve the quality of its existing jobs. The region's leaders should work with employers who are already committed to improving job quality, and with those where the business case for job quality is clearest. By leading the way, these motivated employers can put pressure on others. Meanwhile, policy can also play a productive role in shaping a competitive and fair labor market that encourages and incentivizes work and upward mobility.
- **Prepare people for good jobs.** Today, there are more workers in the region than there are available good jobs. However, growing good jobs and improving job quality depend on the availability of talented workers in Central Indiana. Education and training lead to better chances of obtaining good jobs. However, the knowledge, skills, and abilities employers

demand continue to change over time. Today, workers not only need training for specific jobs or occupations, they also need the skills to adapt: to teach themselves, to problem-solve, to reason, and to communicate ideas. These skills can improve workers' independence and help them forge their own pathways to good jobs even in the face of a changing labor market.

- **Support working families.** Many working families in Central Indiana today struggle to make ends meet. Workers in these families face difficult tradeoffs as they pursue better labor market opportunities. Even as leaders in Central Indiana continue to develop and implement new solutions to advance opportunity, many of these workers and their children will continue to struggle to get ahead. Leaders can support their upward mobility by addressing barriers struggling families face along the way through policy, education, and services.

Central Indiana possesses many enviable advantages for advancing opportunity, including a diverse and growing economy and tremendous civic capacity. Now, it must marshal and coordinate that capacity—across state and local economic development agencies and business groups, workforce development organizations that connect people to jobs, educational institutions, policymakers, and philanthropy—to address urgent challenges facing its workers and families. This report identifies strategies and tactics leaders in Central Indiana can pursue to address these challenges. The future of the region's middle class—and that of the regional economy as a whole—depends on the actions the region's leaders and institutions take today. This report provides new information and insights that can enhance the impact of their efforts.





INTRODUCTION

Advancing economic opportunity for more workers and families has become a defining challenge for U.S. regions, including Central Indiana. In recent years, technology and trade have unlocked vast economic potential for regions like this one, spurring the growth of innovative industries and boosting prosperity. Yet these dynamics have also put businesses and workers to the test, exposing them to fiercer competition and disruptive technologies that make some capabilities and skills obsolete.

Although these sorts of changes are nothing new, the pace at which they now arrive certainly is. Leaders in states and regions once adapted policies and systems to changing labor market demands over the course of a generation. Today, demand for skills that took a worker years to acquire can vanish in months. Businesses keen to keep pace with markets pursue more flexible relationships with workers. This accelerating pace of economic change has had a polarizing effect in many regions, creating more opportunities for

those with the greatest ability to quickly adapt and limiting opportunities for others.

Recognizing the challenges these trends pose not only in the present but also to the region's future, leaders in Central Indiana are seeking new solutions that advance opportunity for more workers and families to reach the middle class and put the region on a higher trajectory of economic growth. In recent years, a number of organizations in the region have increased

their focus on inclusive economic growth and development in an effort to confront these trends. Their concern prompts this closer look at the industries, occupations, and skills that offer the best chances for workers in this region to obtain jobs that provide family-sustaining wages and benefits.

This report considers ways in which Central Indiana can advance economic opportunity, particularly for workers without a four-year college degree, by focusing regional economic development strategies on “Opportunity Industries”—the industries that disproportionately contain the region’s “good jobs” and “promising jobs.” The report’s analysis of the economic opportunities offered by different industries is novel in two ways. First, the report considers not only the good jobs that provide family-sustaining wages and benefits, but also the career pathways that lead to good jobs. These career pathways reveal how workers navigate Central Indiana’s evolving labor market so they may work their way from promising entry-level jobs to better-paying jobs in the future, acquiring the knowledge, skills, and abilities they need to succeed along the way.

Second, the report’s focus on industries leads to insights about how leaders and practitioners across different systems and institutions can work together to support the portions of Central Indiana’s economy that matter most for advancing opportunity, and to improve opportunities elsewhere. Industries are often how economic development and workforce development professionals think about, and prioritize, their efforts to grow good jobs and connect workers to them. This analysis delves into the types of work and skills that provide the best opportunities to obtain good jobs within and among Central Indiana’s Opportunity Industries, exploring the occupations, knowledge, and skills most crucial to workers’ career advancement.

The result is a nuanced reckoning of how leaders in Central Indiana can together pursue growth strategies that enhance the region’s prosperity

while advancing opportunity for the workers and families who need it most. Beyond growth strategies, Central Indiana can pursue employer-based initiatives and incremental policy changes that improve the quality of jobs inside and outside of its Opportunity Industries. The findings also reveal that advancing opportunity will ultimately depend on investments in education and training programs that better prepare many more people for jobs in the 21st century economy. In the meantime, however, leaders in institutions throughout the region can begin to implement short-, medium-, and long-term initiatives that address emerging challenges and help ensure the region’s growth and prosperity going forward.

The report proceeds in three parts. It begins by reviewing recent trends in Central Indiana’s economic growth and prosperity, the macroeconomic forces behind them, and the longer-term challenges they may pose. The report then presents a solutions-oriented series of findings highlighting the stock of opportunity the region offers in terms of its “good jobs” and “promising jobs,” the industries these jobs reside in and why, and how access to good jobs in these Opportunity Industries varies among different types of workers. Finally, the report concludes with a discussion of the implications of these findings and the types of strategies the region might consider in order to advance opportunity for more workers and families.

Central Indiana is hardly the only region facing the challenges around access to economic opportunity highlighted in this report. However, this region is unique for its openness to and pursuit of clear-eyed accounts of its challenges and for the shared commitment its leaders have shown to developing pragmatic solutions. Confronting the scale of these challenges will not be easy, and the solutions to address them may not be simple. However, Central Indiana is one of a handful of U.S. regions today that are beginning to effect meaningful changes that can lead to more inclusive economic growth and opportunity.



TRENDS IN CENTRAL INDIANA'S GROWTH AND PROSPERITY

Leaders in Central Indiana have overseen a remarkable economic turnaround in recent years.¹ The region weathered the Great Recession better than many of its peers and overcame stiff headwinds to emerge as one of the fastest-growing economies in the Midwest. Yet globalization and technological change continue to reshape regional economies like Central Indiana's and the access to opportunity they can provide. Middle-class jobs that were once plentiful have grown scarcer and many workers now struggle to get by. As a result, longstanding challenges around access to opportunity and economic mobility now appear more severe and could threaten the region's future prosperity. These trends beg new approaches to how leaders in regions like Central Indiana advance economic opportunity for workers and families.

CENTRAL INDIANA'S JOB GROWTH EXCEEDED EXPECTATIONS

While similar regional economies struggled to gain traction in the aftermath of the Great Recession, Central Indiana's proved resilient. Like many regions, and the nation as a whole, Central Indiana sustained heavy job losses in manufacturing and other industries over the course of the recession. If each of Central Indiana's industries had grown in line with their national averages throughout the recession and recovery, the region could have expected similarly slow job growth. Instead, the region netted 96,000 new jobs over the 10 years from 2006 to

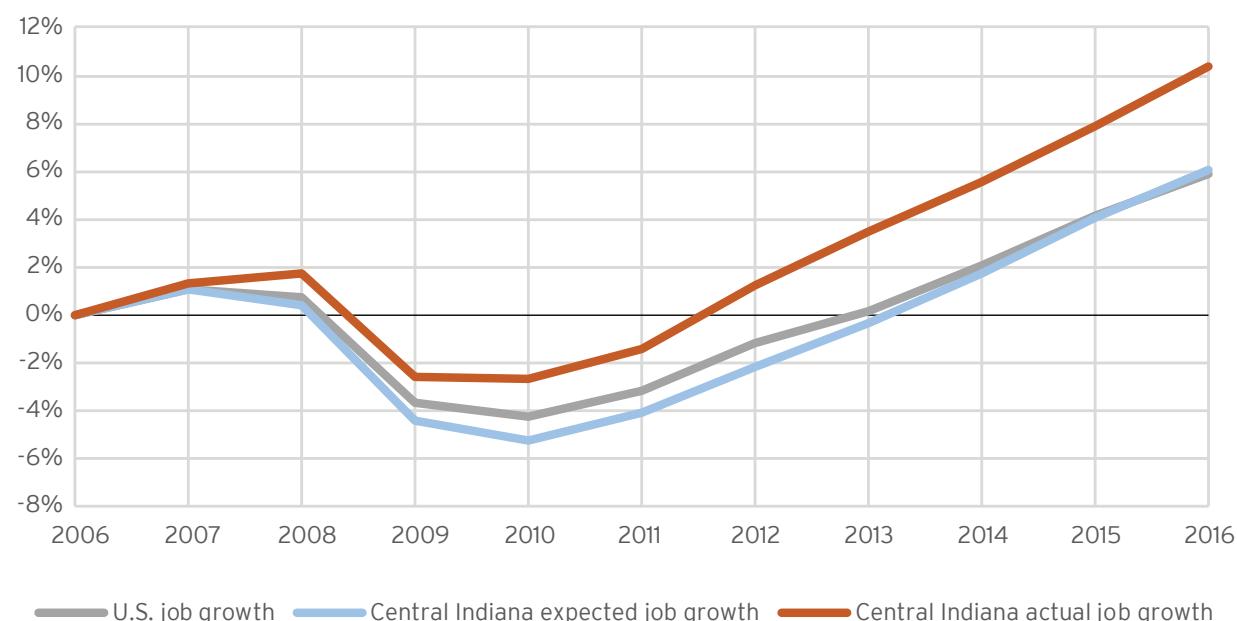
2016—a 10 percent increase that beat its expected performance by more than four percentage points, as shown in Figure 1.² Meanwhile, the region's economic output grew nearly in step with the nation's.³ These gains helped rank Central Indiana among the fastest-growing large metropolitan regions in the nation during this period, and well ahead of several neighboring regions in the Midwest.⁴

Central Indiana managed to defy these national job growth trends by cultivating deeper specializations in business services and logistics that helped diversify the region's "tradable industries" as local manufacturing declined. Tradable industries are crucial to the growth

FIGURE 1

Central Indiana added jobs faster than would be expected had it followed national trends

Central Indiana job growth compared to the nation's since 2006

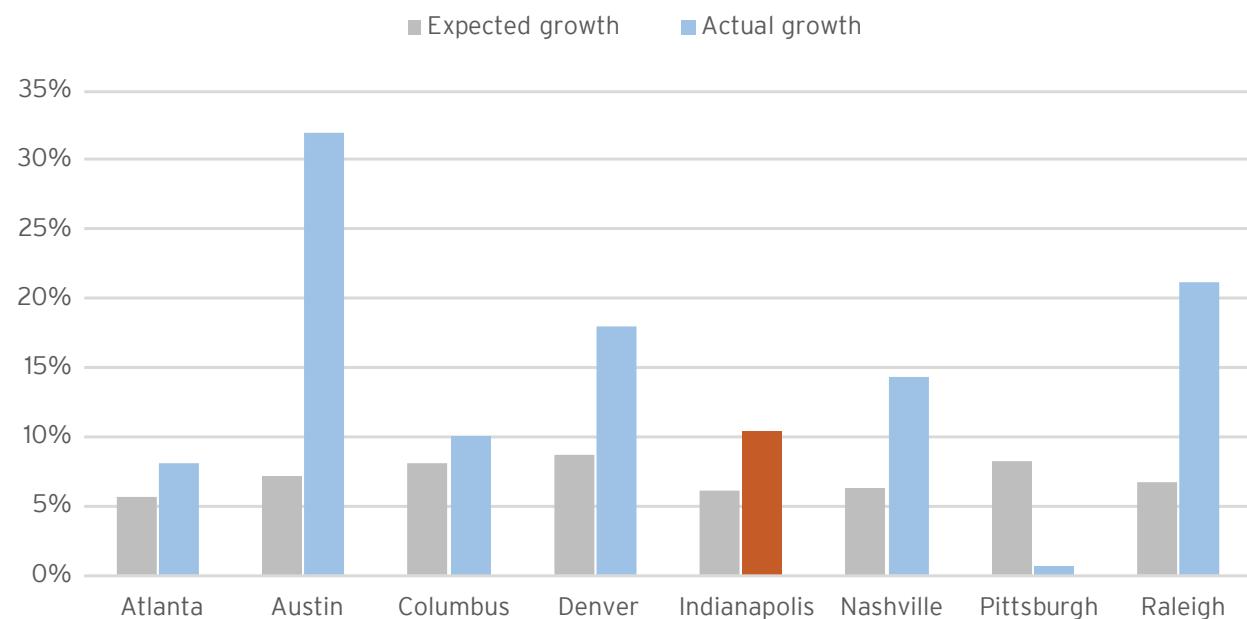


Source: Authors' analysis of Economic Modeling Specialists, Inc. estimates

FIGURE 2

Most of Central Indiana's peer regions also exceeded their expected rate of job growth

Expected versus actual job growth in U.S. peer regions, 2006 to 2016



Source: Authors' analysis of Economic Modeling Specialists, Inc. estimates

of regional economies. Businesses in these industries tend to sell most of their products and services to customers outside the region, bringing in new income that stimulates local growth.⁵ The growth of these specialized tradable industries netted nearly 20,000 new jobs in between 2006 and 2016.

The rapid diversification and growth of Central Indiana's tradable industries helped spur growth in other industries that cater primarily to local consumers and businesses. These local-serving industries, including health care, retail, and food service, comprise the majority of Central Indiana's jobs. Like tradable industries, they have also supplanted jobs in manufacturing and other industries in recent years. Local-serving industries accounted for 62 percent of the region's jobs in 2006 but generated about 75 percent of the region's job growth from 2006 to 2016, adding 72,000 jobs altogether.⁶ Health care

alone accounts for half these gains.⁷ Within the hospitality sector, food service added 14,000 jobs. Administrative services added 21,000 jobs, mostly at temporary employment agencies.

Although Central Indiana has managed to outpace some similar regions on job growth, it still faces deeper challenges than others. Central Indiana's growth has outpaced similar post-industrial regions such as Columbus and Pittsburgh.⁸ Pittsburgh saw next to no job growth from 2006 to 2016. However, outside of the Midwest, other regions have charged ahead. Mid-sized state capitals like Austin, Denver, Nashville, and Raleigh have not had to overcome the same set of challenges as historical manufacturing centers like Indianapolis. However, these regions still could have expected more modest job gains than they ultimately achieved from 2006 to 2016, as shown in Figure 2.

EARNINGS GROWTH IN CENTRAL INDIANA HAS LAGGED

Central Indiana's economic growth has delivered a bounty of new jobs in recent years, yet workers' earnings gains have been meager at best. Despite its job growth, improvements in the region's prosperity, as measured by workers' earnings, has been lackluster. Nationwide, average annual earnings increased 7.3 percent in real terms from 2006 to 2016, to \$65,700 per job.⁹ As shown in Figure 3, Central Indiana's average annual earnings grew by just 2.3 percent, to \$60,560. However, if the region's industries had added jobs and increased earnings at the same rate as their national counterparts, average annual earnings would have instead increased 5.3 percent, to \$62,310.

Two factors account for the region's worse-than-expected earnings growth. The first is that Central

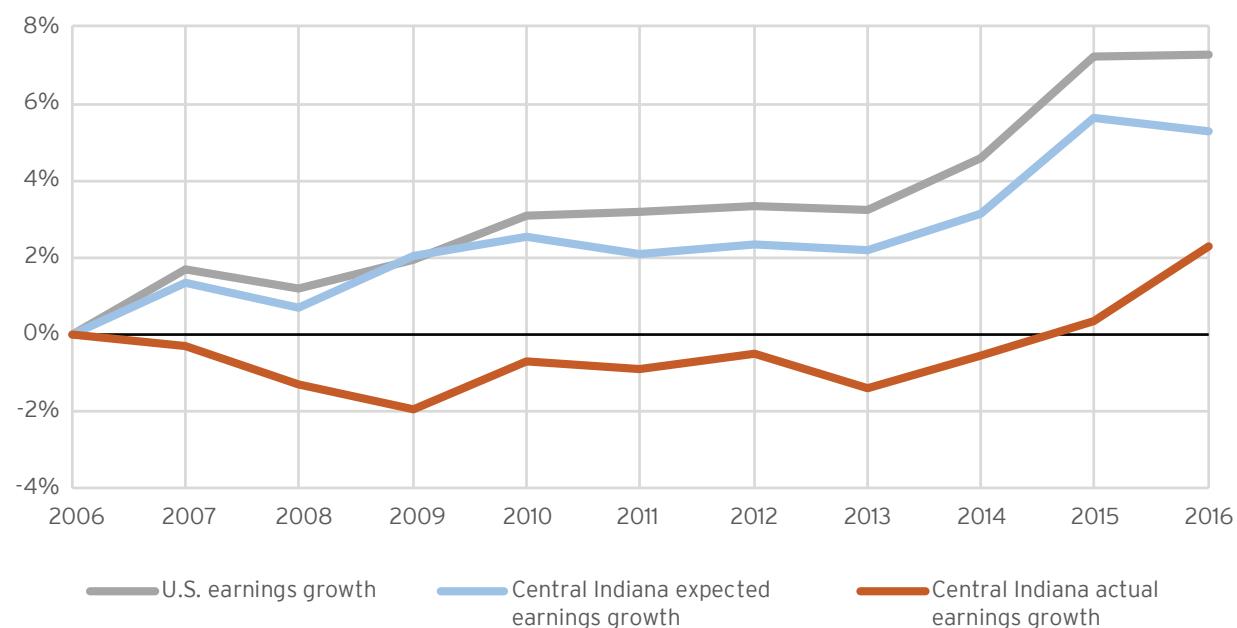
Indiana's industries did not increase their workers' pay and benefits as much as their counterparts in the rest of the nation. In fact, Central Indiana's industries increased earnings only about half as fast as their national counterparts, on average.¹⁰ Differences in costs of living between the U.S. average and Central Indiana did not change substantially during this period and so do not explain the region's slower-than-average earnings growth within most industries.¹¹

Second, Central Indiana's economic restructuring has cost it many of its higher-paying jobs, leading to lower average earnings among its industries. The region has replaced the jobs it lost in high-paying industries such as manufacturing and construction with jobs in lower-paying industries such as food service and retail, as shown in Figure 4. In fact, nearly two-thirds of Central Indiana's net job growth between 2006 and 2016 occurred in industry sectors where earnings per job are lower than the regional average.¹²

FIGURE 3

Central Indiana's earnings growth has not kept pace with the nation's

Central Indiana average annual earnings growth compared to the nation's since 2006

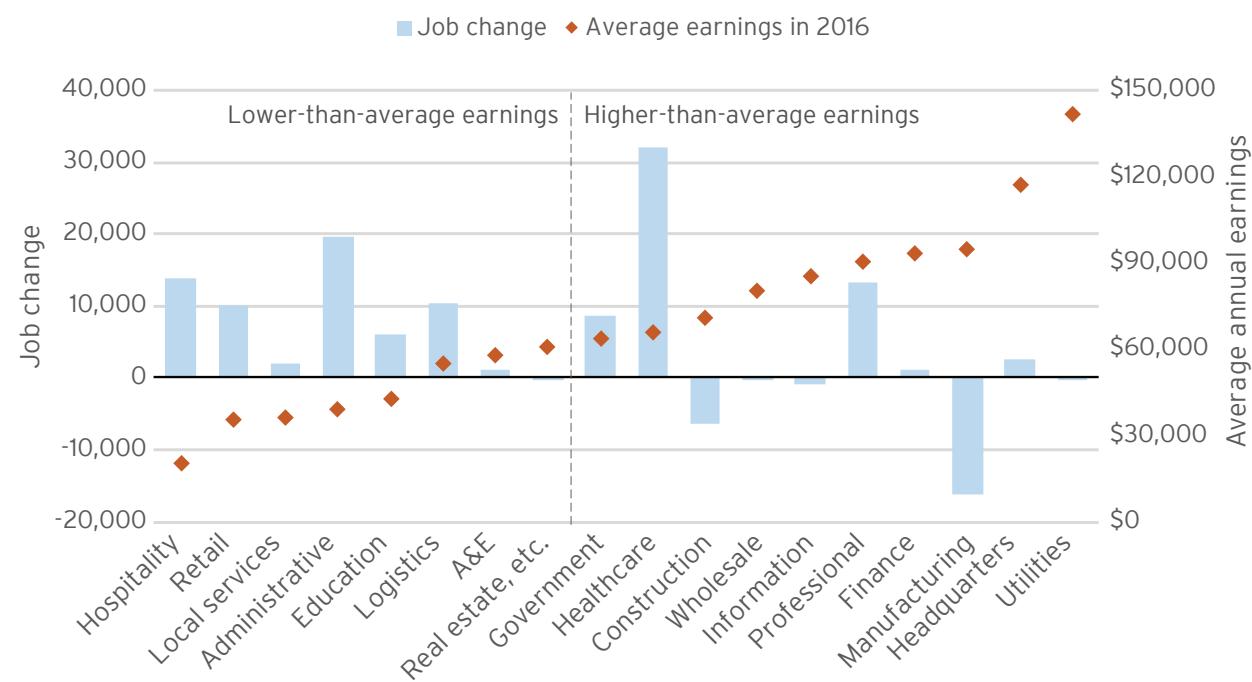


Source: Authors' analysis of Economic Modeling Specialists, Inc. estimates

FIGURE 4

Central Indiana's net job growth has come from lower-paying sectors of its economy

Central Indiana's job change and average earnings by industry sector, 2006 to 2016



Source: Authors' analysis of Economic Modeling Specialists, Inc. estimates

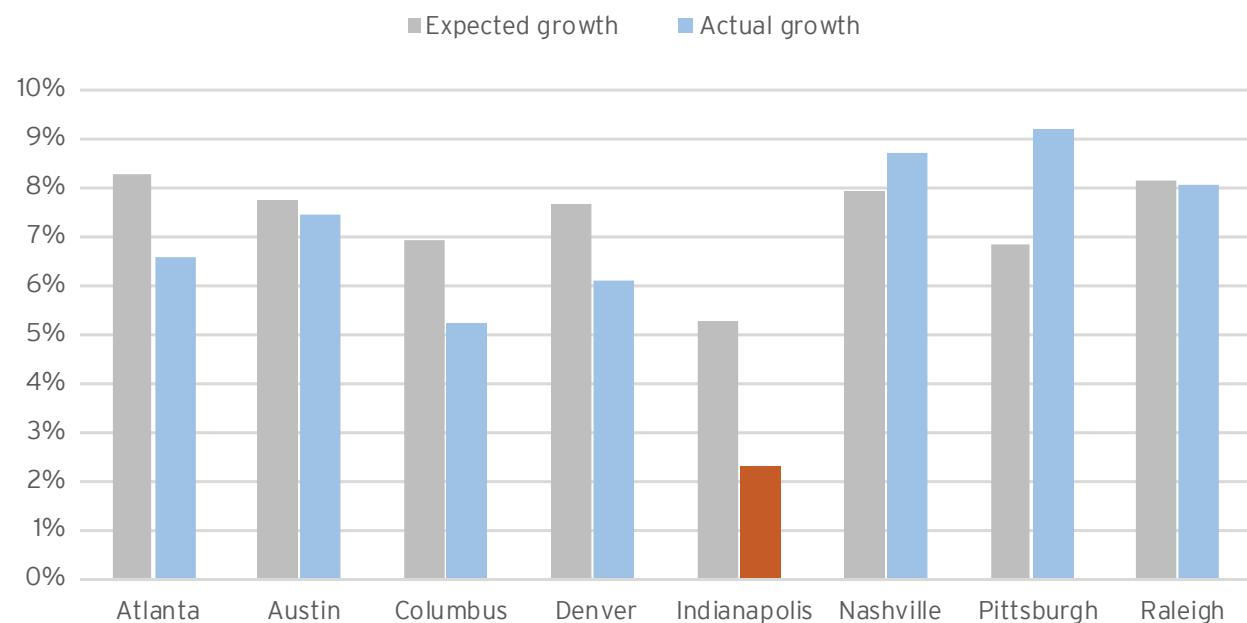
This pattern of growth without meaningful gains in earnings presents a structural challenge for Central Indiana's leaders. While the region's job gains in high-paying tradable industries, such as information or professional services, tended to boost average earnings, the much larger number of jobs Central Indiana added in low-paying industries served to lower earnings overall. Further, Central Indiana's slower earnings growth within its industries begs questions about the quality of jobs the region has added as the structure of its economy has shifted away from manufacturing and toward services in recent years.

Most of Central Indiana's peer regions also underperformed expectations on earnings growth, but by smaller margins than Central Indiana as shown in Figure 5. Average annual earnings underperformed expectations between 2006 and 2016 in every peer region except Pittsburgh and Nashville. Pittsburgh saw almost no job growth during this period as gains in some industries were offset by losses in others. Yet even as the structure of its economy shifted, Pittsburgh has managed to concentrate its job growth in higher-paying sectors. Meanwhile, Columbus's restructuring has followed a path closer to Central Indiana's, leading to better-than-expected job growth but worse-than-expected earnings growth. Still, Central Indiana's meager earnings gains stand out among these peers.

FIGURE 5

Central Indiana's average earnings have kept pace with neither expectations nor peers

Expected versus actual average annual earnings growth in U.S. peer regions, 2006 to 2016



Source: Authors' analysis of Economic Modeling Specialists, Inc. estimates

MANY WORKERS HAVE BEEN LEFT BEHIND

Central Indiana's earnings gains have also been highly uneven, leaving many workers behind. In fact, only two small groups of Central Indiana workers experienced earnings gains: those who earn the most and those who earn the least, as shown in Figure 6. From 2006 to 2016, workers at the 90th percentile of the earnings distribution (those earning more than 90 percent of all workers) saw their annual earnings increase 5.8 percent in real terms, to \$96,225 per year.¹³ Workers at the 10th percentile (those earning more than only 10 percent of all workers) saw their annual earnings increase 4.9 percent, to \$11,839 per year. However, earnings declined at nearly all points in between: Workers from the 20th through the 80th percentile of the

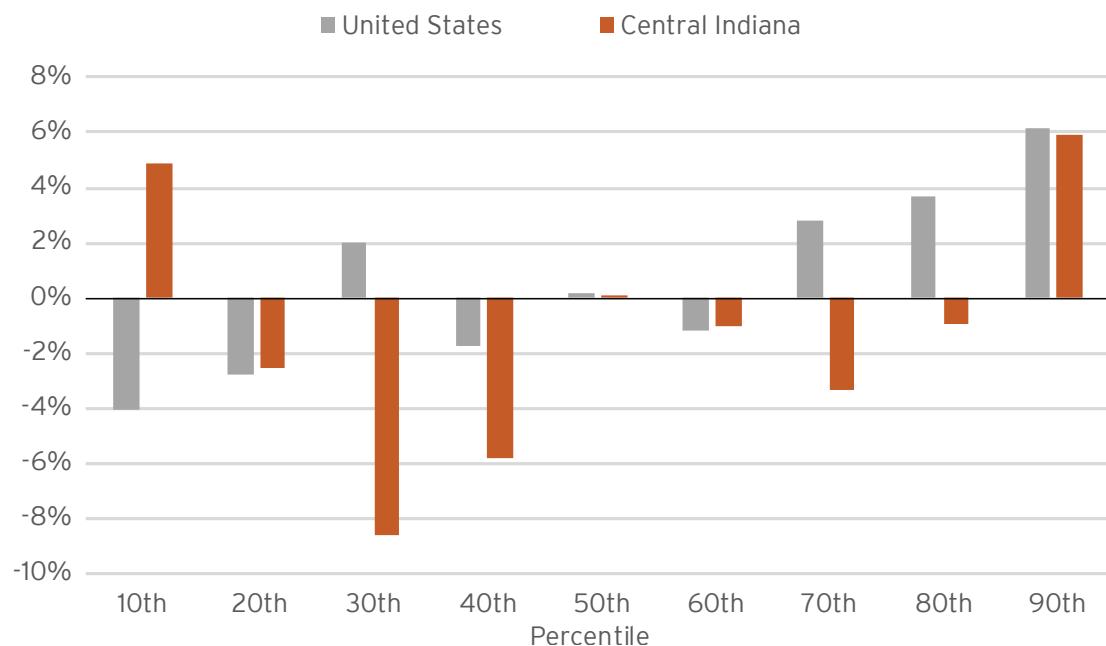
distribution saw declines in average annual earnings of up to 8.5 percent.

On average, Central Indiana workers without a baccalaureate degree suffered the largest earnings declines. Median annual earnings in 2016 remained below their 2006 levels for workers of all levels of education, as shown in Figure 7.¹⁴ After a steep decline, median annual earnings for workers with a bachelor's degree had recovered to within 3 percent of their 2006 levels by 2016. However, median annual earnings remained around 10 percent lower in 2016 than their 2006 levels for workers with only a high school diploma or some post-secondary education. In fact, the region's median annual earnings among all workers had recovered to their 2006 levels by 2016 only because the share of workers with a bachelor's degree who earn more has grown.

FIGURE 6

Earnings remain lower throughout the middle of Central Indiana's earnings distribution

Change in real annual wages among wage and salary workers in Central Indiana, 2006 to 2016

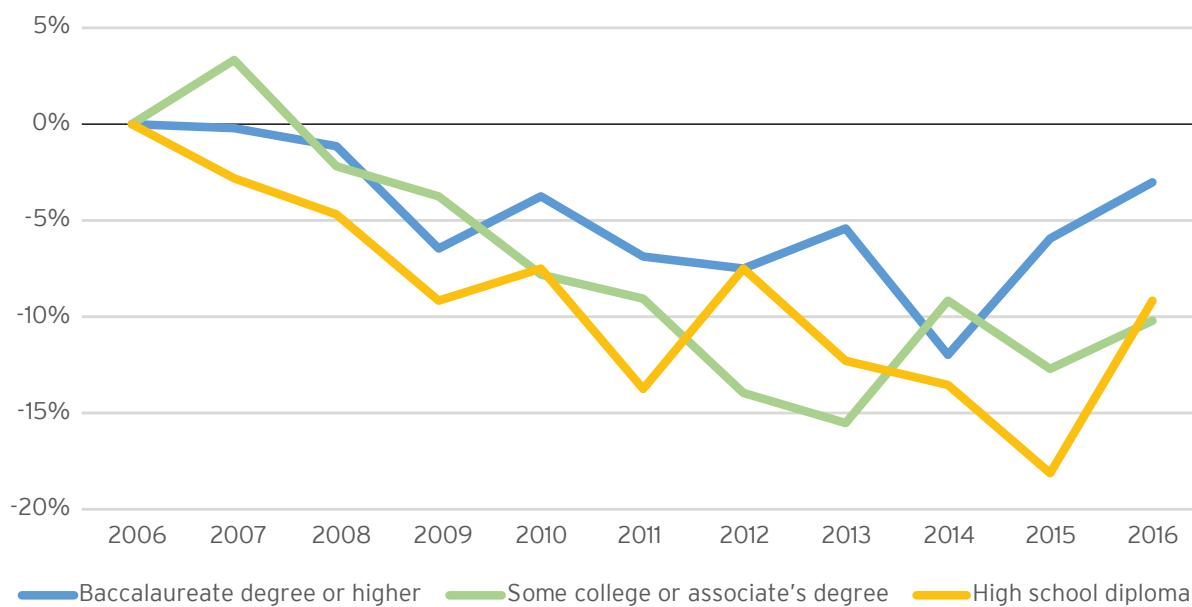


Source: Authors' analysis of American Community Survey public-use microdata

FIGURE 7

Median earnings declined among Central Indiana's workers regardless of their education

Percent change in median real earnings since 2006 among wage and salary workers in Central Indiana



Source: Authors' analysis of American Community Survey public-use microdata

MORE WORKERS NOW STRUGGLE TO MAKE ENDS MEET

As low-paying work has proliferated and earnings growth has stagnated in Central Indiana, more workers have found it harder to find jobs that pay a family-sustaining wage. Many now struggle to make ends meet. Some workers who were once economically secure have fallen behind. Younger workers are finding fewer footholds that allow them to get ahead. These recent trends lead to some difficult near-term challenges for Central Indiana and may lead to more concerning longer-term ones.

The number and share of Central Indiana workers and residents that belong to families that struggle to make ends meet grew over the course of the Great Recession and remains high. Just prior to the recession, nearly 400,000 residents, or 24 percent of the population, belonged to families

Nearly 560,000 people, or 30 percent of the region's population, belonged to struggling families in 2016.

that struggled to make ends meet, as shown in Figure 8. This number swelled by an additional 200,000 individuals over the course of the recession, reaching a peak of nearly 600,000 people, or 34 percent of the population, in 2011. Since then, only a few workers and families have found a path back to the economic security of the middle class. Nearly 560,000 people, or 30 percent of the region's population, belonged to struggling families in 2016.

IDENTIFYING CENTRAL INDIANA'S STRUGGLING FAMILIES

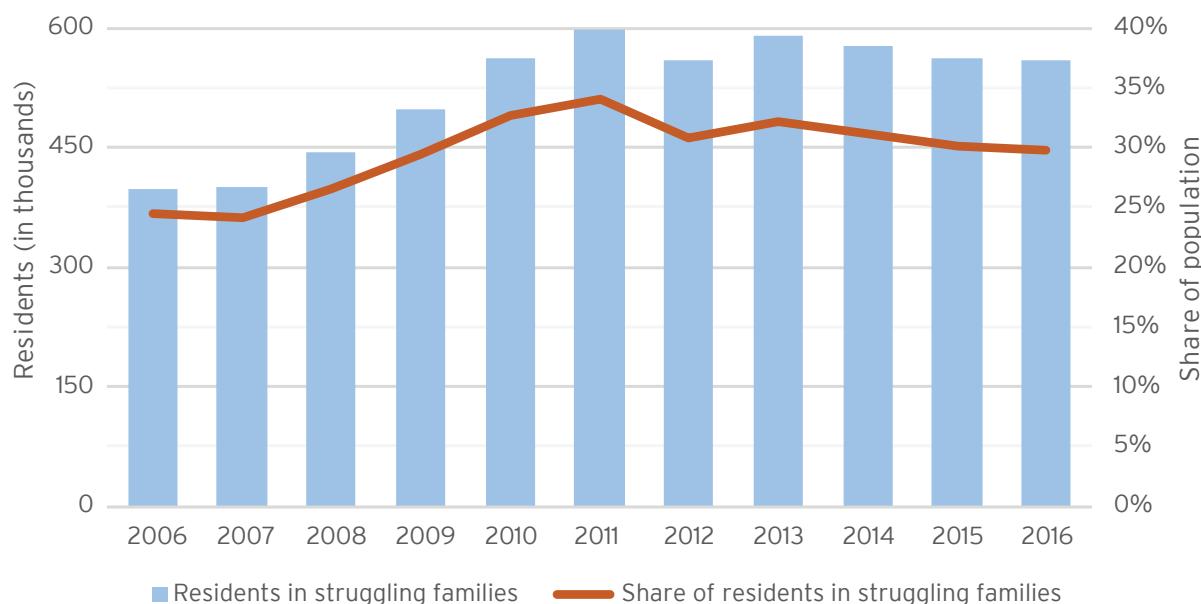
Workers and families that struggle to make ends meet are not necessarily in poverty. Federal poverty guidelines refer to the amount of income a family needs to put food on the table.¹⁵ Central Indiana's poverty rate rose from 8.6 percent in 2000 to 14 percent in 2016.¹⁶ Yet, as the numbers above suggest, a far greater share of the region's residents belong to families that struggle to afford other basic needs. The federal poverty threshold for a family of four with two children was \$24,300 per year in 2016.¹⁷ However, a family might live above this line but still have little choice but to live in substandard housing or struggle to afford quality child care.

Poverty thresholds also fail to account for differences in costs of living in different areas. For example, within the Central Indiana region, a family of four would need \$52,600 per year to make ends meet in Marion County.¹⁸ The same family would need \$50,700 to make ends meet in Morgan County. These higher thresholds reflect the income these families need to sufficiently cover basic expenses such as food, housing, transportation, child care, health care, and taxes, and to save a small amount for emergencies such as medical care, auto repairs, or joblessness.

FIGURE 8

The share of Central Indiana residents who belong to families that struggle to make ends meet remains higher than in the years prior to the Great Recession

Residents who belong to families that struggle to make ends meet, 2016

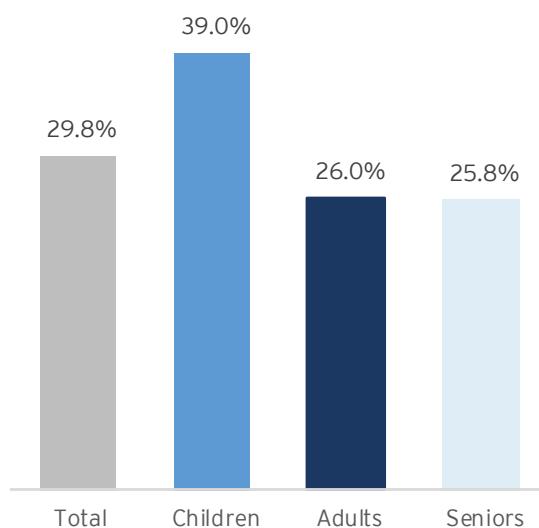


Source: Authors' analysis of American Community Survey public-use microdata and the University of Washington Center for Women's Welfare County-Based Sufficiency Standard

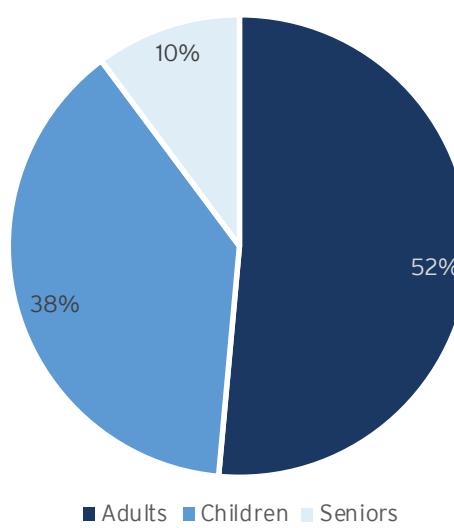
FIGURE 9

A quarter of working-age adults and 39 percent of children belong to struggling families

Share of residents in struggling families by age group, 2016



Share of struggling residents by age group, 2016



Source: Authors' analysis of American Community Survey public-use microdata and the University of Washington Center for Women's Welfare County-Based Sufficiency Standard

Central Indiana's changing labor market is responsible for most of this rise

Although several factors have contributed to this rise in the share of people in families that struggle to make ends meet, the most significant ones pertain to changes in the region's labor market.¹⁹ Joblessness was a prime factor behind the rise in struggling families during the recession and early portions of the recovery. However, employment rates had recovered and were actually slightly higher in Central Indiana in 2016 than in 2006.²⁰ But even as jobs returned, wage growth stagnated. In fact, stagnant and falling wages appear to be the main culprit in the region's stubbornly high share of struggling residents post-recession, evidenced in the fact that over 18 percent of people who are employed struggled to make ends meet for their families in 2016, up from less than 15 percent in 2006.

Some groups of workers struggle more than others. About 21 percent of working-age sub-baccalaureate workers struggled to make ends meet in 2006, but nearly 26 percent struggled in 2016, suggesting that well-paid jobs for these workers have grown especially scarce.²¹ This is not solely a matter of younger or less-educated workers entering the region's workforce in recent years. In fact, a greater share of sub-baccalaureate workers in 2016 had some post-secondary education than in 2006 (38 versus 33 percent, respectively). Further, the share of workers who are younger than 35 rose only slightly, making up 34 percent of all sub-baccalaureate workers in 2006 and 36 percent in 2016.

Labor market changes have affected some workers more than others

Because educational attainment increasingly determines whether a worker holds a job that pays a family-sustaining wage, groups of people

About 21 percent of working-age sub-baccalaureate workers struggled to make ends meet in 2006, but nearly 26 percent struggled in 2016, suggesting that well-paid jobs for these workers have grown especially scarce.

with lower rates of educational attainment struggle more often. Although 44 percent of white workers and 54 percent of Asian workers had a bachelor's degree in 2016, only 21 percent of black workers and 15 percent of Hispanic workers did.²² About 14 percent of white adults and 22 percent of Asian adults struggled to make ends meet in 2016. However, 34 percent of black adults and 40 percent of Hispanic adults struggled to make ends meet in 2016.

Yet, education does not explain all these disparities. Even after accounting for differences in educational attainment, black and Hispanic workers still remain more likely to struggle to make ends meet.

Gender also distinguishes workers' likelihood of struggling to make ends meet. A larger share of women struggles to make ends meet compared to men, despite women's higher rates of educational attainment. Women have higher rates of bachelor's degree attainment and a larger proportion have either some college experience or an associate degree.²³ Yet nearly 21 percent of women in Central Indiana struggle to make ends meet, compared to less than 17 percent of men. This appears to have two causes. First, women earn less than men on average. Second, many women in struggling families are single parents and so must earn more than many male counterparts to meet their family's needs.

These trends may lead to longer-term challenges for the region

The larger share of women and people of color who struggle to make ends meet for their families may pose a longer-term challenge for Central Indiana because many of these people are parents. In fact, over half of the struggling working-age adults in Central Indiana are parents. Thirty-nine (39) percent of all the region's children belonged to struggling families in 2016, as shown in Figure 9.²⁴

Over 87 percent of the region's children who belong to a struggling family lived with someone who is in the labor force and 84 percent lived with at least one *employed* adult. Still, their parent's earnings proved insufficient to cover all their family's needs.

The share of children living in families that struggle to make ends meet represents a core multi-generational challenge for Central Indiana. Children that grow up in economically vulnerable families have a harder time getting ahead in life, especially in this region. According to research by Raj Chetty and others at the Equality of

Opportunity Project, Central Indiana children born between 1980 and 1982 to parents at the 25th percentile of income rose to just the 37th percentile as adults on average.²⁵ This relatively meager rate of intergenerational economic mobility ranks Central Indiana 90th out of the 100 largest metropolitan areas in the country on this measure. Central Indiana's mobility challenges suggest that lifting struggling workers into the middle class is crucial to the future trajectory of their children. Should the precarious financial situation of these parents persist, many of their children will face similar challenges in reaching the middle class in adulthood.

These trends should concern the region's leaders for a number of reasons:

- First, a large portion of workers and families are less economically secure, which can lower public revenues and increase expenditures. Not only are many workers earning less and therefore paying less in taxes, but many also receive support from public benefit programs like the Supplemental Nutritional Assistance Program (a.k.a. SNAP or food stamps) and Medicaid.



- Second, the distribution of job growth has made educational attainment a more important determinant of workers' chances of realizing economic security. This may further disadvantage members of groups whose access to quality education is more limited and therefore worsen economic divides between communities.
- Third, a large portion of struggling working-age adults are parents and are raising a significant portion of the region's children, which means these challenges may further reinforce and exacerbate current economic divides and associated societal costs in future generations.

Though the decline in jobs that pay family-supporting wages and the rise of families that struggle to make ends meet have several underlying causes, their near- and long-term consequences are concerning nonetheless. These findings on workers who struggle to make ends meet provide support for employers' claims that education and skills are what their businesses need today and what workers need in order to thrive. However, the findings also raise questions about why so many workers who do have education and labor market experience cannot find good jobs. Regardless, the trends point to deepening multi-generational challenges—challenges that could inhibit the region's growth and prosperity in the future if left unaddressed.

CENTRAL INDIANA MUST ALSO CONTEND WITH DISRUPTIVE EXTERNAL FORCES

Central Indiana is not alone in facing these challenges. Leaders in regions throughout the United States are contending with a set of external forces that continue to reshape local economies and the opportunity they provide to workers and families. Intensifying international trade competition, disruptive technologies, and changing work arrangements have upended

regional labor markets in recent years. Forces like these will likely only accelerate the pace of change in the years ahead, adding greater urgency to the challenges facing leaders in regions like Central Indiana.

Globalization has had a profound effect on regions like Central Indiana that have historically depended on manufacturing for a large share of jobs. The value of global goods trade grew 400 percent from 1990 through 2007.²⁶ While consumers have benefited from newly imported goods, increased trade competition has been tough on domestic manufacturers. Economists David Autor, David Dorn, and Gordon Hanson find that regions that specialized in types of manufacturing more exposed to Chinese imports—such as Central Indiana's specialization in household audio and video equipment—experienced more severe declines in manufacturing jobs and increased joblessness among sub-baccalaureate workers.²⁷

Technological change has impacted manufacturing and non-manufacturing industries alike. Automation and digitalization have eliminated well-paid routine jobs in production and clerical occupations. The same group of economists find that while technology does not reduce total employment, it does polarize job growth.²⁸ Technological change has increased the demand for skilled knowledge workers and the wages employers will pay for them. Meanwhile, it has made the labor of many sub-baccalaureate workers redundant and therefore cheaper. As a result, high-paying jobs and low-paying jobs have grown as a share of total employment.

Globalization and technological change have also contributed to changes in how work is organized. Competitive pressures have led companies to pursue alternative work arrangements. The most notable change in labor relations has been the decline of collective bargaining. More than one-fifth of U.S. workers belonged to a labor union in 1983, compared to around one-tenth in 2017.²⁹ Economists have noted that the retreat of unions

has led to declining pay and benefits not only among the types of workers once covered by collective bargaining agreements but also among similar non-unionized workers.³⁰

More recently, new companies and industries have emerged that are devoted to deploying workers on demand. Uber, Lyft, and Task Rabbit are highly visible examples of the emergence of the “Gig Economy,” although such companies “employed” only half of 1 percent of U.S. workers in 2015.³¹ A more pervasive shift has been toward contingent employment arrangements. Temporary employment or “temp” agencies were once known for contracting clerical workers for short-term assignments. Today, these agencies directly employ workers that report to jobs in manufacturing, logistics, and other industries. Some temp workers are highly skilled, such as accountants, bookkeepers, or lawyers. Incredibly, one recent study finds that temp agencies can account for almost 100 percent of net U.S. job growth from 2005 to 2015.³² The rise of

contingent work has led to lower wages and greater income volatility for many workers.³³

These forces appear set to continue to reshape local labor markets. The McKinsey Global Institute estimates that at least one-quarter of current U.S. labor activity will be automated by 2030, prompting up to 54 million workers to search for new occupations as their current one becomes obsolete.³⁴ However, McKinsey does not expect work to disappear. Just as in the past, the demand for labor will continue to grow, perhaps in entirely new occupations, but job growth will become increasingly polarized. Employers will look to hire more highly skilled workers as technology makes them even more productive. Unless the number of skilled workers rises with that demand, highly skilled workers will be paid more and the growing ranks of less skilled workers will be paid less, continuing the trend of polarization the nation and regions like Central Indiana have seen in recent years.



CENTRAL INDIANA'S OPPORTUNITY INDUSTRIES

These trends in Central Indiana's economic growth and prosperity and the challenges they may bring prompt this closer look at how the region's leaders can advance opportunity for more workers. External forces will continue to shift the nature and extent of economic opportunity in regions like Central Indiana, threatening its stock of middle-skill, middle-class jobs. Such losses also threaten the career ladders and pathways that offer workers the opportunity to gain knowledge and experience as they work their way toward better-paying jobs.

The findings that follow identify and explore Central Indiana's Opportunity Industries, which concentrate the region's "good jobs" that provide family-sustaining wages and benefits and its "promising jobs" that provide career pathways to good jobs. Opportunity Industries help uphold the region's middle class and provide many of the pathways to it, especially for sub-baccalaureate workers.

Some Opportunity Industries also provide good and promising jobs for high-skill workers, who remain crucial to advancing prosperity in Central Indiana. A select group of Opportunity Industries can advance opportunity for both sub-baccalaureate workers and high-skill workers with a bachelor's degree. These industries drive the region's innovation and trade, fueling its growth.

Such insights into Central Indiana's Opportunity Industries can be useful to the region's leaders in a number of ways:

- The analysis takes into account not only whether jobs currently meet job quality criteria, but also how the number, quality, and pathways to jobs may change as the region's economy evolves in the years ahead, providing a sense of the direction of the region's labor market.
- The concentration of good jobs and the promising pathways to them in certain industries offers a lens that is useful to a number of regional actors, especially economic and workforce development organizations and the employers within these industries.
- The analysis is also able to reveal the aspects of Opportunity Industries that enable them to concentrate good and promising jobs: the occupations, knowledge, skills, and abilities that good jobs and promising career pathways comprise.

Still, certain findings reinforce the challenges facing Central Indiana. For one, growing enough good and promising jobs in Opportunity Industries will be difficult and still will not fully address the region's needs, especially in the cases of families with children and systemic intergenerational poverty.

Second, many of the career pathways that lead to good jobs do not reflect traditional models of career advancement, which may require new thinking and interventions to move incumbent workers into better-paying jobs.

Further, the region must improve access to opportunity for different types of workers: These findings reveal how workers' chances of obtaining a good job in Opportunity Industries vary by their education, gender, and race and ethnicity, suggesting yawning gaps in workers' access to good and promising jobs.

However, Central Indiana does have advantages to build on. The region boasts a higher share of jobs that are good or promising than most peer regions, providing a head start in its effort to advance opportunity.

DEFINING OPPORTUNITY

As the trends above reveal, sub-baccalaureate workers are finding fewer jobs that lead to economic security. Yet, few are likely to obtain a four-year bachelor's degree that would allow them to compete for better-paid positions. Instead, most must rely on opportunities to gain knowledge and experience in the region's labor market as they work their way toward better-paying jobs and, hopefully, economic security. These dynamics motivate this analysis, which is designed to identify good jobs that can provide economic security and independence and the promising career pathways to them.

This report defines two types of jobs relevant to improving earnings for people without a four-year college degree in Central Indiana who are working or looking for work, but still struggle to make ends meet. First, a *good job* pays at least \$37,440 per year, or \$18 per hour on a full-time, year-round basis, and provides employer-sponsored health insurance.³⁵ This wage represents the median annual earnings of full-time, year-round sub-baccalaureate workers in Central Indiana.³⁶ Employer-sponsored health insurance serves as a proxy for other benefits, such as paid leave, and assures most workers' independence from Medicaid and other public-assistance programs.

Second, if good jobs are the middle-class jobs that struggling sub-baccalaureate workers are striving to reach, then *promising* jobs are the entry-level jobs that provide career pathways to them. Promising jobs do not meet the criteria for a good job but, based on the authors' analysis of historical job-switching patterns and projections, would enable an incumbent worker to reach a good job within 10 years. Promising jobs are identified using a novel career-pathways analysis

based on records of how real people have moved between occupations or advanced within an occupation in recent years as they navigated local job opportunities. This analysis of past trends in occupational mobility is projected forward to predict how workers in Central Indiana will move between occupations over the next 10 years given the region's anticipated growth patterns.³⁷

Good and promising jobs are identified using occupations and then "mapped" to Central Indiana's industries. Jobs are labeled "good" or "promising" based on the *probability* that they meet the criteria for either category given jobholders' demographic characteristics and educational attainment. This yields precise findings, revealing what *share* of jobs in each of more than 800 occupations fall into each category of job quality. These occupational job quality metrics are then tied to industries using detailed data on the staffing patterns of each the region's industries.

The analysis uses standard definitions of industries and occupations. Industry definitions come from the North American Industrial

Classification System (NAICS).³⁸ Occupation definitions come from the Standard Occupation Classification (SOC) system.³⁹ Some industry and occupation titles have been abbreviated. Tables and text provide more detail on the titles to which these refer.

The result of this analysis is a nuanced reckoning of how Central Indiana's labor market opportunity will continue to evolve if recent trends continue. The findings also point to strategies Central Indiana's leaders can pursue to create more good and promising jobs for sub-baccalaureate workers; for example, by seeking to grow the industries where they are concentrated. Labor market intermediaries can use insights to identify and organize employers in industry sectors that provide better opportunities for workers to get a good foothold in the labor market. Education and training institutions can glean what types of skills and abilities students will need to thrive in the labor market as employer demands continue to shift. Crucially, the findings can provide a common understanding of how these systems can work together to advance opportunity.



FINDINGS

1. Central Indiana needs more good and promising jobs than it provides

Central Indiana provides hundreds of thousands of good and promising jobs for both its sub-baccalaureate workers and high-skill workers who have at least a bachelor's degree. However, despite the region's stock of good and promising jobs, Central Indiana does not provide enough. Tens of thousands of the region's workers do not hold a good job and need one to support themselves and their families. The good and promising jobs for these workers do not currently exist in the region's economy. Nor will Central Indiana grow nearly enough new good or promising jobs to help all these workers in the future. However, these findings on the region's shortage of good and promising jobs do point to strategies that would help increase the availability of good and promising jobs.

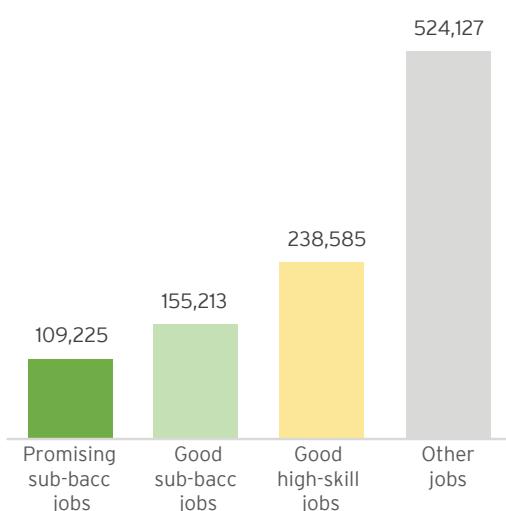
1A. CENTRAL INDIANA PROVIDES 264,000 GOOD OR PROMISING JOBS FOR ITS SUB-BACCALAUREATE WORKERS

About one-quarter of Central Indiana's jobs are good or promising jobs that provide opportunities for sub-baccalaureate workers to reach middle-class standards of economic security, as shown in Figure 10. The region had about 1,030,000 jobs in 2017, nearly 600,000 of which were held by sub-baccalaureate workers. Of these sub-baccalaureate job positions, about 155,000 were good jobs that paid family sustaining wages and provided health insurance. Another 109,000 of these jobs were promising jobs that provide sub-baccalaureate workers with promising career pathways that can lead incumbent workers to a good job within 10 years. Together, these good and promising jobs for sub-baccalaureate workers comprised 26 percent of all of Central Indiana's jobs in 2017.

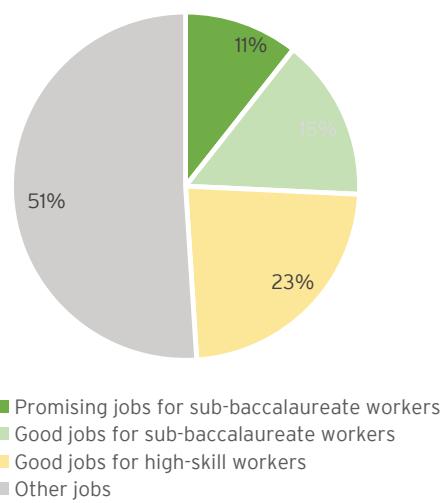
FIGURE 10

About 264,000 of Central Indiana's 1,030,000 jobs are good or promising jobs for sub-baccalaureate workers

Number of jobs by type, 2017



Share of jobs by type, 2017



Source: Authors' analysis of U.S. Census Bureau public-use microdata and EMSI estimates

Of course, Central Indiana also provides numerous good and promising jobs for high-skill workers who have at least a bachelor's degree. High-skill workers hold the remainder of the region's jobs not held by sub-baccalaureate workers. About 185,000 jobs held by high-skill workers were good jobs and another 54,000 were promising ones in 2017, amounting to another 23 percent of Central Indiana's total jobs. Because workers with a bachelor's degree have better chances of eventually obtaining good jobs, and because good and promising jobs for high-skill workers are quite similar in character, high-skill workers' good and promising jobs are considered together in the findings that follow.

However, half of the region's jobs are neither good nor promising jobs for workers of any level of education.⁴⁰ Central Indiana provides about 524,000 "other" jobs that do not meet job quality criteria for good jobs and do not appear to provide reliable career pathways to good jobs, for either sub-baccalaureate or high-skill workers.⁴¹

1B. CENTRAL INDIANA NEEDS MORE GOOD AND PROMISING JOBS FOR STRUGGLING WORKERS

Although Central Indiana boasts numerous good and promising jobs, it does not have enough to provide opportunity for all of its struggling workers to reach the middle class within the next 10 years. This deficit of opportunity is most severe for the region's sub-baccalaureate workers. About 900,000 people comprised Central Indiana's workforce in 2016. About 532,000 workers—or 60 percent of the region's workforce—did not have a bachelor's degree. Of these sub-baccalaureate workers, 144,000 struggled to make ends meet. However, few of these struggling sub-baccalaureate workers held one of Central Indiana's good or promising jobs. In fact, only 37,000 or 25 percent of the region's struggling sub-baccalaureate workers held a good or promising job in 2016. Central Indiana would need *an additional 107,000 good or promising jobs* for sub-baccalaureate workers to offer the

majority of these workers opportunities to reach the middle class within 10 years.

The region's high-skill workers face a much smaller deficit of opportunity. Central Indiana had 341,000 workers who had at least a bachelor's degree in 2016, about 25,700 of whom struggled to make ends meet. However, compared to sub-baccalaureate workers, these struggling high-skill workers had much better chances of holding a good or promising job that would eventually allow them to reach the middle class: 14,100 or 55 percent of struggling high-skill workers held a good or promising job. This means Central Indiana would need *an additional 11,600 good or promising jobs* to extend opportunities for a majority of its struggling high-skill workers to reach the middle class within 10 years.

Altogether, this means *Central Indiana faces a deficit of about 118,000 good or promising jobs*—more than a tenth of its current job base.⁴² Closing this deficit could yield important and long-lasting benefits for Central Indiana, though it would not completely address all the region's challenges around advancing opportunity:

- If Central Indiana were to provide an additional 118,000 good or promising jobs, it could reduce its ranks of workers who struggle to make ends meet by more than 70 percent, from about 20 percent of workers to 5.6 percent of workers.
- Providing opportunities for 72 percent of struggling workers to obtain good or promising jobs could lift nearly 36 percent of all people in struggling families into the middle class, cutting the ranks of struggling residents from 30 percent of the population to less than 19 percent.
- However, an additional 118,000 good or promising jobs would lift about 27 percent of children in struggling families into the middle class, reducing the share of the region's children growing up in struggling families from 39 percent to 28 percent.

Adding more good and promising jobs in Central Indiana can go a long way in advancing opportunity in the region, especially if the region were able to achieve such a dramatic increase as the one required. However, good and promising jobs as they are defined here still provide too little opportunity for many struggling parents to reach the middle class and leave more than one-quarter of children in struggling families. Further, the promising jobs identified here that provide reliable pathways to good jobs within 10 years would still leave many workers and families struggling during that decade. The labor market opportunities identified in the findings that follow point to several promising, large-scale, but ultimately insufficient strategies to fully address region's challenges around advancing opportunity.

1C. CENTRAL INDIANA'S DEFICIT OF GOOD AND PROMISING JOBS IS NOT LIKELY TO CLOSE ON ITS OWN

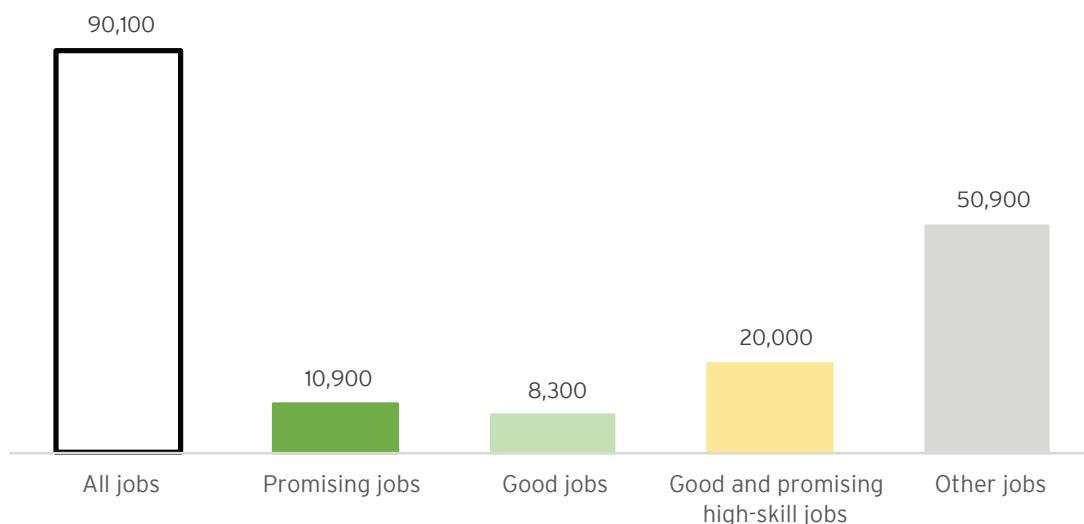
If the nation and Central Indiana each proceed on their current economic trajectories, Central Indiana will not close its current deficit of good and promising jobs through growth alone. In fact, the region's deficit of opportunity may grow as good and promising jobs shrink as a share of all jobs and the ranks of its struggling workers continue to grow with its population:

- First, Central Indiana is not projected to add as many jobs as it would need to close its current good and promising jobs deficit. Job growth projections suggest Central Indiana can expect to net about 90,000 new jobs between 2017 and 2027, as shown in Figure 11.
- Second, most of the region's new jobs will be "other" jobs. Other jobs already comprise a slight majority of jobs in the region and are expected to grow faster than good and promising jobs. Good and promising jobs for all workers will comprise only 44 percent of new jobs.

FIGURE 11

Central Indiana's good and promising jobs are projected to grow slower than "other" jobs

Central Indiana's projected rates of job growth by job quality type, 2017 to 2027



Source: Authors' analysis of U.S. Census Bureau public-use microdata, Moody's Analytics economic forecasts, BLS occupational employment projections, and EMSI estimates

- If these trends play out as anticipated, Central Indiana's good and promising jobs will shrink as a share of all jobs.

These projected rates of job growth imply that Central Indiana will likely need more than a growth strategy to close its good and promising jobs deficit. Even if these projections turn out to be too modest, the region will still face a challenge. To close the *current* deficit through growth alone would require the region to add an additional 118,000 good or promising jobs, which amounts to a job growth rate of 11.5 percent from 2017 to 2027—faster than the projected rate of 8.8 percent. However, even at this faster rate, good and promising jobs would need to comprise *all* the region's new jobs to close its current deficit of good and promising jobs.

Central Indiana's stock of good and promising jobs, and its growth trajectory, reveal two urgent priorities for its leaders. The region faces a large shortage of the sorts of jobs most of its workers need to support themselves and their families. If this shortage persists or grows, as current trends suggest, existing economic and social challenges may become even more intractable. To reverse these trends, Central Indiana's leaders must seek to drive the region's job growth toward those industries that expand economic opportunity, especially for sub-baccalaureate workers. Second, since the region has few opportunities to add as many good jobs as it needs, leaders must also improve the quality of jobs in industries that provide few good jobs and little chance of obtaining one.

2. Opportunity Industries concentrate Central Indiana's good and promising jobs

Central Indiana leaders can begin to close the region's good and promising jobs deficit and advance opportunity for more workers and their

families by focusing on Opportunity Industries. Opportunity Industries concentrate good and promising jobs, meaning the share of their jobs that qualify as good or promising is higher than the region's average. This means that faster growth of Opportunity Industries can increase the number and share of jobs that are good or promising.

By focusing on Opportunity Industries, the work they do, and the assets and advantages they need to compete, Central Indiana's leaders can grow more good and promising jobs in these industries and better connect workers searching for more opportunity to those jobs. Understanding industries that do not concentrate good or promising jobs can be useful too, indicating industries where job quality or career pathways to good jobs could use a closer look and/or improvement.

The findings on Central Indiana's Opportunity Industries that follow point to both promising strategies and enduring challenges for the region as its leaders seek to advance opportunity:

A. Central Indiana's good jobs and promising jobs for sub-baccalaureate workers are concentrated in different industries, suggesting the availability of good jobs matters most. Few industries concentrate both good jobs and promising jobs for sub-baccalaureate workers. This means that in many industries, there are fewer good jobs than promising ones. To access good jobs, many of the sub-baccalaureate workers without a good job would need find a job in a different industry. In fact, these data reveal that as much as 47 percent of promising career pathways to good jobs for sub-baccalaureate workers in Central Indiana require a job switch between two different industries. Therefore, sub-baccalaureate workers' advancement toward good jobs often depends not on promising entry-level jobs but on the availability and awareness of good jobs in Opportunity Industries.

B. Central Indiana's good jobs for sub-baccalaureate workers and its good or promising jobs for high-skill workers are concentrated in different industries, suggesting these different types of workers may require different growth strategies to advance their opportunity. The Opportunity Industries that concentrate the good jobs that matter most for sub-baccalaureate workers' career advancement are mostly in local-serving industry sectors, such as construction, health care, and government, or tradable industries that provide few good and promising jobs for high-skill workers, such as manufacturing or logistics. Many good and promising jobs for high-skill workers are concentrated in innovative, knowledge-intensive tradable industries that increase the region's prosperity and fuel its growth but provide relatively few good jobs for sub-baccalaureate workers.

C. However, a select but crucial group of industries provides above-average concentrations of good jobs for both types of workers, offering excellent targets for regional growth strategies. About 20 percent of the region's jobs are in 123 industries that concentrate good jobs for sub-baccalaureate workers and good or promising jobs for high-skill workers. Nearly half of these jobs are in 102 industries that are tradable—and are therefore crucial to advancing both opportunity and prosperity in Central Indiana.

D. Anticipated growth trends and the patterns of career advancement revealed here suggest that improving job quality is as important as growing more good jobs. Unfortunately, many of the Opportunity Industries that concentrate the good jobs that matter most for sub-baccalaureate workers' career advancement do not appear to be poised for growth. Industry sectors like manufacturing and construction provide many of Central Indiana's good jobs for sub-baccalaureate workers but are unlikely to add many new jobs in the years to come. Therefore, in addition to growth strategies, the region will

also need strategies that improve the quality of "other" jobs that provide neither family-sustaining wages and benefits nor pathways to good jobs. The contrast between industries that qualify as Opportunity Industries and those that do not can provide hints as to where the region's leaders might focus their efforts to improve job quality and suggest what effective efforts may look like.

These findings further illuminate the sources of Central Indiana's challenges but also point to potential solutions. Many of the industries that fuel the region's prosperity only incidentally advance opportunity for sub-baccalaureate workers. Meanwhile, industries that provide the most good jobs provide fewer than they used to and are growing more slowly.

However, these findings suggest that Central Indiana's leaders can advance opportunity in the region's economy by two means: First, by focusing scarce economic development resources on the Opportunity Industries that concentrate the good jobs that are crucial for sub-baccalaureate workers' upward mobility and drive its growth. Second, by working with employers to improve job quality and/or career pathways wherever possible.

2A. DIFFERENT INDUSTRIES CONCENTRATE GOOD JOBS AND PROMISING JOBS FOR SUB-BACCALAUREATE WORKERS

Opportunity Industries concentrate Central Indiana's good and promising jobs for sub-baccalaureate workers, providing indications of which industries should be targets of strategies to grow more good jobs and which should be a focus of efforts to improve job quality. About half of Central Indiana's good and promising jobs for sub-baccalaureate workers are within industries where they represent a greater share of jobs than the regional average of 26 percent, which could make them prospective targets for economic development efforts. However, the distribution of the region's good and promising jobs among

industries also reveals that increasing the number and awareness of good jobs in Opportunity Industries is what is most crucial to advancing opportunity.

Central Indiana's Opportunity Industries are found within a diverse set of sectors that concentrate 77 percent of all the region's good jobs and 43 percent of all promising jobs for sub-baccalaureate workers:

- **More than half of all jobs in the construction and utilities industry sectors are good or promising jobs for sub-baccalaureate workers,** as shown in Figure 12. The construction sector is, of course, involved in the construction of buildings and infrastructure. Utilities system construction (such as water and sewer infrastructure), civil engineering construction (roads and bridges), and commercial building construction provide the best opportunities for sub-baccalaureate workers to obtain good jobs in this sector. The utilities sector is quite small but provides excellent opportunities for sub-baccalaureate workers to obtain good or promising jobs in operating and maintaining utility infrastructure like water, sewer, and power systems.
- **Manufacturing, logistics, and wholesale industries also boast higher-than average shares of good or promising jobs for sub-baccalaureate workers.** Industries that manufacture durable goods and advanced technologies provide the best opportunities for sub-baccalaureate workers to obtain good jobs in this sector. The manufacture of food, beverages, and construction materials provide fewer opportunities. Many wholesale industries also provide excellent opportunities for sub-baccalaureate workers to obtain good or promising jobs. Logistics industries like air and rail transportation nearly exclusively provide good and promising jobs, most of them held by sub-baccalaureate workers. However, warehousing and fulfillment centers provide worse-than-average opportunities for sub-baccalaureate workers to obtain good jobs.

At least 21 percent and as much as 47 percent of sub-baccalaureate workers who hold promising jobs will have to switch industries to obtain a good job.

- **Government, corporate headquarters, and some industries in the information sector also provide near-average levels of good and promising jobs for sub-baccalaureate workers.** Nearly all types and levels of government provide plentiful numbers and high concentrations of good and promising jobs for sub-baccalaureate workers, including public administration, education, and public hospitals. Corporate headquarters, such as Eli Lilly and Co. and Anthem Inc., also provide near-average concentrations of good and promising jobs for sub-baccalaureate workers. The information sector includes newspaper and periodical publishers; software development; multi-media production and distribution such as movies, television, and music; and telecommunications such as cable and Internet providers. However, only publishing and telecommunications provide better-than-average opportunities for sub-baccalaureate workers. Government, headquarters, and information stand out for providing high concentrations of good and promising jobs for high-skill workers too.
- **Likewise, the administrative services sector and the real estate, rental, and leasing sector each provide near-average levels of opportunity for sub-baccalaureate workers.** However, unlike the sectors listed above, these sectors and others disproportionately concentrate promising jobs rather than good ones. The administrative services sector primarily comprises two types of

industries. First, office and temporary employment services, such as back-office services, “temp” agencies, call centers, and job recruiters. These provide few good jobs but provide high concentrations of promising jobs for sub-baccalaureate workers. Second, waste management, which provides high concentrations of both good and promising jobs for sub-baccalaureate workers. Real estate, rental, and leasing not only includes real estate professionals like realtors but also equipment rentals, such as construction and logistics machinery, office equipment, and automobiles—all of which provide below-average concentrations of good jobs but high concentrations of promising jobs for sub-baccalaureate workers.

The different distributions of good jobs and promising jobs for sub-baccalaureate workers

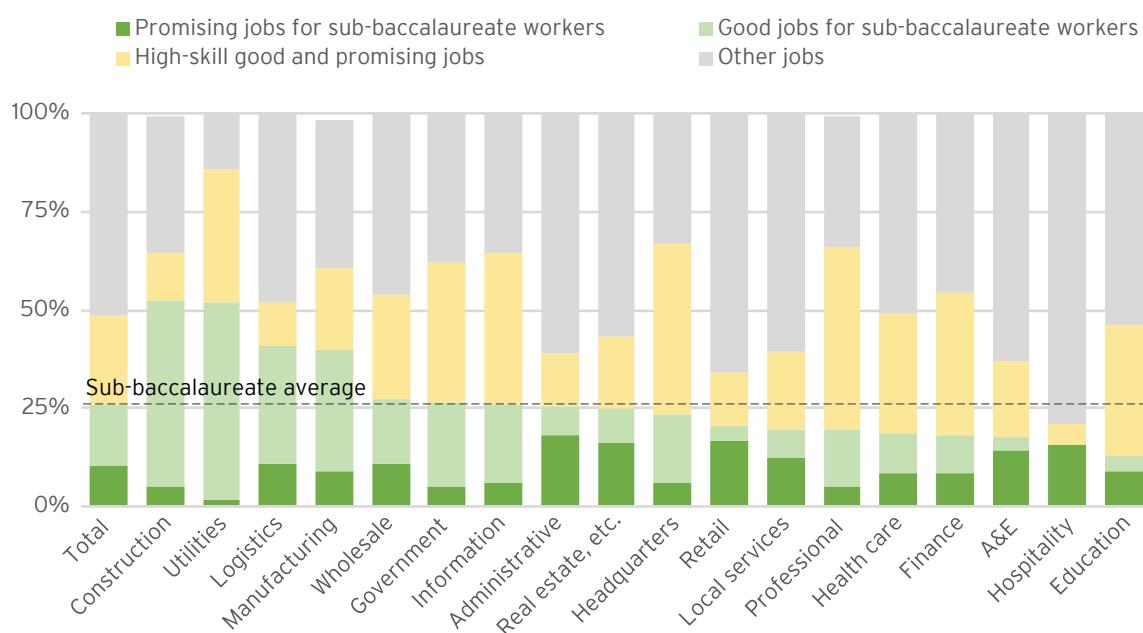
among Central Indiana’s industries reveals how many sub-baccalaureate workers work their way from low-paying jobs to good jobs. Some sectors, such as manufacturing, construction, logistics, and government provide many more good jobs than promising ones, suggesting there is ample room for workers with low-paid jobs to move up in these sectors. Together, these four sectors comprise 63 percent of Central Indiana’s good jobs for sub-baccalaureate workers but just 21 percent of the region’s promising jobs for sub-baccalaureate workers.

Other sectors provide high concentrations of promising jobs for sub-baccalaureate workers, but few good jobs for these workers to move into. Instead, most of the sub-baccalaureate workers with promising jobs in these sectors would have to switch sectors to find a good job. For example, the retail sector and the hospitality sector

FIGURE 12

Central Indiana’s good jobs for sub-baccalaureate workers are concentrated in different industries from those that concentrate promising jobs for those workers

Concentration of good and promising jobs by industry sector, 2017



Source: Authors’ analysis of U.S. Census Bureau public-use microdata and EMSI estimates

together provide nearly 34,000 or 31 percent of the region's promising jobs for sub-baccalaureate workers but only 4,500 or 3 percent of good jobs for sub-baccalaureate workers. This means that although one out of every five sub-baccalaureate workers in retail and hospitality hold a promising job, at least half of these workers who hold promising jobs in these sectors will have to switch

to other industries to obtain a good job. Other industry sectors exhibit similar dynamics, with few career ladders within industries, requiring workers to switch industries to obtain a good job. In fact, the different distributions of good and promising jobs for sub-baccalaureate workers among industries imply that at least 21 percent and as much as 47 percent of sub-

TABLE 1

Central Indiana's good jobs for sub-baccalaureate workers and good and promising jobs for high-skill workers are each highly concentrated but in different industries

Industry sectors listed by share of region's good sub-baccalaureate jobs

| Industry Sector (NAICS) | Total Jobs | Good sub- baccalaureate jobs | | Promising sub- baccalaureate jobs | | High-skill jobs | | Other jobs | |
|------------------------------------|-----------------------|---|-------|--|-------|------------------------|-------|-------------------|-------|
| | Number | Number | Share | Number | Share | Number | Share | Number | Share |
| Total*: | 1,030,801 | 155,213 | 100% | 109,255 | 100% | 238,585 | 100% | 524,127 | 100% |
| Manufacturing (31-33) | 92,273 | 28,635 | 18% | 8,130 | 7% | 19,096 | 8% | 34,998 | 7% |
| Government (90) | 129,527 | 27,294 | 18% | 6,763 | 6% | 46,643 | 20% | 48,278 | 9% |
| Construction (23) | 51,244 | 24,275 | 16% | 2,679 | 2% | 6,210 | 3% | 17,767 | 3% |
| Logistics (48-49) | 58,348 | 17,688 | 11% | 6,251 | 6% | 6,306 | 3% | 28,021 | 5% |
| Healthcare (62) | 132,384 | 13,589 | 9% | 10,954 | 10% | 40,416 | 17% | 67,387 | 13% |
| Professional (54) | 52,280 | 7,683 | 5% | 2,595 | 2% | 24,110 | 10% | 17,637 | 3% |
| Wholesale (42) | 40,608 | 6,760 | 4% | 4,367 | 4% | 10,733 | 4% | 18,638 | 4% |
| Administrative (56) | 78,753 | 5,747 | 4% | 14,407 | 13% | 10,464 | 4% | 47,948 | 9% |
| Finance (52) | 49,626 | 4,726 | 3% | 4,247 | 4% | 18,065 | 8% | 22,578 | 4% |
| Retail (44-45) | 116,515 | 4,289 | 3% | 19,465 | 18% | 15,660 | 7% | 76,886 | 15% |
| Local services (81) | 44,683 | 3,273 | 2% | 5,513 | 5% | 8,859 | 4% | 26,838 | 5% |
| Information (51) | 14,636 | 2,919 | 2% | 875 | 1% | 5,682 | 2% | 5,097 | 1% |
| Utilities (22) | 4,699 | 2,351 | 2% | 84 | 0% | 1,595 | 1% | 649 | 0% |
| Headquarters (55) | 13,146 | 2,277 | 1% | 772 | 1% | 5,762 | 2% | 4,323 | 1% |
| Real estate, etc. (53) | 16,437 | 1,431 | 1% | 2,644 | 2% | 3,011 | 1% | 9,306 | 2% |
| Education (61) | 23,046 | 902 | 1% | 2,047 | 2% | 7,712 | 3% | 12,349 | 2% |
| A&E (71) | 17,588 | 612 | 0% | 2,513 | 2% | 3,355 | 1% | 11,084 | 2% |
| Hospitality (72) | 91,672 | 215 | 0% | 14,398 | 13% | 4,514 | 2% | 72,541 | 14% |

*Table excludes agriculture and mining industries; columns may not sum to total.

Source: Authors' analysis of U.S. Census Bureau public-use microdata and EMSI estimates

baccalaureate workers who hold promising jobs will have to switch industries to obtain a good job. This is true of industries in a number of large sectors besides retail and hospitality, including arts, entertainment, and recreation (A&E); local services, which comprises auto repair shops, dry cleaners, religious and civic institutions, and other services; real estate and leasing; and administrative services.

These cross-industry career pathways should spur new thinking about how workers access opportunity. Opportunity Industries that concentrate Central Indiana's *good jobs*, such as manufacturing, construction, and parts of logistics, are the industries that seem to really matter for advancing opportunity for sub-baccalaureate workers. Although some of the sub-baccalaureate workers who hold promising jobs can advance to good jobs in the same industry, many must switch industries. In either case, the availability of good jobs is what matters for these workers' advancement. Job growth in an industry that provides few promising jobs but many good jobs will create more of both types of jobs nonetheless. Job growth in such an industry will also provide more chances for workers in jobs with limited advancement opportunities in other industries to find cross-industry pathways to good jobs.

However, growing more good jobs may prove challenging. The Opportunity Industries that concentrate the region's good jobs for sub-baccalaureate workers are not growing as fast as others. For example, industries in the manufacturing and construction sectors provide 34 percent of Central Indiana's good jobs for sub-baccalaureate workers. Both sectors shrank over the 10-year period from 2006 to 2016. Although they have since stabilized, neither appears poised for rapid growth in coming years. Other Opportunity Industries are growing faster and boast similarly high concentrations of good jobs but are relatively small, such as the utilities, wholesale, and information industry sectors. Meanwhile, large industry sectors such as government and health care that provide tens

of thousands of good jobs for sub-baccalaureate workers typically grow with the rest of the economy; since these are primarily local-serving industries, they facilitate but do not drive the region's growth.

2B. HIGH-SKILL WORKERS HAVE JOBS IN INDUSTRIES WITH FEW SUB-BACCALAUREATE WORKERS

Like jobs for sub-baccalaureate workers, good and promising jobs for high-skill workers who have a bachelor's degree are also concentrated within select industries. About 70 percent of good and promising jobs for high-skill workers are found in industries where the share of such jobs exceeds the regional average of 23 percent.⁴³ Just as with industries that concentrate good and promising jobs for sub-baccalaureate workers, growing these industries can advance opportunity for high-skill workers. However, relatively few good and promising jobs for high-skill workers are found in the same industries that concentrate such jobs for sub-baccalaureate workers, which means advancing opportunity for both types of workers may require more than one strategy.

Central Indiana's good and promising jobs for high-skill workers are most concentrated in a small handful of industry sectors:

- **Over 40 percent of jobs in the professional services and corporate headquarters industry sectors are good or promising for high-skill workers.** These two sectors comprise similar types of white-collar workers and occupations but perform different functions. Corporate headquarters oversee the management of a single business. The professional services sector includes architecture and engineering services, computer systems design, legal services, accounting services, advertising, management consultancies, and research and development services. All these sub-industries within the professional services sector provide above-average concentrations of good and promising jobs for high-skill workers.

- **At least 30 percent of jobs in the information, finance and insurance, government, utilities, education, and health care industry sectors are good or promising for high-skill workers.** Of these, government and health care provide about 20 percent of all the region's jobs but 25 percent of Central Indiana's high-skill good and promising jobs. After government, the health care and social assistance sector provides the most good and promising jobs for high-skill workers of any sector. Most of the jobs in this sector are in private health care systems, such as general hospitals and doctor's offices. Like public education, private education institutions also offer many good and promising jobs for high-skill workers, such as teachers and professors.

The industries that concentrate the good jobs that matter for sub-baccalaureate workers' career advancement typically provide few

good and promising jobs for high-skill workers, and vice versa. Most industries do not provide ample opportunity for both types of workers. In industries that concentrate good jobs for sub-baccalaureate workers, such jobs outnumber high-skill good and promising jobs by more than seven-to-one. On the other hand, in industries that concentrate good and promising jobs for high-skill workers, such jobs outnumber good jobs for sub-baccalaureate workers by three-to-one. These different concentrations of good jobs for sub-baccalaureate workers and good and promising jobs for high-skill workers may complicate efforts to directly advance opportunity for both. Many of the industries that concentrate good and promising jobs for high-skill workers, such as industries in the professional services, corporate headquarters, information, and finance and insurance sectors, are also tradable industries and therefore fuel the region's growth and prosperity.



2C. A SELECT GROUP OF OPPORTUNITY INDUSTRIES CAN ADVANCE OPPORTUNITY FOR ALL WORKERS

The distribution of Central Indiana's good and promising jobs for workers of different levels of education reveal a fundamental challenge for this region and others: Many of the good jobs that are crucial to advancing opportunity for sub-baccalaureate workers are concentrated in local-serving industries that provide few good or promising jobs for high-skill workers. These local-serving industries do not typically drive regional economic growth the same way tradable industries do.

As noted above, businesses in tradable industries sell a majority of their products and services to customers outside of the region, which brings new income to Central Indiana. Much of this new income is passed on to workers, who then spend it on groceries, eating out, health care, and housing. Additionally, because tradable sectors participate in larger national and international markets, they must be more competitive, which means they also tend to drive productivity and wage growth—measures associated with rising prosperity. High-skill workers are often key to these industries' competitiveness. This is why economic development organizations award a disproportionate share of incentives to businesses in tradable industries: because they disproportionately drive growth and prosperity.

A select group of Central Indiana's Opportunity Industries concentrate good jobs for sub-baccalaureate workers and also qualify as tradable industries, which makes these select industries crucial to the region's efforts to advance opportunity and prosperity directly. This select group of industries is identified at the most precise level of industry disaggregation instead of by the industry sectors discussed above. At this level, there are over 800 industries. Of these, 102 industries meet the following set of criteria:

1. Provide above-average concentrations of the good jobs that are most crucial for advancing opportunity for sub-baccalaureate workers;
2. Provide above-average concentrations of good and promising jobs for high-skill workers, who comprise a large share of the region's workforce and disproportionately drive its productivity;
3. Are tradable industries, meaning they sell a majority of their products and services to businesses and consumers outside of Central Indiana, bringing new income to the region.

These tradable industries that concentrate labor market opportunity for both sub-baccalaureate and high-skill workers make prime targets for regional growth efforts:

- Together, these 102 tradable industries comprise 92,000 or about 9 percent of the region's jobs.
- About 26,000 or 28 percent of these jobs are good or promising jobs for sub-baccalaureate workers. About 21,000 are good jobs and 5,000 are promising jobs.
- Another 38,000 or 42 percent are good or promising jobs for high-skill workers.
- This group of Opportunity Industries therefore provides over 13 percent of the region's good jobs for sub-baccalaureate workers and nearly 16 percent of its good and promising jobs for high-skill workers.

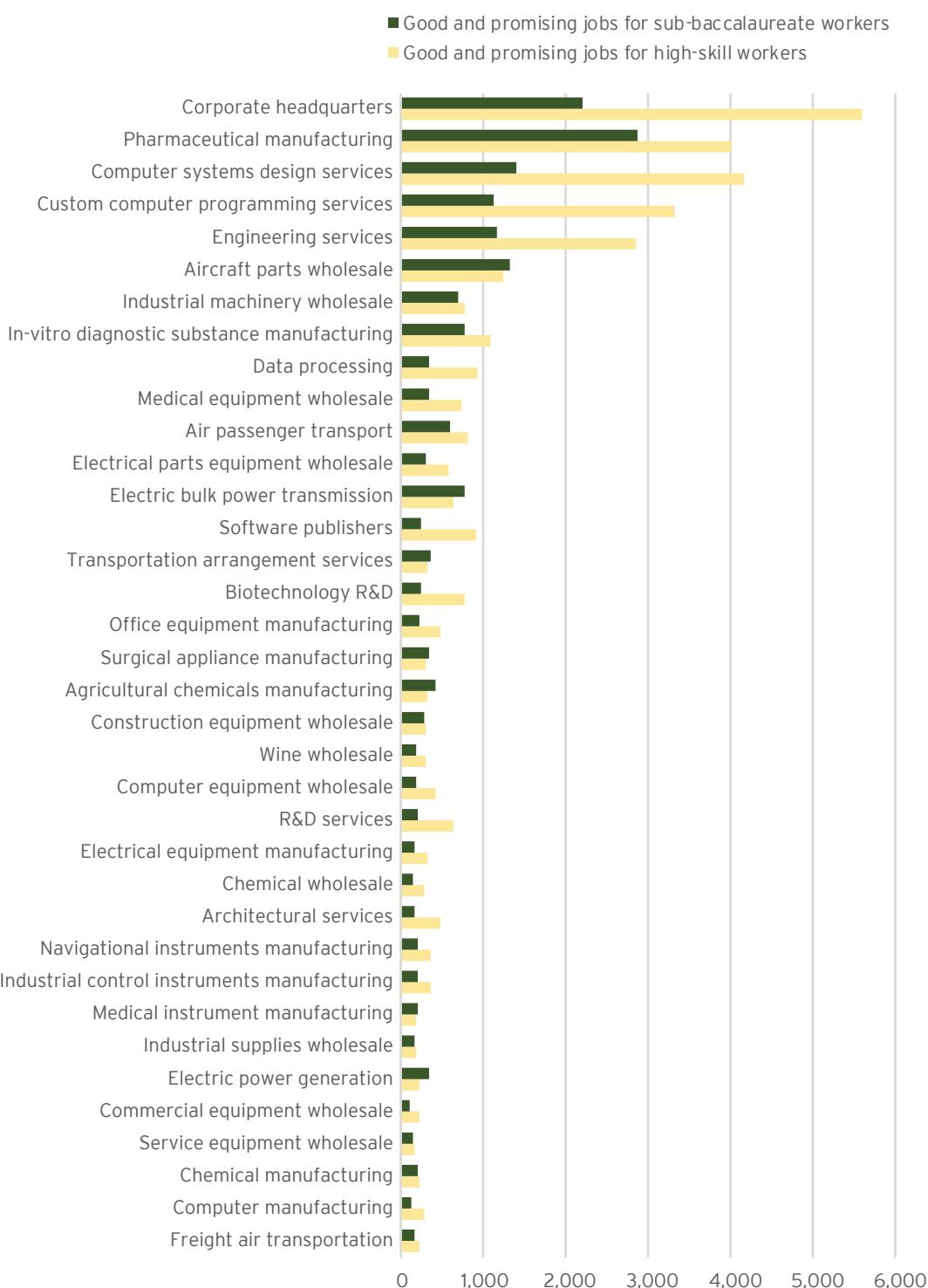
Of the 102 Opportunity Industries that meet these criteria, those that provide more than 500 jobs overall are shown in Figure 13.

Large industries such as corporate headquarters, pharmaceutical manufacturing, computer services, and engineering services represent the sort of tradable and highly innovative industries that not only concentrate economic opportunity for both sub-baccalaureate and high-skill workers but can also fuel the region's growth and innovation. Likewise, a broad set of industries

FIGURE 13

Tradable portions of Central Indiana's manufacturing, wholesale, and professional services industry sectors concentrate good and promising jobs for all workers

Good and promising jobs in Central Indiana's Opportunity Industries, 2017



Source: Authors' analysis of U.S. Census Bureau public-use microdata and EMSI estimates

involved in the manufacture and wholesale of high-tech products such as machines, medical equipment, and electronics are individually small but together provide 6,500 good and promising jobs for sub-baccalaureate workers and 9,000 good and promising jobs for high-skill workers. Industries involved in transportation and goods movement, such as air and rail transportation, can also advance the region's growth.

Growing these industries that concentrate opportunity and fuel growth and innovation may not completely close the region's good and promising jobs gap. However, focusing scarce economic development resources on supporting the growth and competitiveness of firms in tradable Opportunity Industries will likely yield substantial benefits and help to close the region's good and promising jobs shortage faster than a focus on other types of industries. The region can also continue to look to tradable industries that disproportionately concentrate good and promising jobs for high-skill workers. Although these do not directly advance opportunity for sub-baccalaureate workers, they do advance the region's prosperity and can therefore help fuel the growth of good and promising jobs for sub-baccalaureate workers in other industries.

2D. IMPROVING JOB QUALITY IN INDUSTRIES THAT PROVIDE FEW GOOD JOBS WOULD ADVANCE OPPORTUNITY

Even if Central Indiana were to make bold investments in the tradable Opportunity Industries that can advance its opportunity and prosperity, it is unlikely to add enough new good and promising jobs to close its opportunity deficit. Since the region is unlikely to close this deficit through growth alone, Central Indiana would likely also need strategies to improve the quality of its existing jobs. The 118,000 additional good and promising jobs the region needs amount to under 23 percent of its stock of "other" jobs. Many of these "other" jobs could be made good jobs through small improvements in wage levels, additional hours, or by extending benefits.

Similarly, improving career pathways within companies or across industries could potentially transform more of these "other" jobs into promising jobs.

Looking again at higher levels of industry aggregation, several industry sectors can improve the quality of the jobs they offer. "Other" jobs—those that are neither good nor promising—represent more than 50 percent of all jobs in arts and entertainment, administrative services, health care and social assistance, local services, real estate, retail, and private education. Within the hospitality sector, 80 percent of food service jobs and 75 percent of jobs in hotels and motels are other jobs. Retail and hospitality provide many entry-level jobs and some of these jobs are promising ones. In fact, retail and hospitality provide more than 31 percent of the region's promising jobs for sub-baccalaureate workers, thanks in part to the large number of jobs they provide in general. Yet among workers who hold entry-level jobs in these sectors, chances of reaching a good job within 10 years are slim.

Employers in some industries appear to be better positioned to both improve the quality of their own jobs and to influence employers in other industries to do the same. Industry sectors such as logistics and health care, commonly considered to provide many good jobs, provide nearly one "other" job for each good or promising one. However, many of the "other" jobs in these industries are on the cusp of qualifying as good jobs. Improvements in job quality (wages and benefits) may help many of these workers achieve economic security. Government and health care, which comprise 22 percent of the region's "other" jobs, may have an interest in improving job quality since families' economic security can reduce costs to these institutions (and sometimes raise their revenues). Because government and health care provide so many jobs, even small improvements in the quality of their jobs can affect how other employers compete for talent, potentially indirectly improving job quality in other parts of the region's economy.

CENTRAL INDIANA'S ADVANCED INDUSTRIES ARE RICH WITH OPPORTUNITY

Central Indiana has long specialized in “advanced industries” that concentrate STEM workers and are responsible for most U.S. innovation.⁴⁴ In fact, the state of Indiana boasts the second-highest concentration of jobs in advanced industries among all states.⁴⁵ Advanced industries related to manufacturing and life sciences have traditionally been core to Central Indiana’s growth and prosperity. In recent years, the region has also attracted emerging specializations in advanced business services, such software development, computer systems design, and scientific and technical consulting.

The region’s continued specialization in advanced industries is no accident. More than 40 percent of the state of Indiana’s economic development incentives awarded within the Central Indiana region since 2006 have gone to businesses in advanced industries.⁴⁶ Nearly half of the city of Indianapolis’s incentive spending from 2012 and

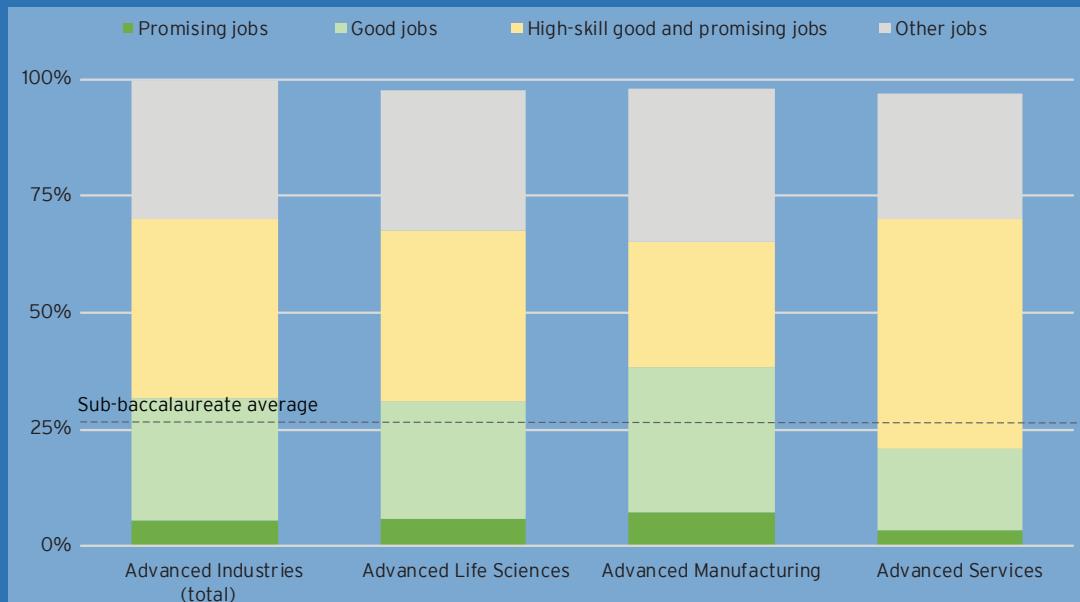
2016 was awarded to these industries.⁴⁷ Civic groups have also implemented strategies to increase the competitiveness of firms in advanced industries.

One reason the state, localities, and civic groups have devoted this attention to advanced industries is because they provide a bounty of good jobs for both high-skill and sub-baccalaureate workers, as shown in Figure 14. Advanced manufacturing industries provide higher concentrations of good and promising jobs for sub-baccalaureate workers than the regional average, and all types of advanced industries provide greater concentrations of good and promising jobs for high-skill workers. In fact, advanced industries provide 9.1 percent of the region’s jobs but 11.4 percent of its good and promising jobs for sub-baccalaureate workers and 14.8 percent of good and promising jobs for high-skill workers. These patterns make advanced industries part of a select group of Central Indiana’s Opportunity Industries that concentrate good and promising jobs for both high-skill and sub-baccalaureate workers.

FIGURE 14

Advanced industries provide good and promising jobs for high- and mid-skill workers

Good and promising jobs’ share of total employment in advanced industries* in 2017



* Job quality cannot be determined for jobs in some occupations; columns may not sum to 100 percent.
Source: Authors’ analysis of U.S. Census Bureau public-use microdata and EMSI estimates

3. Pathways to Central Indiana's good jobs involve moves between occupations

Central Indiana's Opportunity Industries entail jobs in many different types of *occupations*, from jobs in production occupations like machinists and welders to administrative occupations like secretaries and office clerks. The following examination of the types of occupations that concentrate good and promising jobs within Central Indiana's Opportunity Industries reveal new insights into not only the types of jobs that provide the best labor-market opportunities, but also how workers navigate career pathways to obtain good jobs and the knowledge and skills they tend to acquire along the way.

Findings on the types of occupations that concentrate Central Indiana's good and promising jobs provide greater detail on the nature of opportunity for the region's workers:

A. Good and promising jobs for sub-baccalaureate workers are concentrated in traditional blue-collar occupations, raising questions about their sustainability. Several of these blue-collar occupations map easily to the Opportunity Industries identified above. For example, construction trades provide among the highest concentrations of good and promising jobs for sub-baccalaureate workers, followed by maintenance and repair occupations, production occupations in manufacturing, and transportation occupations in logistics industries. Workers in maintenance and repair occupations, which also concentrate good and promising jobs, are often employed in a number of sectors, including construction, manufacturing, logistics, and utilities. As noted above, jobs in these predominantly blue-collar industries and occupations are not well poised for growth.

B. The vast majority of promising career pathways to good jobs for sub-baccalaureate workers involve a major career switch, suggesting many promising career pathways

are non-linear. Findings on Opportunity Industries reveal that as many as 47 percent of sub-baccalaureate workers with a promising job would *need* to switch industries to obtain a good job. The following findings on occupations reveal that 75 percent of sub-baccalaureate workers *will* switch between occupations in two different occupation groups in order to obtain a good job, marking a significant career change. In some occupations, nearly all sub-baccalaureate workers with promising jobs will switch to a different occupation to get a good job. In occupations where advanced education or training is required, fewer workers will switch.

C. Sub-baccalaureate workers' upward mobility towards good jobs has tended to involve the acquisition of in-demand knowledge and skills, but demand for these skills is shrinking. Sub-baccalaureate workers in career pathways that provide the highest rates of upward earnings mobility tend to acquire knowledge and skills associated with construction, maintenance and repair, and manufacturing—areas of expertise that take time to acquire. However, these skill sets are decreasing in their importance to the labor market. Meanwhile, high-skill workers' advancement toward the highest-paid jobs tends to involve the acquisition or demonstration of abstract cognitive abilities and social skills that employers increasingly seek as new technologies take over routine tasks.

These findings on occupations that concentrate good and promising jobs reveal incredible churn in the region's labor market, especially for sub-baccalaureate workers working their way from low-paid jobs to good jobs. This may require new thinking about models of career advancement and credentialing. The findings also reveal that many traditional career advancement models like career ladders may be shrinking as job growth in blue-collar occupations slows. Meanwhile, the skills and abilities most closely associated with high rates of upward earnings mobility enjoy increasing

demand in the region's labor market but are typically acquired in four-year degree programs, which may put more emphasis on new models of continuous learning for sub-baccalaureate workers.

3A. GOOD JOBS FOR SUB-BACCALAUREATE WORKERS ARE HIGHLY CONCENTRATED IN SELECT OCCUPATION GROUPS

Good and promising jobs for sub-baccalaureate workers entail many different types of work and in many different work environments, indicating the variety of opportunities available to sub-baccalaureate workers. One of the most prevalent types of good and promising jobs in Opportunity Industries are traditional blue-collar jobs in construction, maintenance, production, and transportation occupations that have defined labor market opportunity for decades. Together, these occupation groups contain 54 percent of the region's good jobs and 29 percent of promising jobs for sub-baccalaureate workers. However, several other types of occupations come close to providing similar concentrations of good and promising jobs for sub-baccalaureate workers.

These occupations provide among the best chances for a sub-baccalaureate worker to find a good job and can also provide good career ladders, such as apprenticeships:

- Fifty-seven (57) percent of all jobs in **construction trades** are good jobs and another 5 percent are promising for sub-baccalaureate workers, as shown in Figure 15. Entry-level construction helper jobs enjoy a higher-than-average share of jobs that are good or promising.
- **Maintenance occupations**, such as vehicle and equipment mechanics and equipment repairers and installers also provide high concentrations of good or promising jobs for sub-baccalaureate workers. As much as 95 percent of jobs qualify as good in some of these occupations.

- Within **production occupations**, most jobs for machinists, equipment operators, welders, and model makers qualify as either good or promising. A smaller portion of jobs in textiles, carpentry, and food production qualify as good but an above-average share is promising.
- Although most of the jobs in these major occupation groups mentioned above are for skilled frontline workers, there are also about 9,500 good jobs in **supervisory foreman-type occupations**, 79 percent of which are held by sub-baccalaureate workers.

Unlike construction, maintenance, and production occupations, where most jobs are good or at least promising for sub-baccalaureate workers, transportation occupations are more divided in terms of quality. Within **transportation and material moving occupations**, just about any job related to rail or air transportation is a good one for either sub-baccalaureate or baccalaureate workers, from rail yard engineers, to air traffic controllers, to air cargo handlers.

However, for each good job in transportation and material moving occupations as a whole, there is more than one "other" job that does not provide sufficient levels of pay or benefits. A majority of jobs for freight and stock handlers, packagers, and machine feeders—many of which are found in warehouse and fulfillment centers—qualify as other jobs. Industrial truck drivers, bus drivers, and other motor vehicle operators and delivery jobs also have higher-than-average shares of other jobs.



Outside of these traditional blue-collar occupations, a few other major occupation groups also provide above- or near-average shares of good and promising jobs for sub-baccalaureate workers:

- Nearly half of jobs in **protective services** are good jobs or promising jobs for sub-baccalaureate workers. Almost all jobs for public-security workers such as police officers, firefighters, and bailiffs are good jobs. However, fewer private-sector protective service jobs, such as security guards, qualify as either good or promising.
- Among **health care practitioner occupations**, a little less than half of jobs held by sub-

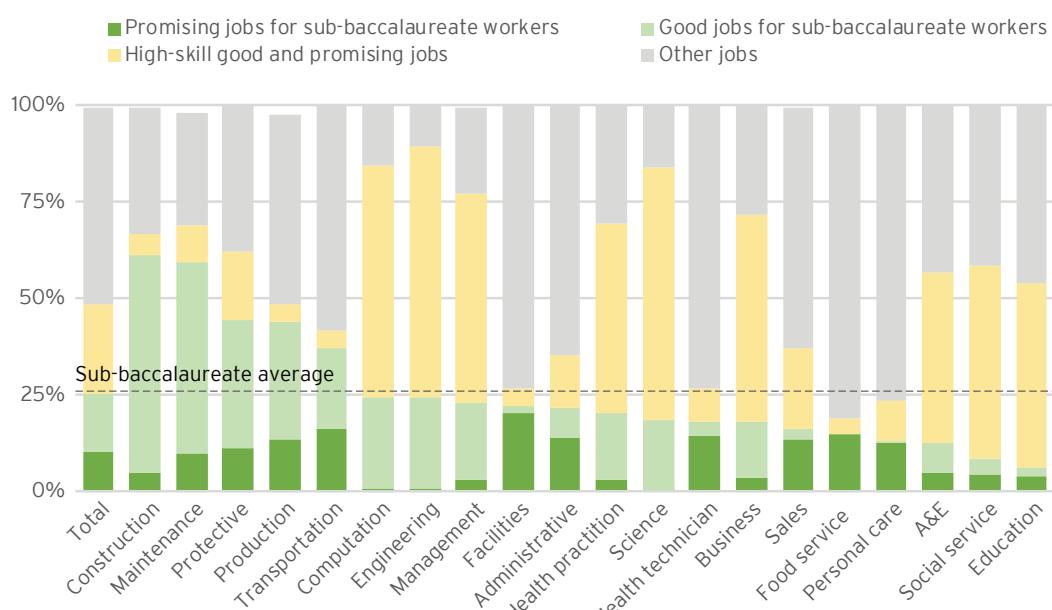
baccalaureate workers are good or promising jobs, but these represent only about one-fifth of all jobs in this occupation group. About three-quarters of good health care practitioner jobs are in occupations such as nursing, technologists, therapists, and emergency medical technicians.

- A smaller portion of jobs in **administrative occupations** such as secretaries or clerks qualify as good or promising jobs for sub-baccalaureate workers but, because this occupation group comprises so many jobs in total, it represents 8 percent of the region's good jobs and 20 percent of its promising jobs for sub-baccalaureate workers.

FIGURE 15

Central Indiana's good and promising jobs are concentrated in select occupation groups

Concentration of good and promising jobs by occupation group, 2017



Source: Authors' analysis of U.S. Census Bureau public-use microdata and EMSI estimates

TABLE 2

Some major occupation groups that concentrate opportunity provide relatively few jobs

Occupation groups listed by share of region's good sub-baccalaureate jobs

| Occupation Group (SOC) | Total Jobs | Good sub-baccalaureate jobs | | Promising sub-baccalaureate jobs | | High-skill jobs | | Other jobs | |
|--------------------------|------------|-----------------------------|--------|----------------------------------|--------|-----------------|--------|------------|--------|
| | | Number | Number | Share | Number | Share | Number | Share | Number |
| Total*: | 1,030,801 | 155,213 | 100% | 109,255 | 100% | 238,585 | 100% | 524,127 | 100% |
| Construction (47) | 38,751 | 21,955 | 14% | 1,859 | 2% | 2,149 | 1% | 12,663 | 2% |
| Production (51) | 69,572 | 21,031 | 14% | 9,582 | 9% | 3,291 | 1% | 33,931 | 6% |
| Maintenance (49) | 42,255 | 20,956 | 14% | 4,237 | 4% | 4,000 | 2% | 12,301 | 2% |
| Transportation (53) | 95,250 | 19,609 | 13% | 15,680 | 14% | 4,603 | 2% | 55,359 | 11% |
| Health practitioner (29) | 70,353 | 12,335 | 8% | 2,123 | 2% | 34,308 | 14% | 21,586 | 4% |
| Administrative (43) | 156,714 | 12,266 | 8% | 22,078 | 20% | 21,427 | 9% | 100,943 | 19% |
| Management (11) | 55,785 | 11,092 | 7% | 1,861 | 2% | 30,044 | 13% | 12,569 | 2% |
| Business (13) | 56,880 | 8,136 | 5% | 2,069 | 2% | 30,562 | 13% | 16,113 | 3% |
| Protective (33) | 23,693 | 7,842 | 5% | 2,684 | 2% | 4,172 | 2% | 8,994 | 2% |
| Computation (15) | 28,442 | 6,748 | 4% | 287 | 0% | 16,963 | 7% | 4,444 | 1% |
| Engineering (17) | 14,496 | 3,386 | 2% | 161 | 0% | 9,429 | 4% | 1,520 | 0% |
| Sales (41) | 107,017 | 2,926 | 2% | 14,606 | 13% | 22,369 | 9% | 66,728 | 13% |
| Science (19) | 9,983 | 1,781 | 1% | 60 | 0% | 6,530 | 3% | 1,612 | 0% |
| A&E (27) | 14,699 | 1,108 | 1% | 736 | 1% | 6,532 | 3% | 6,323 | 1% |
| Health technician (31) | 24,960 | 898 | 1% | 3,675 | 3% | 2,062 | 1% | 18,325 | 3% |
| Education (25) | 43,017 | 889 | 1% | 1,806 | 2% | 20,549 | 9% | 19,773 | 4% |
| Social service (21) | 15,677 | 644 | 0% | 726 | 1% | 7,783 | 3% | 6,523 | 1% |
| Facilities (37) | 31,980 | 589 | 0% | 6,567 | 6% | 1,385 | 1% | 23,439 | 4% |
| Personal care (39) | 28,817 | 155 | 0% | 3,643 | 3% | 3,039 | 1% | 21,980 | 4% |
| Food service (35) | 92,560 | 112 | 0% | 13,931 | 13% | 3,609 | 2% | 74,909 | 14% |

*Table excludes agriculture and legal occupations; columns may not sum to total.

Source: Authors' analysis of U.S. Census Bureau public-use microdata and EMSI estimates

Many occupations that provide above-average concentrations of good jobs for sub-baccalaureate workers also employ many high-skill workers:

- In **health care practitioner occupations**, nurses and nurse's assistants with less than a bachelor's degree work with medical professionals such as registered nurses and physician's assistants.
- Nearly as many sub-baccalaureate workers as high-skilled workers have good jobs in some **computer, engineering, and science occupations** such as computer systems analysts, computer network architects, computer support specialists, scientific technicians, and drafters.
- Sub-baccalaureate workers hold about one-third of good jobs in **business occupations**, such as operations specialists, cost estimators, training specialists, purchasing agents, and claims adjusters.
- Even in **management occupations**, sub-baccalaureate workers hold about one-third of good jobs, in occupations such as general managers, construction managers, financial managers, medical services managers, computer systems managers, and sales managers.

Most major occupation groups that concentrate opportunity for sub-baccalaureate workers tend to provide either good jobs or promising jobs but not high concentrations of both. This is especially true among occupation groups that over-represent "other" jobs, such as personal care, food service, sales, administrative, and facilities occupations, which offer few good jobs but many promising ones. Just as with industries, these occupations provide few job ladders from low-paying jobs to good jobs within an occupation. Instead, workers must move between major occupation groups to access better jobs.

3B. A MAJORITY OF SUB-BACCALAUREATE WORKERS WILL SWITCH CAREERS TO GET A GOOD JOB

The estimates of occupational mobility that underlie the identification of Central Indiana's promising jobs reveals just how important occupational mobility is to most promising career pathways for the region's sub-baccalaureate workers. For workers who have only a high school diploma, 77 percent will switch to a different major occupation group as they advance toward better-paying jobs over the next 10 years. Among workers who have some post-secondary education, like some college experience, a certificate, or an associate degree, 75 percent of workers in promising career pathways will switch to a different major occupation group.

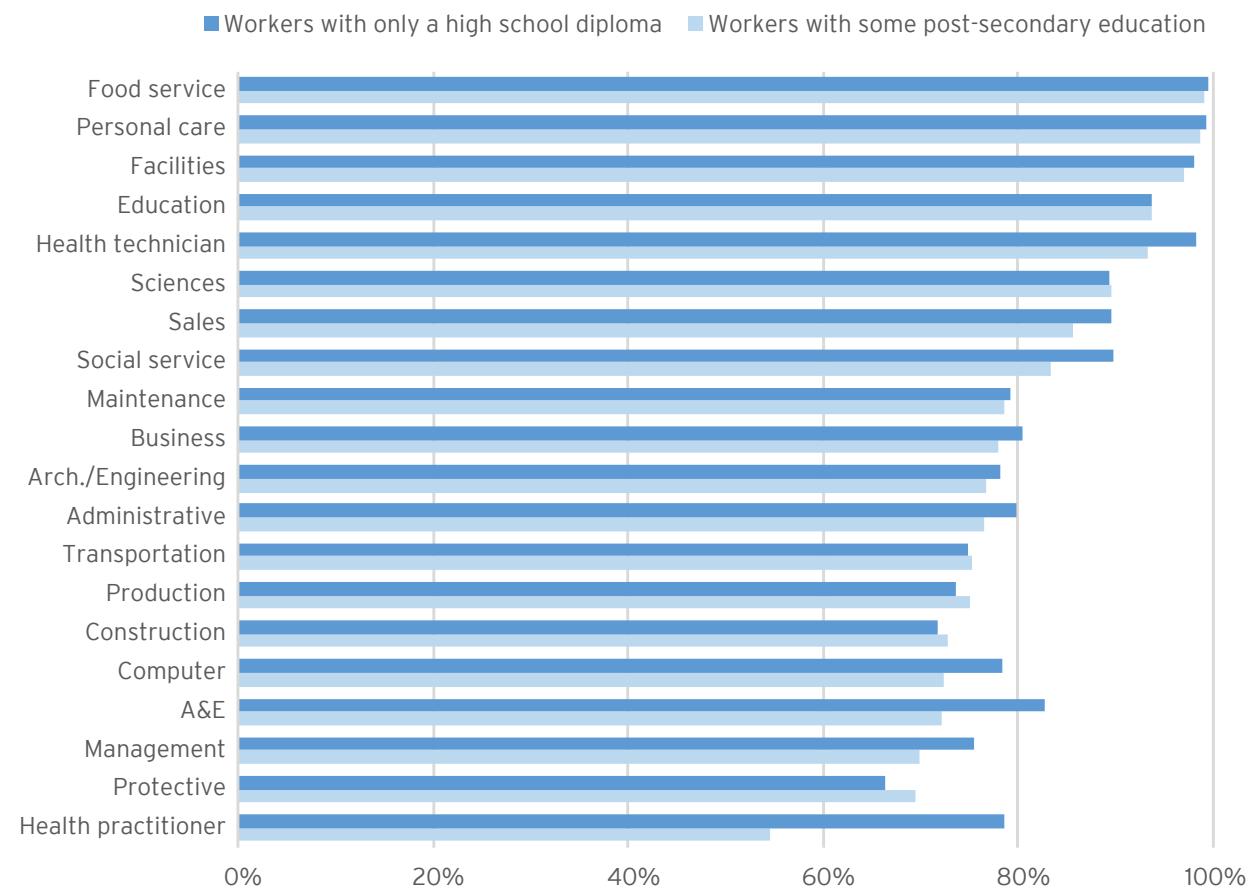
Rates of switching vary across major occupation groups, as shown in Figure 16. Nearly 100 percent of the region's sub-baccalaureate workers who start out in food service occupations will switch to a different occupation in order to get a good job. Likewise, nearly all sub-baccalaureate workers in personal care or facilities maintenance and repair occupations, such as janitors and groundskeepers, will switch occupations to get a good job. For the most part, the share of jobs in these occupation groups that appear promising represent those workers' rather slim chances of ever obtaining a good job.

Mobility rates tend to be lower in highly-paid or skilled occupations that provide larger shares of good jobs, indicating there may be better career ladders within these occupations or other reasons to remain in them. A smaller portion of workers who start in health practitioner, protective, management, or computer occupations will need to switch in order to get a good job. This may be because these occupations require more extensive training and experience, and so retain workers who have more specific knowledge

FIGURE 16

Most of Central Indiana's promising career pathways will involve a major career switch in the next 10 years

Share of workers in good and promising jobs that will make a career switch* by major occupation group



*Defined as a move between occupations in two different major occupation groups.

Source: Authors' analysis of U.S. Census Bureau public-use microdata and EMSI estimates

and skills. For example, in health practitioner occupations, workers with some post-secondary education are far less likely to switch to a different occupation group than workers with jobs in the same occupation group who have no post-secondary training.

The distribution of good and promising jobs across occupation groups and the mobility patterns between them strongly suggest that sub-

baccalaureate workers' best chances of getting a good job are not necessarily in occupations or industries that provide the most jobs. Food service and sales jobs are plentiful, but workers' chances of obtaining a good job from these starting points without more education are slim. In contrast, Opportunity Industries appear to provide fewer starting points but better ladders to good jobs within or among certain skilled occupations, if workers can get a foothold.

3C. OPPORTUNITY INDUSTRIES REQUIRE AND IMPART SPECIFIC SKILLS AND KNOWLEDGE

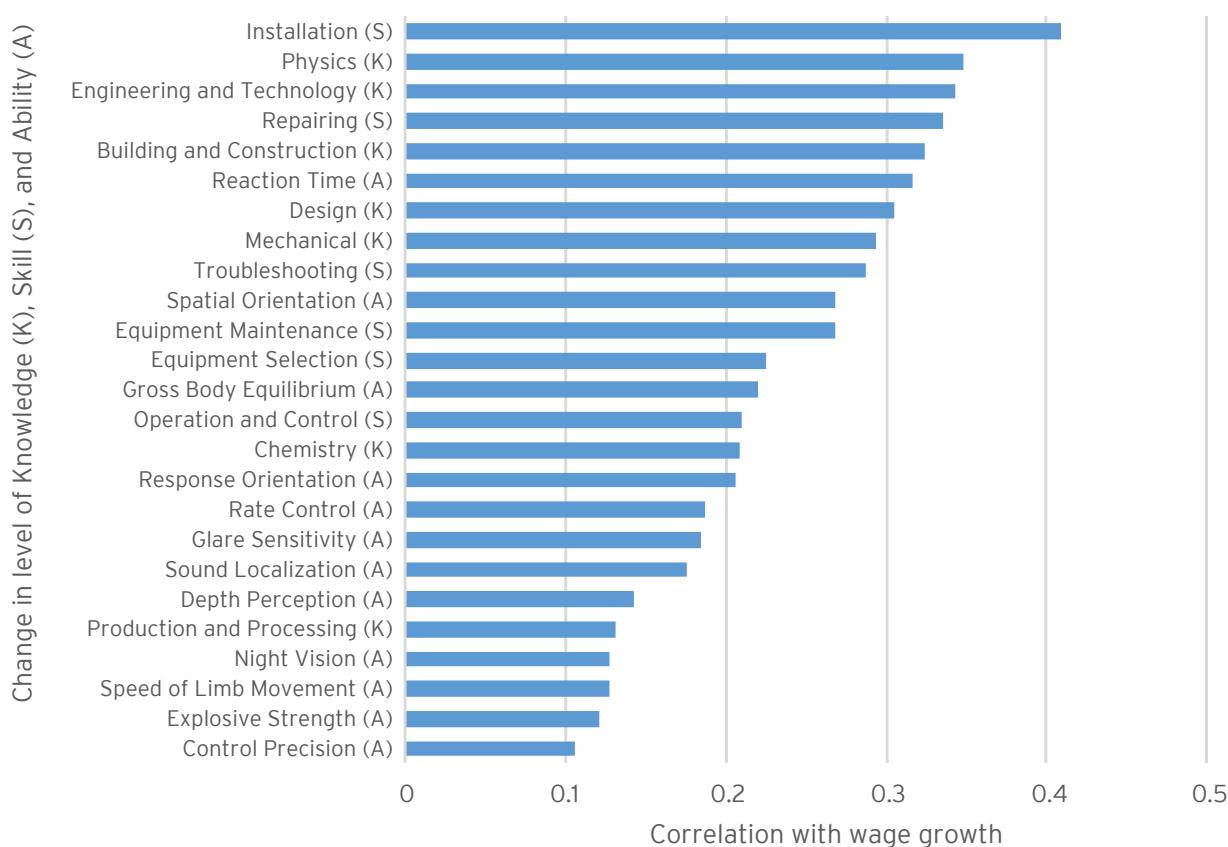
Workers appear to move between quite different types of work as they navigate Central Indiana's labor market in search of better jobs. Workers in promising career pathways typically move from entry-level jobs toward those that involve higher levels and more specific types of knowledge, skills, and abilities. As workers advance through

promising pathways, the acquisition of some types of knowledge, skills, and abilities appear to be more closely related to larger earnings gains than others.⁴⁸ This suggests that some types of knowledge, skills, and abilities are more prized in Central Indiana's Opportunity Industries. Yet the skills and abilities that appear most valuable in promising pathways for *high-skill* workers may provide a better indication of the direction of future labor market demand.

FIGURE 17

Central Indiana's sub-baccalaureate workers achieve the biggest wage gains by attaining advanced levels of specific skills, knowledge, and physical abilities in promising career pathways

Correlation of wage growth to changes in the content of work in Central Indiana for sub-baccalaureate workers in career pathways to good jobs



Source: Authors' analysis of U.S. Census Bureau public-use microdata, EMSI estimates, and O*NET data

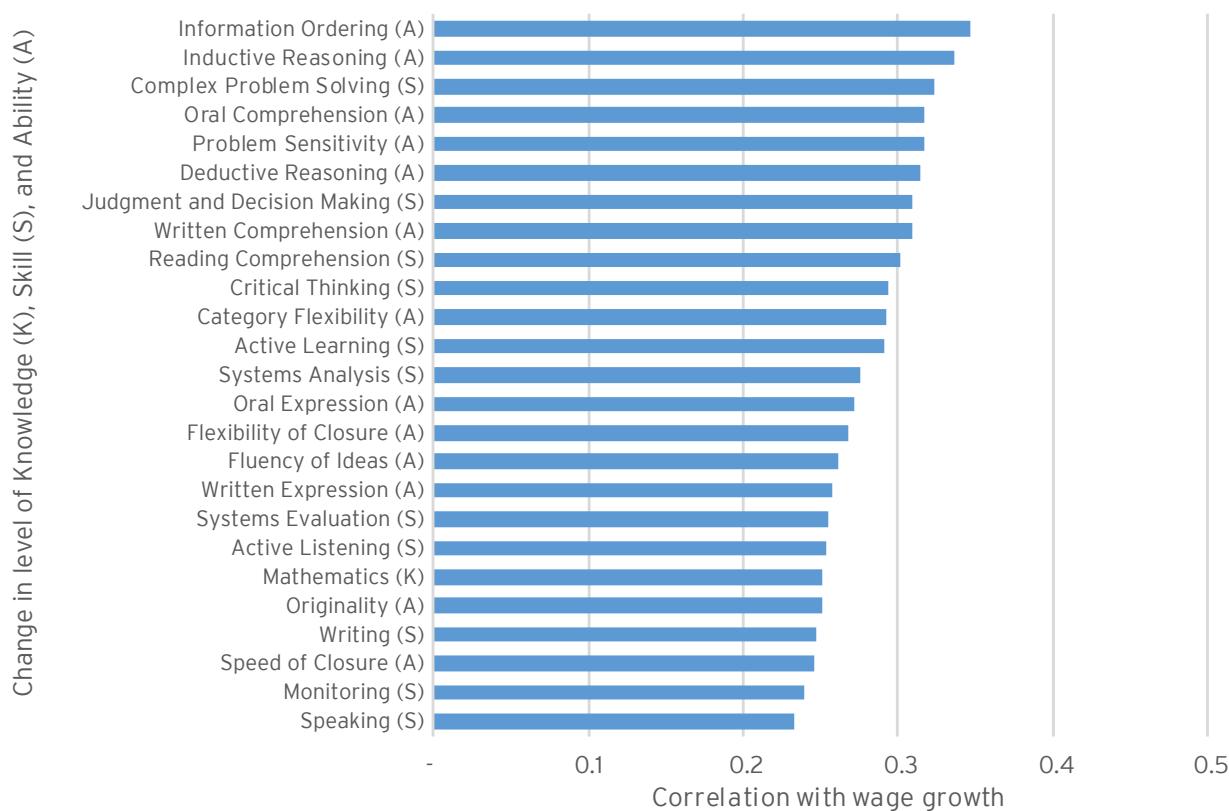
Promising career pathways that provide the greatest rate of upward earnings mobility for sub-baccalaureate workers entail increasing competence in specific types of knowledge and skills related to installing and repairing equipment and working with engineering and technology, as shown in Figure 17. Promising pathways for sub-baccalaureate workers also tend to require increasing levels of spatial perception and physical abilities. These physical abilities indicate the context in which many sub-baccalaureate

workers in good jobs are working: on construction sites, in manufacturing plants, and other environments where acumen, agility, and stamina are important aspects of the job. These types of knowledge, skills, and abilities appear closely related to the kinds of occupations that provide among the largest shares of Central Indiana's good jobs for sub-baccalaureate workers, such as construction, maintenance, and production occupations.⁴⁹

FIGURE 18

Central Indiana's high-skilled workers achieve the biggest wage gains by developing sophisticated cognitive, social, and management abilities and skills in promising career pathways

Share of workers in good and promising jobs that will make a career switch* by major occupation group



Source: Authors' analysis of U.S. Census Bureau public-use microdata, EMSI estimates, and O*NET data

These patterns suggest that the acquisition or demonstration of higher levels of these specific types of knowledge and skills lead to better jobs for sub-baccalaureate workers. For example, career pathways in which workers acquire and/or begin to apply advanced knowledge of physics, engineering, technology, building and construction, design, and mechanics are associated with greater increases in wages. Increasing adeptness at installation, repair, and troubleshooting are also associated with larger wage increases.

However, although these types of knowledge and skills have historically nearly guaranteed that sub-baccalaureate workers will be able to obtain a good job, that is becoming less the case. The jobs in which these types of knowledge and skills are necessary are growing more slowly than other types of jobs, and these types of knowledge and skills are becoming less important to the labor market in general. A recent report by the British research group NESTA found that the types of knowledge, skills, and abilities identified here as being most closely related to sub-baccalaureate

workers' earnings growth are also the most likely to become redundant in the near future.⁵⁰

Meanwhile, high-skilled workers' most lucrative career pathways entail almost completely different changes in job content. Workers with at least a bachelor's degree achieve the greatest wage gains by acquiring and/or applying sophisticated cognitive abilities and skills in their jobs, as shown in Figure 18. For these workers, reasoning abilities, problem identification, and critical thinking are among the most important abilities and skills for attaining wage hikes. Social and interpersonal communication skills such as oral comprehension, active listening, writing, and speaking also matter to advancement.⁵¹

The sophisticated cognitive abilities, problem-solving skills, and communication skills important to high-skill workers' advancement toward better-paying jobs may provide a better indication of the role of talent in the economy going forward. Many studies of the future of work have identified similar types of cognitive and social skills and abilities as being increasingly important to work in the future as technology takes the place of routine tasks and takes on more complex problems of pattern recognition and learning.⁵² Many of the features associated with the largest wage gains for high-skill workers point to the importance of systems thinking, learning strategies, reasoning, and creativity—skills and abilities that are likely to make workers more productive when applied to technology.

4. Central Indiana workers' chances of obtaining a good job vary by their race and gender

Central Indiana's shortage of good and promising jobs affects some workers more than others, which may explain and compound other longer-term challenges the region faces around access to opportunity. Workers face quite different chances of obtaining a good job based on a number of factors, including not only their educational attainment but also their race and gender.



These disparities are not well explained by differences in workers' proximity to good and promising jobs. In fact, some workers' closer proximity to such jobs provides opportunities for Central Indiana's leaders to increase awareness of labor market opportunities in communities where few workers hold good or promising jobs.

4A. CENTRAL INDIANA WORKERS' CHANCES OF OBTAINING A GOOD JOB VARY BY THEIR RACE AND GENDER

As the findings above suggest, education is a key determinant of whether someone will obtain a good job in the next 10 years. This means that access to higher education is crucial to people's access to labor market opportunity. However, other factors that have no relation to people's education or labor market experience also appear to play a role in workers' chances of reaching the middle class.

Education consistently improves workers' chances of getting a good job. A worker in Central Indiana who has no more than a high school diploma has a 35 percent chance of holding a good or promising job, while a worker with some post-secondary education has a 44 percent chance. A worker with an associate degree has a 58 percent chance of holding a good or promising job, while one with a bachelor's degree has 73 percent chance. Each additional level of education considerably improves workers' odds of holding a good or promising job.

However, even among workers with the same level of education, chances of holding a good or promising job vary by workers' race and ethnicity and gender, as shown in Figure 19:

- Fifty-four (54) percent of white or Asian men with a high school diploma hold a good or promising job, but only 30 percent of black men hold a good or promising job.
- Seventy-two (72) percent of white or Asian men with an associate degree hold a good or

promising job, but only 40 percent of black women with an associate degree hold a good or promising job.

- Seventy-nine (79) percent of white or Asian men with a bachelor's degree hold a good or promising job, but only 56 percent of Hispanic women with a bachelor's degree hold a good or promising job.

Such disparities mean that many women and people of color must attain higher levels of education to have similar chances of holding a good or promising job as less-educated peers. For example, a Hispanic woman with a bachelor's degree or a black man with an associate degree have chances of obtaining a good job that rival those of a white or Asian man with only a high school diploma.

Although education improves the chances that people of color will obtain good jobs, a smaller portion of blacks and Hispanics have post-secondary degrees. As a result, white and Asian workers are on average 54 and 76 percent more likely to hold a good or promising job than black and Hispanic workers, respectively.

However, even after accounting for differences in rates of educational attainment, Central Indiana's white and Asian workers still have a 42 percent better chance of holding a good or promising job than their black peers, and a 48 percent better chance than their Hispanic peers.

Some of these disparities are explained by demographic groups' representation in occupations that concentrate the region's good jobs:

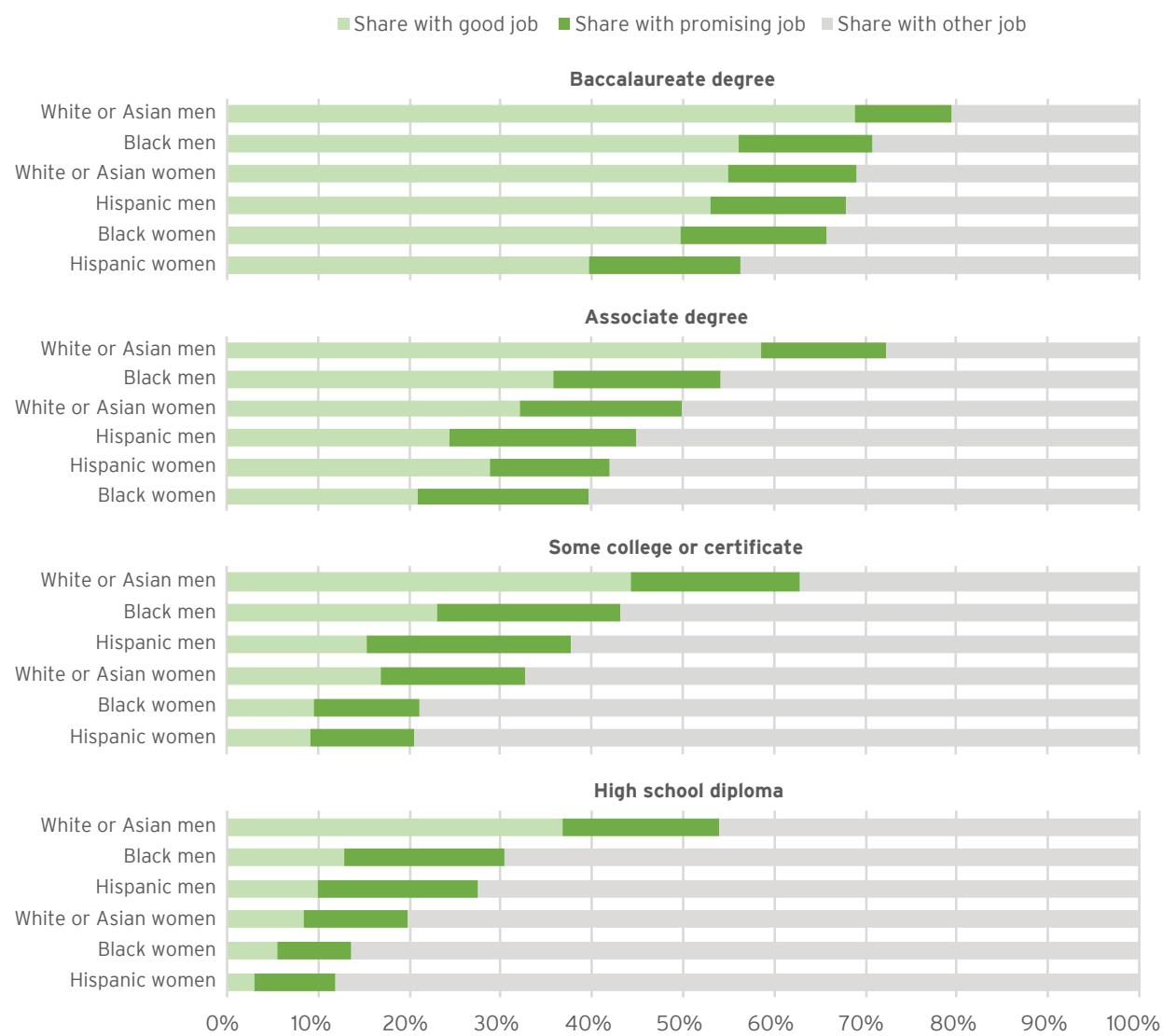
- Construction, production, maintenance, transportation, and protective services occupations that concentrate the region's good jobs for sub-baccalaureate workers employ 36 percent of all male workers but 8 percent of female workers.⁵³

- Computer, engineering, and science occupations, which also provide many good and promising jobs, are also male-dominated.
- Women hold a slight majority of jobs in health care and administrative occupations, which account for less than 20 percent of the region's good jobs.
- Meanwhile, workers of color are generally well-represented in most blue-collar occupations that concentrate good jobs but are underrepresented in business, computer, health practitioner, and engineering occupations where workers usually have a better chance of holding a good job.

FIGURE 19

Central Indiana's workers face different challenges of obtaining a good or promising job

Share of Central Indiana workers who hold a good or promising job by educational attainment, race, and gender



Source: Authors' analysis of U.S. Census Bureau public-use microdata and EMSI estimates

4B. GOOD AND PROMISING JOBS ARE RELATIVELY PROXIMATE TO MOST WORKERS

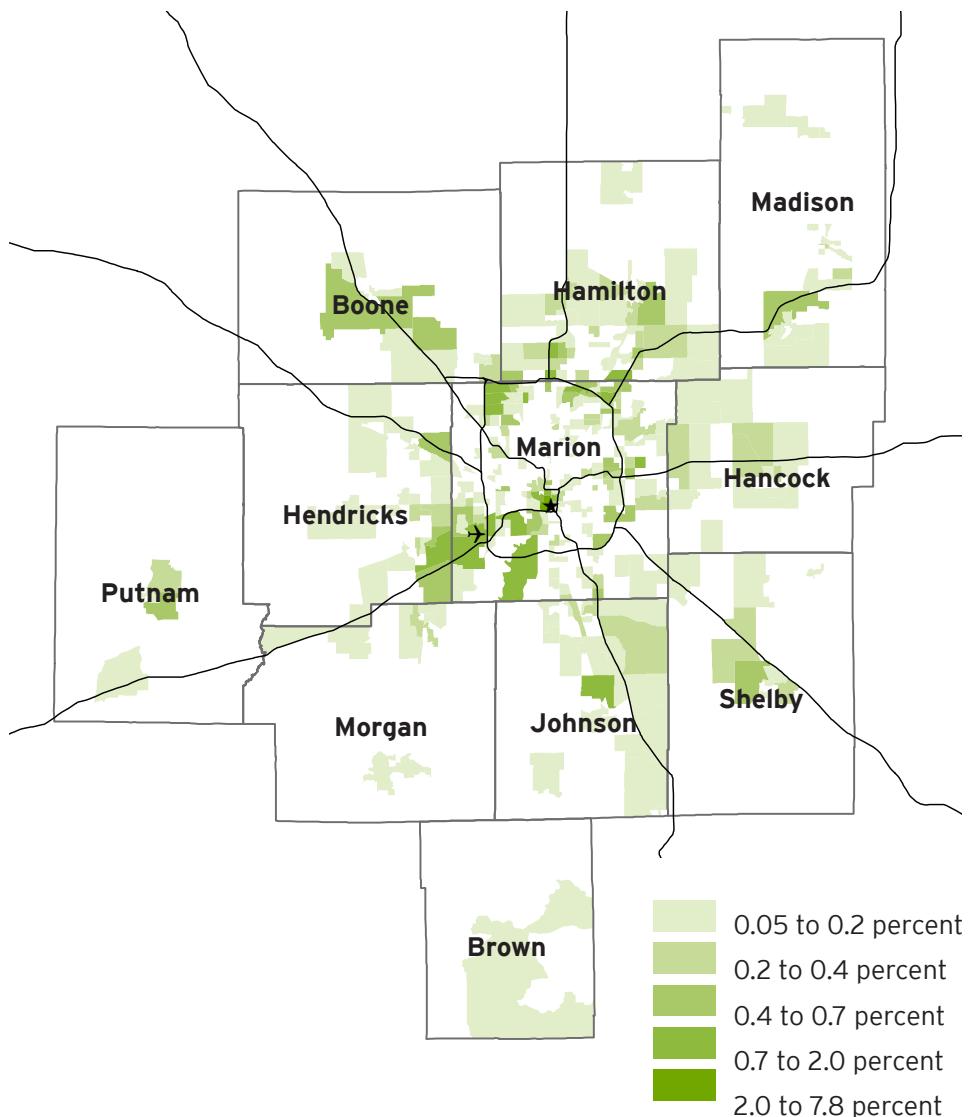
Differences in workers' chances of obtaining good and promising jobs do not appear to be due to their physical proximity to Opportunity Industries. Central Indiana's Opportunity Industries and

the good and promising jobs they provide are distributed throughout the region in much the same way the rest of the economy is. This means that good and promising jobs for sub-baccalaureate workers are generally no closer and no farther than other jobs, on average.⁵⁴ It also means that, like all jobs, good and promising jobs are *more proximate* to workers of color than they are to white and Asian workers.

FIGURE 20

Central Indiana's good and promising jobs are concentrated along transportation corridors

Share of Central Indiana's good and promising jobs for sub-baccalaureate workers by census block group, 2016



Source: Authors' analysis of U.S. Census Bureau microdata, LEHD LODES data, and EMSI estimates

Like all jobs in the region, most good and promising jobs are concentrated in distinct areas of Marion County, as shown in Figure 20. Sixty (60) percent of Central Indiana's good and promising sub-baccalaureate jobs are in Marion County. About 12 percent of the region's good and promising sub-baccalaureate jobs are in or around Indianapolis's downtown, another 6 percent are located in and around the Indianapolis International Airport in Marion County, and about 5 percent are concentrated in an area bordered by Interstate 465 in northwest Marion County.

The concentration of Central Indiana's good and promising jobs for sub-baccalaureate workers near the region's major population centers makes these jobs just as accessible as "other" jobs in the region. The average good or promising job is within a 33.6-minute drive of the average worker, versus a 33.8-minute drive to "other" jobs.

Good and promising jobs for sub-baccalaureate workers are also more proximate to workers of

color, as shown in Figure 21. Just as with all jobs, black workers live 6 minutes closer to the average good and promising sub-baccalaureate job than white and Asian workers. Hispanic workers live 2.6 minutes closer to the average good and promising sub-baccalaureate job than non-Hispanic workers.

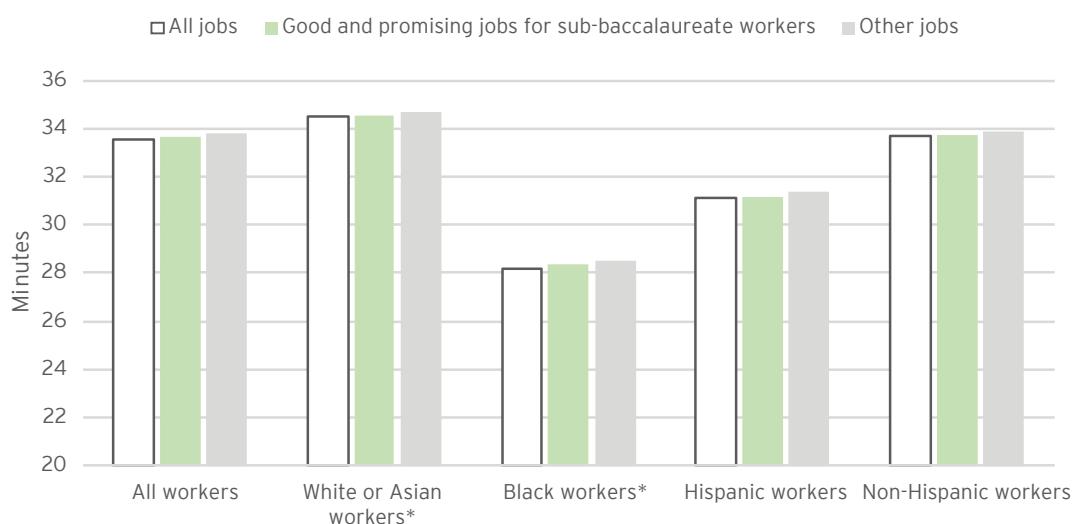
There are only imperceptible differences in driving times to good and promising jobs among people with different levels of education and among men and women.

Black and Hispanic workers appear to live closer to the region's job centers, contributing to their shorter drive times to jobs. Eighty-four (84) percent of black workers and 63 percent of Hispanic workers in the region live in Marion County, compared to 47 percent of all workers. As a result, black and Hispanic workers live within a shorter average driving distance of good and promising jobs than their white or Asian peers. Although 25 percent of all good and promising

FIGUR 21

People of color live closer to good and promising jobs than white or Asian workers

Average driving time to job by race and ethnicity, 2016



*Race categories in this chart refer to workers of both Hispanic and non-Hispanic ethnicities.

Source: Authors' analysis of U.S. Census Bureau public-use microdata, EMSI estimates, LEHD LODES data, and Google Maps API

sub-baccalaureate jobs are within a 20-minute drive the average black worker, only 15 percent are for the average white or Asian worker. About 20 percent of good and promising jobs for sub-baccalaureate workers are within a 20-minute drive of the average Hispanic worker, versus 16 percent that are within a 20-minute drive of a non-Hispanic worker.

Not only are there more good and promising jobs within a 20-minute drive of black and Hispanic workers compared to white or Asian counterparts, but there are also more jobs within a 15-, 10-, and 5-minute drive. This may imply that, notwithstanding the distended nature of Central Indiana's physical development and lack of comprehensive public transportation, other factors besides the distribution of jobs in the region affect the prospects and outcomes of workers of different races or ethnicities.

Nevertheless, these workers' relatively close proximity to good and promising jobs represents

an opportunity for Central Indiana's leaders to be more deliberate in connecting workers looking for better opportunities to good and promising jobs, by also exploring and addressing factors beyond proximity that may limit workers' access to better labor market prospects. Workers may need opportunities to prepare for good jobs through education and training, but greater awareness of the relatively numerous opportunities nearby may also help bridge divides.

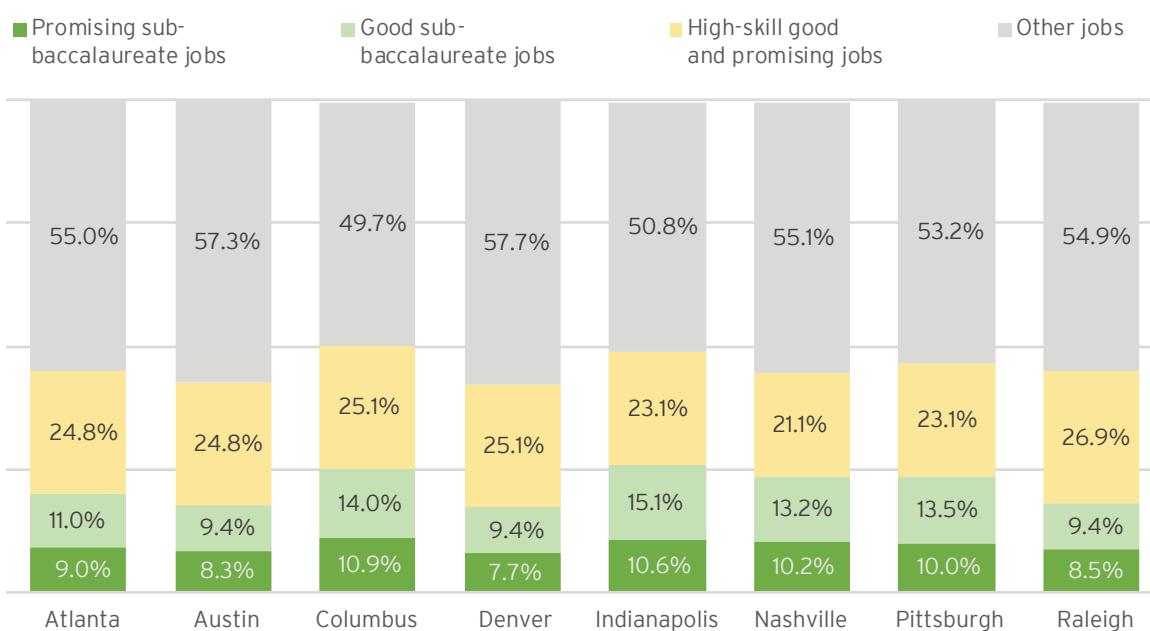
5. Central Indiana has a lead on other regions in advancing opportunity

Advancing opportunity is not only an urgent challenge for Central Indiana but also one for most large U.S. regions. Leaders in communities throughout the nation are grappling with the broad external forces that are rapidly reshaping their economies and the access to opportunity they provide. Central Indiana has several advantages in bending the curve, however.

FIGURE 22

Central Indiana boasts higher shares of good and promising jobs than many peer regions

Concentrations of good and promising jobs in peer regions, 2017



Source: Authors' analysis of U.S. Census Bureau public-use microdata and EMSI estimates

By building on its advantages, including its relatively large share of jobs that qualify as good or promising, this region can set a national example for its leadership on developing and implementing meaningful solutions that advance opportunity.

Central Indiana's share of all jobs that qualify as good or promising is greater than any of its seven peer regions except Columbus, which bests Central Indiana by less than one percent of its jobs. Central Indiana beats all of these regions on the share of its jobs that qualify as good or promising for sub-baccalaureate workers, as shown in Figure 22. Just about 43 percent of jobs in Austin and Denver are good or promising, and less than 18 percent are good or promising for sub-baccalaureate workers. Raleigh and Atlanta do only a little better. However, every peer region except Nashville provides an equal or greater share of jobs that are good or promising for high-skill workers.

Central Indiana provides better labor market opportunities than most of its peers not just because of its affordability but also because of the nature of its economy. Despite changes in the structure of the region's economy in recent years, Central Indiana continues to provide many jobs in Opportunity Industries, such as those in the construction, manufacturing, health care, and professional services sectors. Many of the region's Opportunity Industries provide opportunities for sub-baccalaureate workers to realize greater earnings than they would find in other regions.

Yet this advantage will not serve the region if it does not build on it. Today, Central Indiana is following a path that leads to fewer good and promising jobs as a share of its total jobs, far less labor market opportunity than its workers need, and worsening social and economic divides that could undermine the region's stability. These findings reveal that the region is better positioned than others to begin addressing its challenges around advancing opportunity. Retaining this advantage depends on the actions leaders take to address these challenges.



IMPLICATIONS FOR ADVANCING OPPORTUNITY IN CENTRAL INDIANA

There is not a singular system or institution that can fully address the scale or complexity of the challenges revealed in this report. Today, 144,000 of Central Indiana's workers struggle to make ends meet for their families. To help a sizeable portion of these individuals reach the middle class, the region would need 118,000 more good and promising jobs. Further, it would need to provide education, training, and outreach to ensure these workers are aware of and prepared for good or promising jobs. This requires new multi-dimensional approaches that marshal the tools, resources, and expertise of actors from many different systems and institutions. It also requires intentional shifts in focus and resources if the region truly wishes to change the current paradigm.

The findings from this report point to four key implications impacting regional strategies that seek to address these challenges:

- **Grow good jobs.** Central Indiana's economic future will be decided in large part by how it chooses to advance opportunity and prosperity. The region is projected to add fewer good and promising jobs than it needs in the years ahead. Economic development can play a role in addressing this gap. However, precious state and local economic development dollars must support two objectives simultaneously: advancing opportunity by incentivizing the growth of good jobs and advancing prosperity by supporting the growth of the innovative tradable industries that increase the region's wealth and drive the growth of other local-serving industries. This requires renewed focus on the *tradable* Opportunity Industries that support both objectives.
- **Improve job quality.** Even with more focused and disciplined economic development investments, Central Indiana is unlikely to close its gap in good and promising jobs through economic development efforts alone, which means it must also improve the quality of its existing job base by converting "other" jobs into better jobs. This is not an easy task, but it can start with employers already committed to workforce improvement and for which the business case for job quality is clearest. Small improvements in the wages or benefits of some jobs in certain sectors, such as government and health care, could have an outsized impact on job quality in other sectors. Meanwhile, policy can also play a productive role in shaping a competitive and fair labor market that encourages and incentivizes work and upward mobility.
- **Prepare people for good jobs.** Growing good jobs and improving job quality clearly depend on the availability of talented and productive workers in Central Indiana. The findings in this report reveal that people who have obtained more education and training have much better chances of obtaining good jobs.

However, the character of the labor market and the knowledge, skills, and abilities it demands continue to change. Today, workers not only need training for specific jobs or occupations, but also the skills to adapt: to teach themselves, to problem-solve, to reason, and to communicate ideas. These skills can help improve workers' independence and help them forge their own pathways to good jobs.

- **Support working families.** Many working families in Central Indiana today struggle to make ends meet, and workers in these families face difficult tradeoffs as they pursue better labor market opportunities that would lead to economic security and independence. Even as leaders in Central Indiana continue to develop and implement new solutions to advance opportunity, many of these workers and their children will continue to struggle to get ahead. New solutions will take time to achieve impact, and even workers in promising jobs aren't guaranteed to obtain jobs that pay family-sustaining wages while their children are still young. Leaders can better support these families' pursuit of opportunity by addressing some of the barriers and gaps they face in supporting their families along the way.

Together, these four high-level implications touch a majority of Central Indiana's civic institutions, including state and local economic development agencies, business groups, workforce development organizations that connect people to jobs, education and training institutions, policymakers, and others. Scalable solutions require even greater alignment and coordination among leaders across these institutions and systems. Solutions may also benefit from increased collaboration with and/or among community and neighborhood development groups that can connect people from communities underrepresented in good jobs with better opportunities to obtain them.

Leaders from these different organizations and institutions have acknowledged that the scale of the region's challenges requires greater alignment

and are actively pursuing more collaboration. However, they have also acknowledged that their efforts alone, no matter how coordinated they are, cannot achieve the same impact as public policy initiatives that influence the direction of the region's economic growth and foster labor market participation and upward mobility. The state and localities control a number of levers, from economic development incentives to public safety net programs to physical development and access, which, because of their scale, can achieve the greatest impact on advancing opportunity in the region.

Leaders in Central Indiana and at the state level can consider a number of tactics in each of the four areas of implications that would advance opportunity for the region's workers and families, some of which are outlined below.

GROW GOOD JOBS

Economic development can help shift Central Indiana's growth trajectory toward higher-quality job creation, just as it has done in recent years. State and regional leaders have worked together to bend the region's growth curve. The state has awarded more than \$900 million worth of economic development incentives to businesses in the Central Indiana region since 2006 to promote job growth and investment.⁵⁵ Localities have followed suit: A separate Brookings study finds that the city of Indianapolis alone awarded more than \$150 million in incentives between 2012 and 2016.⁵⁶ Altogether, businesses that received state and local incentives are responsible for at least half of the region's net job growth from 2006 to 2016.⁵⁷ Furthermore, the majority of incentives have gone to the region's tradable industries, where they can claim credit for nearly all of recent job growth in those industries.

These investments in Central Indiana's growth have yielded substantial returns for both the region and the state. Incentives have helped put the region on a higher trajectory of growth, thanks in large part to the state and localities'

“ Growing good jobs is paramount to advancing opportunity and ensuring that people with fewer skills have pathways to jobs that lead to economic independence **”**

focus on growth in advanced, tradable industries. Central Indiana has claimed about one-third of the state's incentive spending since 2006—slightly less than the region's share of the state's private-sector economic output.⁵⁸ Yet Central Indiana generated 42 percent of the state's growth in economic output and 88 percent its net job growth between 2006 and 2016, making the region a crucial source of job and revenue growth for the state as a whole during this period.⁵⁹

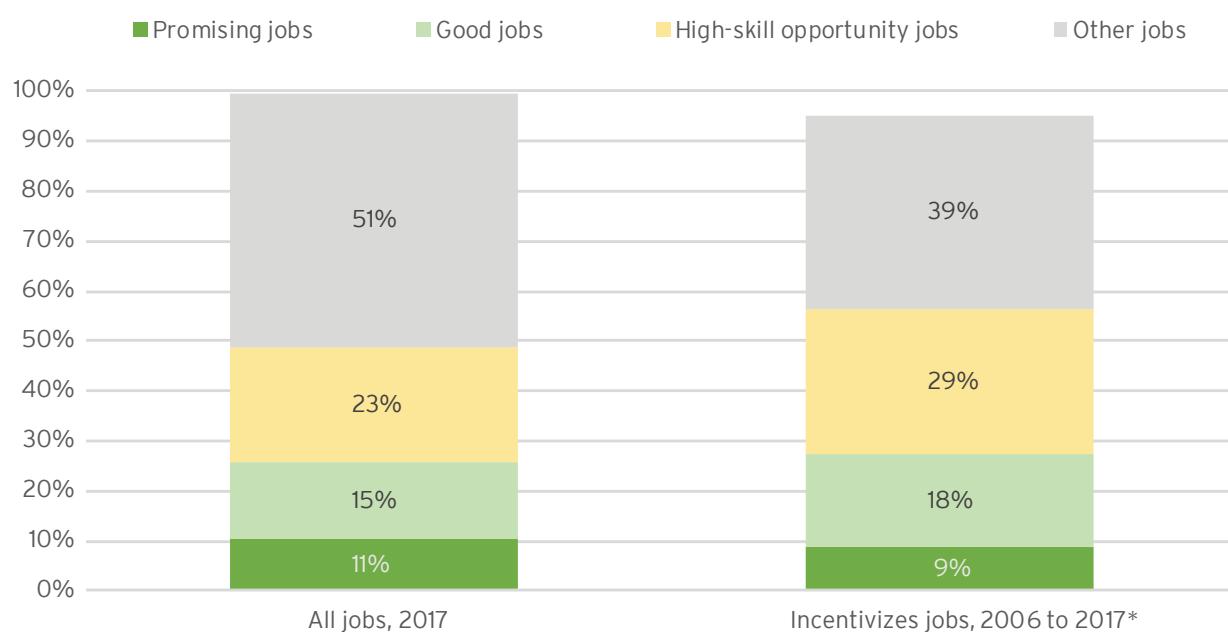
Economic development incentives have not only contributed to Central Indiana's job growth in recent years, but they have also helped advance opportunity. The state of Indiana's economic development incentives have supported job growth in Central Indiana of higher quality than the regional average. Twenty-seven (27) percent of new or retained jobs incentivized by the state between 2006 and 2017 were good or promising jobs for sub-baccalaureate workers, based on the average job quality of incentivized industries.⁶⁰ This is just slightly better than the regional average. Another 29 percent were good or promising jobs for high-skill workers—much better than the region's average. However, at least 39 percent of new or retained jobs incentivized by the state were “other” jobs that do not meet job-quality criteria, as shown in Figure 23.

Furthermore, although the state of Indiana's incentives awarded in the Central Indiana region have helped improve the region's average job quality, not all incentive projects are better-

FIGURE 23

Indiana's economic development incentives have helped increase the share of jobs that are good or promising in the Central Indiana region

Share of jobs by job quality in Central Indiana, 2017



*Gross job creation through the end of 2017; job quality for some incentivized projects cannot be determined.

Source: Authors' analysis of EMSI estimates, the IEDC's Transparency Portal database, and other sources

than-average. From 2006 to 2017, 78 percent of the state's discretionary economic development incentives awarded in Central Indiana went to businesses in industries that have above-average shares of good and promising jobs, for either sub-baccalaureate or high-skill workers.⁶¹ The remaining 22 percent of the state's incentive awards in the region went to industries with below-average shares of good and promising jobs for either sub-baccalaureate or high-skill workers in non-advanced industries, such as food and beverage manufacturing or warehousing and fulfillment centers.

The "other" jobs the state has incentivized, especially those in industries that provide above-average shares of "other" jobs, should concern policymakers for a few reasons. The state of Indiana implements strong controls that ensure each job it incentivizes is revenue-neutral for the

state, meaning even "other" jobs will generate or retain enough payroll taxes to offset the marginal cost of incentivizing that job. However, this may not be the most productive use of scarce public resources. Further, many of these "other" jobs may leave jobholders dependent on public assistance programs, such as Medicaid, if they provide few hours, low hourly pay, or do not include benefits. As a result, the state may be subsidizing many of these "other" jobs twice: first with an incentive and then again with spending on safety net programs and credits for workers in low-income families. This secondary spending may mean that many of these incentivized "other" jobs are not in fact revenue-neutral.

A second concern with incentivizing low-quality job creation is that it does not advance opportunity. Policymakers in communities across the country often defend economic development

incentives that award low-quality job growth by countering that “any job is a good job” for a low-skill person who doesn’t have many job prospects. Though true, this does not necessarily mean that public spending should create just “any job.” The findings in this report reveal that growing good jobs is paramount to advancing opportunity and ensuring that people with fewer skills have pathways to jobs that lead to economic independence. Further, incentivizing job growth in Opportunity Industries that concentrate good jobs, especially those industries that are tradable and advanced, typically fuels job growth in industries that provide the “other” jobs that low-skill people may need to find an entry point in the labor market.

Recent changes in the state of Indiana’s tax structure may necessitate a change in the calculus of its economic development incentive spending. The state’s corporate and individual income tax rates will fall to among the lowest in the country over the next few years.⁶² This could make it harder to provide sizable economic development incentive packages that are revenue-neutral. Meanwhile, these changes may put pressure on the revenues that fund incentive spending. The state and its local economic development partners may need to find new ways to do more high-impact economic development with fewer resources. Focusing economic development efforts on advancing opportunity can help ensure these resources achieve the greatest impact.

Prioritize tradable Opportunity Industries in economic development efforts

Leaders in Central Indiana and their partners in state government should pursue economic development strategies that prioritize Opportunity Industries that concentrate good and promising jobs and that can fuel the region’s growth and prosperity. Many Opportunity Industries provide excellent prospects of advancing both opportunity and regional

prosperity. This report identifies 102 industries that concentrate Central Indiana’s good jobs crucial to sub-baccalaureate workers’ upward mobility, good and promising jobs for high-skill workers who hold a bachelor’s degree, and that are tradable. These industries together comprise 9 percent of the region’s jobs. Further, Central Indiana already specializes in several of these industries, such as those related to life sciences, advanced manufacturing, and advanced business services.

Although recruiting more businesses and jobs in this select group of Opportunity Industries is one way to grow them, the state and localities can also develop customized services and programs that support the competitiveness and growth of existing businesses in these and related industries. For example, targeting job training grants and research and development funding to these industries could help them retool, innovate, and attract or train new workers. Investing in these sorts of “cluster” initiatives that provide shared technical support and other crucial resources to similar businesses can improve the competitiveness of existing businesses and create new assets that attract others.⁶³ Timothy Bartik of the Upjohn Institute for Employment Research finds that these sorts of customized services can provide far greater economic benefits than cash incentives, especially for low- and middle-wage workers.⁶⁴



Increase job quality standards for economic development incentives

Central Indiana and the state as a whole should not be limited to these tradable Opportunity Industries. Growth in many other industries can also provide substantial positive economic benefits that will often outweigh the costs of reasonable economic development incentives. For example, many advanced and tradable industries do not concentrate good jobs for sub-baccalaureate workers but do still concentrate good and promising jobs for high-skill workers. Incentivizing job growth in these industries can fuel the growth of good jobs in others.

Strengthening job quality standards in state and local job-creation incentive programs could ensure incentives achieve these benefits more effectively and efficiently, encouraging the growth of good jobs that advance opportunity without prioritizing particular industries.

Under current law, Indiana imposes lax statutory standards on the quality of incentivized jobs. For example, Economic Development for a Growing Economy (EDGE) credits used for new job creation—the state's largest incentive program by far—have no job quality requirements. Instead, the Indiana Economic Development Corporation (IEDC) needs only to consider the average wage of new jobs as a factor in determining the amount of EDGE incentives.⁶⁵ EDGE-R credits, used for job retention, can only be awarded to businesses in which the average compensation, including benefits, provided to employees during the previous fiscal year is the greatest of 105 percent of industry's average in the county or 200 percent of the federal minimum wage.⁶⁶

Meanwhile, none of Indiana's economic development incentives for capital investment are tied to the quality of new or retained jobs. In fact, none of the state's investment incentive programs requires any amount of job growth or retention, including the Hoosier Business Investment

(HBI) and the Headquarters Relocation Tax Credit.⁶⁷ However, HBI credits do require that the incentivized business pay an average wage at least 150 percent of the hourly minimum wage, or \$10.88 per hour (current minimum wage of $\$7.25 \times 150$ percent).⁶⁸ The state exempts logistics facilities from this requirement.⁶⁹

These job quality parameters, and particularly those concerning the average wage, leave plenty of room for economic development projects that do little to advance opportunity or prosperity and could in practice do the opposite.

Indiana can adopt standard job quality requirements across its economic development incentive programs that help its economic development funds go further and ensure the state only pays for private-sector investment and job creation that will raise middle class wages, reduce dependence on safety net programs, and increase prosperity. Following the example of other states, Indiana can elect to:

- **Only provide job-creation incentives for full-time jobs that pay hourly wages equal to the greatest of 200 percent of the state's minimum wage or a region's median wage,** excluding benefits. Setting a wage floor for incentivized new jobs would ensure economic development projects raise local mean and median wages. At the state's current minimum wage of \$7.25 an hour, this requirement would guarantee that any worker in an incentivized job heading a family of three or fewer people would not be eligible for most public assistance programs.⁷⁰
- **Only incentivize new jobs that provide employer-sponsored medical insurance and pay at least part of the employee's premium.** People who are healthy are more productive.⁷¹ Further, implementing wage floors that would make families ineligible for Medicaid means they need to find coverage somewhere else in order to accept a job. Indiana could also consider making incentives contingent upon

other benefits such as access to retirement savings accounts or tuition assistance. Like in other states, benefit requirements can be flexible so that small employers can receive incentives without having to accept administrative burdens they cannot afford.

Many states have implemented these sorts of job quality requirements in their economic development incentive programs to ensure public resources encourage quality job growth. For example, the Rhode Island Commerce Corporation's Qualified Jobs Incentive Tax Credit provides refundable tax credits worth up to \$7,500 per job per year for new or retained jobs that provide at least 35 hours a week in employment and pay better than the state's median hourly wage.⁷² The Iowa Economic Development Authority's High Quality Jobs Program specifies a more flexible wage floor for incentivized jobs based on a county's average wage. Iowa also requires that incentivized jobs include employer-sponsored health insurance (though it does not require employers to pay premiums).⁷³

Additionally, some states have recognized the economic and fiscal benefits of tying capital investment incentives, like HBI, to quality job creation. Kentucky, Florida, and several other states offer capital investment incentive programs similar to Indiana's. The programs in these states and others award capital investment that bolsters job creation and quality, a win-win for states.⁷⁴ Indiana's economic development agencies can institute the most meaningful provisions of incentive programs from these other states without changing how the incentives otherwise work. Like Indiana's HBI tax credit, Kentucky and Florida offer tax credits that are a percentage of the qualified investment. However, they also require job creation. Kentucky also requires that jobs meet a wage and benefit threshold.

Instituting these sorts of changes could shift the scope and impact of economic development incentive programs on Central Indiana's job

Strengthening job quality standards in state and local job-creation incentive programs could ensure incentives achieve these benefits more effectively and efficiently.

and tax base, leading to more good jobs. First, such requirements would ensure that the vast majority of incentivized jobs would qualify as a good job, thus improving status quo job quality and increasing average personal income. These changes could also improve economic mobility by creating more opportunities for lower-wage workers to move up into higher-paid jobs. Further, these changes would naturally shift incentives toward firms in advanced and other highly productive, tradable industries, since these industries concentrate good and promising jobs. Firms in these industries also help fuel growth of other industries, providing greater economic impact.

Importantly, these reforms are not intended to necessarily limit which economic development projects the state incentivizes. Rather, they would set standards for which jobs in prospective projects the state will agree to subsidize.

Implementing these job quality requirements and industry priorities does not necessarily require a change in the laws governing the Indiana's incentive programs. Independent of changes to statutes governing state incentives, state and local policymakers and practitioners can ensure economic development incentives spur quality job creation through their existing vetting processes. For many incentive programs, the IEDC has discretion to determine the appropriate size of incentives for each project. The State Budget Agency must certify that an offered incentive

will result in an overall positive fiscal impact. Both agencies can consider alternative means of determining the impact and appropriateness of prospective incentive projects. Putting quality job creation at the heart of incentives' cost-benefit calculations could meaningfully shift their outcomes.

Outside of state government, local governments, tax districts, and special districts such as Indiana's certified technology parks can also assume leadership on the implementation of job quality standards in incentive projects. These entities are required to endorse and sometimes to partially match state incentives for projects sited in their jurisdictions. These localities may choose to set their own standards for job quality. Localities also exercise some discretion as to where within their jurisdictions a project is sited (e.g. near a low-income community or transit corridor). Localities can also set additional requirements regarding broader community support for incentivized projects as a condition, involving neighborhoods in negotiating incentive agreements. Even absent state reforms, localities can still ensure that the projects that come to their communities create good jobs that expand economic opportunity.

IMPROVE JOB QUALITY AND OPPORTUNITY

In addition to growing more good jobs, Central Indiana will likely also need to improve the quality of jobs in order to expand opportunity for the number of struggling workers who need it. Strategies that address the quality of jobs in local-serving sectors can be especially effective here. Employers in some of these sectors have exceptional influence on the local labor market due to their size and position. And there are opportunities to increase the influence of smaller employers through branded initiatives. Therefore, by identifying, improving, and highlighting the practices of a few employers, regional leaders may be able to effect job quality improvements throughout the region's economy.

Convincing employers to improve the quality of jobs for existing or future employees can be tough. For one, the incentives for doing so are idiosyncratic, depending on the employer's industry, competitive position, and business model.⁷⁵ But a large and growing body of research suggests that improving job quality generally improves employee morale and productivity, lowers turnover, decreases hiring and training costs, and increases customer satisfaction.⁷⁶ Further, there are more direct enticements for institutions in health care, education, and government, whose costs are often determined in part by socio-economic factors.

One strategy to overcome the idiosyncrasies of various employers' motives to invest in job quality is to pursue tactics that influence the motives of many employers at once. Several of the tactics explored below involve working with one large or a set of employers for which the incentives for investing in job quality improvements are clear. By working with an influential set of motivated employers to develop, improve, and promote replicable job quality practices, leaders can hope to persuade other employers to follow suit. After all, employers who lead the way in improving job quality are more likely to retain and attract the most qualified and productive workers, putting pressure on others. Leaders can also explore regulatory changes that would directly or indirectly improve the quality of jobs.

Anchor strategies

Nationwide, anchor institutions are paying closer attention to their role in shaping economic and other outcomes in their communities. Costs are a major consideration. By adopting policies that support economic opportunity in their communities, these institutions lower their costs related to turnover, security, maintenance, and health care. This is especially true of private health care institutions that are responsible for community health outcomes under new laws. There are also indirect costs to consider. A surprising share of workers in government,

education, and health care relies on government assistance to help them make ends meet.

The Democracy Collaborative, a think tank, has developed the Anchor Mission Playbook that details the successful initiatives anchor institutions have implemented around broadening access to economic opportunity.⁷⁷ These initiatives often seek to:

- Create sustainable internal career pathways and invest in training to increase upward mobility and reduce turnover, often through collaboration with local education institutions
- Adopt procurement practices that give preference to locally owned vendors that provide good jobs to local hires as a means of promoting community wealth-building and job quality
- Hire and develop local talent to decrease unemployment in the neighborhood(s) where the institution operates
- Invest portions of endowments in local capital projects that serve community redevelopment purposes to increase private-sector investment in the neighborhood

Anchor institutions throughout the nation have undertaken these initiatives in both their community's and their own self-interest. Some initiatives promote improvements in job quality. Others are aimed at improving the connections between neighborhoods that concentrate struggling workers and families and employers that provide good or promising job opportunities for them. These tactics can also achieve broader effects. Because anchor institutions account for so much local hiring, especially among low- and mid-skilled workers, their efforts in promoting access to opportunity for these workers can influence how other employers compete for similar talent.

Local leaders should encourage anchor institutions to think about and invest in job quality improvements by developing programs

that encourage major employers to "audit" the quality of their jobs, career pathways, and broader community impact. Large regional employers like anchor institutions often take pride in their regional economic impact, touting their budget, employment, capital investment, and procurement. However, the scope and extent of opportunity in such large organizations, and who benefits, are factors often overlooked in impact studies. These audits might encourage anchor institutions to commit to improving the quality of their jobs or opportunities over a period of time. Improvement plans would ideally embrace the tactics noted in the bullets above, along with "impact hiring" initiatives that remove hiring barriers among population groups under-represented in good and promising jobs.

Some groups in the region have already begun to focus on the role of anchor institutions. The Indy Chamber's Anchor Revitalization program advances "Live," "Buy," and "Hire" strategies that encourage anchor institutions to invest in their neighborhoods, procure locally, and to hire from their local communities.⁷⁸ Scaling such initiatives so that they work regionally and with a variety of different types of anchors could make a meaningful difference in how these large and well-situated employers directly and indirectly advance opportunity for the region's workers.



Promote “choice employers”

Employers of all sizes and stripes often have a difficult time attracting qualified jobseekers, including those that provide good jobs. This is especially true of small and mid-sized employers that do not enjoy the same brand recognition in the labor market as larger regional employers such as anchor institutions. A community-recognized designation that an employer exclusively provides good and promising jobs can help.

A “choice employer” designation would signify to jobseekers that a company provides reliable pathways to good jobs through codified career pathway and training programs and according to its compensation and benefit policies. The designation could be conferred through verification and agreement among local chambers of commerce, workforce investment boards, local governments, or other private sector economic development organizations.



This designation program could help the community achieve a number of ends. First and most, it can help employers that provide good and promising jobs burnish their brand and more easily attract the best job applicants, lowering their hiring costs. Again, this can especially help smaller employers, regardless of industry, stand out in a tight labor market.

Second, it can help labor market intermediaries like workforce investment boards (WIBs) prioritize these “choice employers” in their services. As publicly funded organizations, WIBs are obligated to work with any employer that approaches them with job needs. In a resource-constrained environment, this can be a tall order. Further, not all employers offer jobs that are “good” long-term matches for WIBs’ jobseekers. A community-recognized designation can help WIBs and other intermediaries prioritize choice employers for labor fulfillment projects. This could also give business developers at WIBs greater leverage to encourage the employers they work with to increase their compensation and benefits to compete for WIB services and qualified job seekers.

Third, creating such a designation signals that the community, starting with the civic institutions that stand behind the designation, prizes labor market opportunity. This sends a broader market signal, even to employers that choose not to participate, that the community puts importance on job quality. It also sends a signal to institutions beyond the region’s borders, like philanthropies, that the community and these civic institutions are serious about this issue and finding new solutions.

Such a designation would be of special benefit to small and mid-sized employers but should be available to any employer that qualifies. And, just as with anchor institutions, helping employers meet these qualifications can begin with a job quality audit and improvement plan, similar to the one outlined above for anchor institutions, and that encompass the same tactics.

Raise awareness of non-traditional career pathways

This research reveals that many of Central Indiana's sub-baccalaureate workers pursue career pathways from low-paying jobs to good jobs that cross industries and span very different types of occupations. At least 21 percent and as many as 47 percent of sub-baccalaureate workers must switch industries to obtain a good job. And 75 percent of sub-baccalaureate workers that obtain a good job switch between completely different types of occupations. These findings imply that traditional models of career advancement such as career ladders or lattices may increasingly be the exception rather than the rule.

Leaders in Central Indiana should raise awareness of these findings with workers and employers. Career ladders reflect an ideal advancement model that helps organize the work of education and training institutions, benefits employers who can retain workers they have invested in, and benefits workers who are able to learn on the job and eventually advance to higher-paying positions. However, although there is nothing inherently wrong with this model, it does not appear to reflect how most sub-baccalaureate workers actually navigate labor market opportunity, at least not over a 10-year period.

These non-traditional cross-industry career pathways may provide an opportunity to promote sub-baccalaureate workers' career advancement. Programs that educate and counsel incumbent workers about their advancement opportunities, or lack thereof, in their current industry or occupation might encourage workers in industries with little opportunity to more actively pursue education or job prospects in other industries that provide more reliable pathways to good jobs. This can be particularly helpful to workers in sectors like food service, accommodations, and retail that tend to provide many entry points to the labor market but few career ladders.

Furthermore, increasing awareness of the prevalence of non-traditional career pathways and the career prospects of sub-baccalaureate workers may prompt employers to increase their attention to internal promotion opportunities in an effort to retain workers. The competitive advantages of businesses in most industries fundamentally depend on their talent. Many employers invest heavily in recruitment and training only to see workers leave after short tenures. By improving and/or highlighting internal career ladders, employers may be able to better retain their most productive workers, who are often the most likely to voluntarily switch jobs.

Efforts to raise awareness of pathways to good jobs can be especially beneficial in communities that are underrepresented in Central Indiana's good jobs. This report finds that black and Hispanic workers have far lower chances of obtaining a good job compared to white or Asian peers with the same level of education, despite living closer to good and promising jobs. Increasing awareness of good and promising job opportunities near these workers and providing career counseling may help ensure these communities become more connected to better jobs.

Improve pay and predictability for low-wage workers

Beyond market-based, elective approaches to improving job quality and career pathways, a growing number of states and localities are exploring regulatory measures that influence job quality. Increasing minimum wages and tying annual increases to the cost of living has been one common intervention states and localities have adopted. In Indiana, about 3 percent of workers reported earning the state's minimum wage of \$7.25 in 2017.⁷⁹ However, 10 percent of workers earned less than \$9 an hour. Another 6 percent earned between \$9 and \$10 an hour. Raising the minimum wage and linking it to changes in costs of living could help lift the wages of workers who currently earn near-minimum

wages and gradually improve the wages of others who have low hourly wages.

States and localities have also explored ways of increasing the predictability of work for low-income workers. As contingent work schedules and temporary jobs have made work schedules and earnings more volatile in recent years, several states have explored regulatory measures around work scheduling that increase the notice employers must give workers regarding their schedules and limits their ability to cut hours or add hours at short notice.⁸⁰ Most bills have been aimed at non-exempt employees of large, multi-state companies in retail and hospitality sectors. Oregon became the first state to pass such a law in 2017.⁸¹ Several localities, including Chicago and Seattle, have also implemented similar city ordinances. Business case studies have shown that predictable hours and wages are better for retail firms where frontline workers are important to company sales.⁸²

States have also sought to curb practices that limit competition for talent. Non-compete agreements that are often used to keep high-skilled workers from sharing trade secrets have increasingly been used with lower-wage workers in recent years to discourage them from leaving for jobs with similar companies. Several states, including North Dakota and Oklahoma have banned non-compete agreements outright.⁸³ Other states, including Idaho and Illinois, have begun limiting these agreements to only "key employees" as a way of curbing their use with low-wage workers. Even in states like Indiana where non-compete agreements are unlikely to stand up to legal challenges, banning employers from pursuing them can still help low-wage workers since few are likely to mount such a challenge.⁸⁴

Promote an active labor market

The accelerating pace of economic change more regularly disrupts regional labor markets, leading to reduced hours, furloughs, or layoffs.⁸⁵

Raising the minimum wage and linking it to changes in costs of living could help lift the wages of workers who currently earn near-minimum wages and gradually improve the wages of others who have low hourly wages

These disruptions disproportionately affect sub-baccalaureate workers, who sometimes struggle to find new labor market opportunities.⁸⁶ Yet research has shown that keeping workers engaged in the labor market, even at reduced hours or pay, significantly improves their long-term outcomes. The expansion or introduction of programs that assist these workers can go far in helping them ensure stability for their families and be better prepared for a return to full-time work.

- **Partial employment insurance:** Partial unemployment benefits, a form of unemployment insurance for workers who have had their hours or wages reduced or have only been able to find part-time work after losing a full-time job, are offered in most states. However, Indiana's benefits are less generous and its eligibility requirements are more restrictive than most. Indiana is one of only 13 states that does not provide benefits to a worker earning \$10 per hour who had his or her hours reduced from 40 to 20 hours per week. Only 2.9 percent of all unemployment claims in Indiana are for partial benefits, ranking the state second-to-last among all states. The expansion of partial unemployment benefits would offer motivated workers more leeway to seek long-term full-time work.

- **Work-sharing arrangements:** Short-term compensation programs, more commonly known as workshare programs, allow employers to temporarily reduce work hours for employees in lieu of layoffs. In turn, workers receive a percentage of unemployment benefits equivalent to the share of hours lost. Indiana is one of 23 states that does not currently have a work share program in place.⁸⁷ These programs allow workers to maintain the stability of regular work and avoid the most severe consequences of unemployment. They also ensure employers can retain trained workers and reduce costs associated with re-hiring. The manufacturing sector, where training costs are high and work disruptions more frequent, has had historically high workshare uptake rates in states where the programs are offered.

Workshare programs may also shield workers from temporary layoffs due to changes in business operations, including changing technologies.⁸⁸ The Layoff Prevention Act of 2012, which provides federal funding for workshare programs, stipulates that employers must be allowed to combine reduced schedules with state-approved training. Workers who may have been laid off before the introduction of new technology for which they were not trained could instead, under a workshare program, remain employed at the company at reduced hours while undergoing re-training.

Active labor market programs that help ensure workers remain attached to the labor market can be difficult to implement and require a broad assessment of feasibility, costs, and benefits. These programs require more robust state information systems and time-consuming compliance review for businesses and public administrators alike. Yet these programs can actually save states money when they work as intended. The long-term fiscal and social costs of job separations can run far higher than temporary benefits and recurring administrative costs, especially for less-skilled workers. Low-

skill workers who lose their job have a harder time getting back to work the longer they are unemployed.⁸⁹ Few solutions are as cost-effective as keeping them employed.

PREPARE PEOPLE FOR GOOD JOBS

As workers across the nation have witnessed, and as the jobseekers in Central Indiana know better than most, the forces of trade, technological change, and changing employment norms have rendered much traditional career navigation wisdom obsolete. Workers are increasingly finding that the path to better jobs lead across occupations and industries, rather than within them; at the same time, there remains employer demand for workers possessing highly specific skills. Education and workforce development efforts in Indiana have responded to the changing environment and their constituents' needs with robust training programs, post-secondary education initiatives, and alternative on-the-job learning models. The findings of this report suggest avenues for further refinement of these programs and areas with potential for innovation.

Emphasize skills required to navigate the new labor market

Central Indiana and the state have invested in thoughtful and directed efforts to train workers and students for in-demand skills. Many of the most prominent programs, including the state's Career and Technical Education (CTE) initiative, have already trained a number of workers and students in skills on the rise in the current economy. However, the findings of this report and other recent prominent research suggest not only waning future demand for those occupation-specific skills that currently secure a middle-class lifestyle, but a shrinking shelf life of nearly any highly-specific training at all.⁹⁰ With 75 percent of Central Indiana's sub-baccalaureate workers in promising career pathways predicted to switch occupations in the next 10 years, there exists an opportunity and a responsibility to equip Indiana's

current and future workforce with the broadly applicable skills that will allow them to navigate a changing world of work.

The skills associated with baccalaureate workers' earnings growth, as shown in Figure 19 of this report, are also those critical to jobs both projected to grow faster in the coming years and that face less of a threat from automation. General analytical skills such as information ordering, inductive and deductive reasoning, and complex problem solving as well as "soft" personal skills, which this report finds are critical to the advancement of baccalaureate workers, are also among those that a study by the McKinsey Global Institute anticipates will be most instrumental in the jobs of the future.⁹¹ *The fundamental value of these skills lies in their close connection to resilience and adaptability.*

In this new landscape, training in reasoning abilities and problem identification is critical.



Yet, current offerings through the CTE pathways programs indicate an uneven distribution of classes that emphasize these cognitive skills and abilities.⁹² For example, pathways in the hospitality and human services cluster largely relegate classes that are most likely to encourage complex problem-solving and information ordering (e.g., Introduction to Business) to electives, while those in the information technology cluster do not. This report finds that sector-based career programs that offer the fewest classes that emphasize these skills are also those which workers are most likely to leave in order to find a good job. Therefore, a closer look at the content of course offerings and a deeper integration of reasoning skills into curricula is critical to ensure students' future labor market success throughout their careers.

In contrast, many of the skills this report finds were historically associated with sub-baccalaureate workers' earnings growth—for example, installation, repair, and equipment maintenance—lend themselves to highly specific applications (e.g., installation or repair of a certain type of production machinery). According to current projections, several of these applications are expected to continue experiencing high demand into the future—but many are not, a fact recognized by the state in its inclusion of projected occupation growth in its pathways offerings.⁹³

Yet, there persist several certification offerings among community colleges in the region that teach to software or machinery that likely do not have the durability of more general competencies.⁹⁴ While more employers will demand digital fluency in the future, for example, the number requiring knowledge of any single specific software will likely decline. Educational institutions can help mitigate the risk that students take by enrolling in highly-specific career certification programs by ensuring courses also emphasize the broader skills that are increasingly at the core of what makes workers valuable.

Support non-baccalaureate education opportunities

Despite the traditional association of critical thinking and reasoning skills with baccalaureate education, apprenticeships and other work-based learning opportunities can provide workers with much of the same knowledge needed for jobs of the future. The state and region's existing initiatives in this arena, which have already shown signs of success, may benefit from their expansion in magnitude and extent.

The state of Indiana's Apprenticeship Expansion Grant has supported several work-based learning programs in Opportunity Industries.⁹⁵ Of the \$1.18 million awarded to grant recipients, nearly \$840,000, or over 70 percent, went to sectors that concentrate good and promising jobs for sub-baccalaureate workers - namely, construction and manufacturing. The expansion of work-based training in these two opportunity-rich sectors helps to ensure apprentices in them will be able to work their way to the middle class. Further, there are also strong incentives for the state to extend the program into high-wage sectors that have not traditionally employed many sub-baccalaureate workers.

The benefits to building work-based learning programs in high-skill high-wage sectors such as professional services, management/headquarters, and finance are twofold:

- First, work-based programs in these sectors would enable sub-baccalaureate workers to experience the same high rates of growth in their employment opportunities as their baccalaureate peers in the future. As this report finds, growth in the sectors that concentrate the most good and promising jobs for sub-baccalaureate workers today are not poised to grow as quickly as those providing good and promising jobs for baccalaureate workers. By facilitating the entry of sub-baccalaureate workers into likely

high-growth sectors, their future labor market opportunities broaden considerably.

- Second, investment in the skill of the workforce in these high-skill high-wage industries is likely to encourage their retention and growth in the region. Institutions in these sectors are critical for the state and region's future growth and prosperity.

The expansion of apprenticeship programs, especially those targeted to women and people of color, also holds promise for narrowing the stark differences in access to opportunity jobs across race and gender lines. Sub-baccalaureate women in Central Indiana work largely in sectors with below-average wages and little opportunity for advancement, such as retail and hospitality, while their male peers are more likely to hold good or promising jobs in sectors like construction or manufacturing. Black and Hispanic workers are also less likely to hold opportunity jobs, despite their closer spatial proximity to them than white and non-Hispanic workers.

Indiana has made a clear commitment to supporting labor market access for traditionally disadvantaged groups, distributing over \$350,000 or nearly 30 percent of all Apprenticeship Expansion Grant funds to apprenticeship programs that focus on women, people of color, or ex-offenders.⁹⁶ Programs such as those run by the Indiana Plan, Fort Wayne Urban League, or PEN, which is run by the Department of Corrections, directly combat the forces driving the disparities these groups face—whether sociocultural factors that dissuade women from working in traditionally male-dominated sectors, or gaps in access or networks that connect workers of color or ex-offenders to high-paying jobs. Currently, these three programs have a reported reach of just 355 workers, leaving significant room for expansion and opportunity to connect more workers to jobs that offer a much more assured path to the middle class than the jobs they would likely to hold otherwise.

SUPPORT WORKING FAMILIES

As earlier findings in this report establish, one in five workers in Central Indiana struggled to make ends meet for their families in 2016. More than half these workers are parents. Advancing labor market opportunity and expanding access to higher education can help these families move into the middle class; however, supporting these workers as they make these transitions is crucial for the future well-being and economic prospects of the children they care for. The region and state of Indiana have several avenues for supporting working families as they work toward a more secure economic future.



Address benefit cliffs

Indiana has made significant progress on ameliorating the benefit “cliffs” that families face when an increase in wages leads to loss of public benefits such as SNAP, Medicaid, or subsidized child care that is greater than the earnings increase.⁹⁷ However, there still remain disincentives for workers at the precipice of losing their benefits to accept wage increases or seek slightly better-paying jobs.

For example, a working mother with two children whose annual income increases from \$29,000 to \$30,000 can no longer participate in Medicaid.⁹⁸ Accounting for the value of comparable health insurance on the private market, her health insurance expenditures without Medicaid would amount to nearly \$2,200 per year.⁹⁹ This cliff would not only eliminate her earnings gains, but also cost her just under an additional \$1,200 per year. For workers who face this choice, accepting a wage increase simply does not make financial sense.

As it stands, the structure of SNAP benefits results in a similar cliff effect and affects the poorest of low-income families. Although the program does phase out benefits slowly as recipients earn more income, families lose all SNAP benefits once they reach a federal gross income limit of 130 percent of the poverty line—equivalent to a monthly income of about \$2,200 in 2017 for a family of three. A family this size that moves from 120 percent of the poverty line to over 130 percent loses nearly \$200 per month in benefits.¹⁰⁰

However, the state has several opportunities to soften the cliff effect for workers with Medicaid and SNAP. Potential measures include:

- Increasing premiums for Medicaid holders whose earnings increase past the eligibility threshold, as an alternative to removing them from the program. Premiums would rise in sync with workers’ wages until the point at

which the worker could afford comparable insurance on the private market.

- Using a “broad-based categorical eligibility” standard to lift the gross income limit for SNAP. Thirty-nine (39) states have used this eligibility standard to allow for a continued gradual reduction in benefits past the federal threshold.¹⁰¹ Indiana has the opportunity to adopt this standard and increase its asset limit on SNAP eligibility, which currently stands at the federal threshold of \$2,250.

The progress the state and region have already made on supporting workers will hopefully make a brighter economic future more attainable for their children as they develop. By adjusting benefit eligibility using several mechanisms already in use by most other states, workers would be free to pursue increasingly higher-paying jobs without fear of negative consequences to their family’s well-being.

Expand child care subsidies and early childhood education

Workers and potential labor force participants may also face barriers to increasing their working hours due to high child care costs. The state’s expansion of the Child Care and Development Fund (CCDF) program and its careful evaluation of child care quality levels have gone a long way to ensuring that families can afford quality child care; however, many families who would benefit from these subsidies face long waitlists.¹⁰² In addition to increasing the availability of CCDF vouchers, the expansion of the state’s current early childhood education programs offers potential for relieving working families from the burden of child care and preschool expenses and allowing more parents to re-enter the labor force or pursue training opportunities.

The state’s pilot early education grant program, On My Way Pre-K, has yielded highly promising results in its first year.¹⁰³ Children enrolled in the program gained several school readiness skills more quickly than their peers outside of

the program, and over half of parents reported increasing work or school hours as a result of the program. Over one-third reported obtaining new employment and beginning school or job training.

As the Indiana Family and Social Services Administration (FSSA) looks toward the potential expansion of the program to all of Indiana’s counties, it may also consider the extension of the program to a broader group of children. Currently, children in families who earn more than 127 percent of the poverty threshold (or beyond 185 percent in select counties) are ineligible for the program.¹⁰⁴ Yet, expansion to children and families beyond this limit would likely yield similar benefits, given the high cost of child care. A family of three at 200 percent of the federal poverty line makes about \$41,560 per year; however, the annual cost of full-time level-two care for a preschooler in Marion County is on average upwards of \$9,000 without CCDF benefits, representing a significant portion of the average family’s expenses.¹⁰⁵ If a family does receive a CCDF voucher, the state pays 86 percent of the cost, or about \$8,100.¹⁰⁶ Given the significant cost to either working parents or the state, placing a child in an early education program rather than child care will likely yield greater returns for both the families and state in the future.

Expand the Earned Income Tax Credit

The state of Indiana can make work pay by expanding its Earned Income Tax Credit (EITC). The EITC is a refundable federal income tax credit for low- to moderate-income working families. Twenty-six (26) states, including Indiana, partially match families’ federal EITC. The EITC has become one of the nation’s most effective antipoverty programs.¹⁰⁷ In Indiana, the federal EITC has lifted as many as 100,000 Hoosiers out of poverty in previous years, half of them children.¹⁰⁸

EITC is designed to encourage and reward work. The credit a family receives is based on the

combined earnings of workers in a family. In the 2017 tax year, the federal government provided a maximum EITC of \$6,318 for working families earning \$18,340.¹⁰⁹ Families earning up to \$53,930 were eligible for smaller credits, depending on the number of children in the family.

Currently, Indiana provides a refundable EITC worth 9 percent of a family's federal EITC. Over 550,000 filers in Indiana received the federal EITC in tax year 2016, the latest year for which complete data are available.¹¹⁰ The average value of the federal credit for Indiana filers was \$2,413, which means the average Indiana credit was around \$215.

Increasing Indiana's federal EITC could further encourage and reward the work of low-income adults who struggle to make ends meet, helping their earnings go farther. The credit provides obvious benefits. It incentivizes work and provides extra income to needy families, who often spend most of their paychecks in the local economy. Many states have already taken this step, having recognized the benefits of EITC in combating poverty and raising living standards. In fact, 19 states provide higher federal matches than Indiana's 9 percent federal match, including Ohio (10 percent match), Illinois (10), Nebraska (10), Iowa (15), Kansas (17), Wisconsin (34), and Minnesota (45).¹¹¹





CONCLUSION

Today, Central Indiana faces urgent challenges around advancing opportunity for more workers and families. Despite several consecutive years of impressive job growth, Central Indiana's average earnings growth has lagged the nation's and a high share of workers and families continue to struggle to make ends meet. Recent economic dynamics have contributed to a staggering deficit of opportunity in the region, where too many jobs offer too little opportunity for workers to reach the middle class. This report finds that these trends are unlikely to improve on their own, which could lead to even deeper and more troubling multi-generational challenges in the years to come.

Yet this report identifies several strategies and tactics leaders in Central Indiana and the state can pursue that would begin to address and alleviate these challenges. The state and localities have worked together in recent years to bend the region's growth curve. They can do the same for opportunity by reviewing economic development priorities and tools—an effort already underway. Education and workforce groups can help better prepare and connect workers with promising labor market opportunities that can lead to good jobs and economic security. Further, a number of state and local policy initiatives could further encourage and support workers, active labor markets, economic mobility, and economic security.

Employers must also play a role. The competitive and financial pressures of today's economy continue to weaken ties between employers and workers. Yet talent remains the biggest competitive advantage for businesses in most industries, as evidenced by employers' common complaint that they cannot find or retain the talent their businesses depend on. Despite this, wage growth remains anemic. If attracting and retaining talent is a priority, employers should reexamine the quality of the jobs they offer and raise awareness of internal career ladders available to workers to motivate them to stay. In situations where workers' productivity puts a ceiling on wage rates, employers should continue to invest in training.

Clearly, successful implementation of these strategies hinges on coordination and alignment among a diverse set of institutions and systems throughout the region. No single institution or system can fully address the scale or breadth

of the region's challenges around advancing opportunity. Although each has its own role to play, true impact will depend on how well different organizations work together.

Central Indiana possesses many enviable advantages for advancing opportunity by these means. Though it faces gaps, the region continues to provide a relatively large stock of good and promising jobs compared to similar regions, especially for its sub-baccalaureate workers. This reflects the regional economy's continued specialization in advanced life sciences and manufacturing industries that concentrate labor market opportunity. The region also boasts highly engaged civic leaders and groups already committed to fostering a competitive economy that truly works for working families. Regional business groups have renewed their attention to issues of opportunity in the local economy, reflecting the business community's concern over the challenges explored in this report. Meanwhile, community groups, economic development organizations, and the region's workforce system have begun to develop new collaborations, strategies, and solutions to advance opportunity in Central Indiana.

Central Indiana's capacity to advance opportunity and the benefits of doing so are clear. Investing in strategies and policies that improve labor market opportunity can regrow the region's middle class, ensuring working families' economic independence and securing a more stable and prosperous economic future for the region. Central Indiana boasts the economic and civic assets it needs to do so. This report provides new information and insights that can enhance the impact of the region's new and ongoing efforts.

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APPENDICES

APPENDIX A. ANALYZING CENTRAL INDIANA'S EXPECTED VERSUS ACTUAL JOB AND EARNINGS GROWTH

Findings on Central Indiana's actual versus "expected" job and earnings growth come from shift-share analyses. Shift-share analysis disaggregates regional growth into national, industry, and local factors to reveal how local growth rates and patterns are distinguished from the nation's. These three factors are derived as follows:

- The **national factor** reveals how the region would have grown if each of its industry had added jobs or increased average annual earnings at the same rate as the nation. For each of Central Indiana's industries, jobs or average annual earnings in the base year are multiplied by the nation's year-over-year growth rate for the reference measure to derive the expected change in the measure in that year.
- The **industry factor** reveals how the region's industry mix—the distribution of its jobs by industry—contributed to the region's job and average annual earnings growth. For each of Central Indiana's industries, jobs or average annual earnings in the base year are multiplied by the respective national industry's year-over-year growth rate minus the national growth rate in that measure to derive the industry's expected rate of growth relative to the nation's overall rate of growth.

- The **local factor** reveals the difference between local and national rates of job and average annual earnings growth in each industry and in total. This is effectively the difference between local growth rates in each industry and the national growth rate in that industry for each reference measure on a year-to-year basis.

"Expected" growth refers to sum of the national and industry factors, which together reveal how Central Indiana's industries would have added jobs or increased average wages if they had followed national growth patterns in each year. Expected average annual earnings growth assumes that both jobs and average annual earnings in the industry would have grown in step with the national industry.

The findings presented in this report come from a *dynamic* shift-share analysis that measures these factors between years, which makes the analysis less sensitive to the choice of start and end years. The analysis is done at the most detailed level of industry disaggregation (six-digit NAICS industries) for each county. Results of the analysis are summarized at higher levels of industry and geographic aggregations.

APPENDIX B. IDENTIFYING CENTRAL INDIANA'S STRUGGLING FAMILIES

Findings on Central Indiana's struggling families come from a detailed accounting of families' basic expenses and an analysis of data from federally administered household surveys. Estimates of families' basic expenses comes from a Brookings analysis of the Self-Sufficiency Standard, developed by Diana Pearce of the University of Washington Center for Women's Welfare. The standard provides estimates of the income required for a family to maintain a "minimally adequate" standard of living.¹¹² The standard accounts for differences in a family's county of residence, its size, and the age of its children in determining food, housing, child care, transportation, medical care, and miscellaneous household expenses.

The Center for Women's Welfare developed Indiana's Self-Sufficiency Standard in 1999 and updated it in 2009 and 2016 in collaboration with the Indiana Institute for Working Families, a program of the Indiana Community Action Association. The Indiana Standard is used by a number of local organizations.¹¹³

Expenses

The Self-Sufficiency Standard provides estimated expenses for each family type using data sourced from federal agencies and public, private, and non-profit surveys. A brief description of the data sources and methodology for each category follows; additional detail concerning the calculation of expenses in each category can be found in the Center for Women's Welfare's Self-Sufficiency report for Indiana in 2016.

- Housing:** Housing expenses are based on the U.S. Department of Housing and Urban Development (HUD) Fair Market Rents (FMR) and are adjusted from metropolitan area-wide estimates to county-specific levels using median gross rent ratios derived from the

American Community Survey. The Brookings analysis assumes that if a respondent owns their own home without a mortgage, their monthly housing expense for property tax, homeowner's insurance, utilities, and maintenance is 0.058% of the value of their home plus \$66, derived based on an annual property tax rate of 0.7% and annual insurance and ownership-associated fees of \$800.¹¹⁴

- Child Care:** Child care expenses are calculated from data from the Indiana Child Care Market Survey and include the cost of full-time care for infants and preschoolers and part-time care for school-age children. The Brookings analysis assumes that non-working adults in families with children provide child care and therefore these families have no child care expenses.
- Food:** Food expenses are based on the U. S. Department of Agriculture Low-Cost Food Plan, which does not allow for any take-out, fast food, or restaurant meals. Food expenses are adjusted to county-specific levels using Feeding America's Map the Meal Gap data for the 2016 release of the Standard, and the ACCRA Cost of Living Index by the Council for Community and Economic Research for the 2009 and 2005 releases.
- Transportation:** Transportation expenses include expenses associated with car ownership, insurance, fixed, and per-mile costs. Data come from the American Automobile Association, the National Household Travel Survey, the National Association of Insurance Commissioners index, and the Consumer Expenditure Survey, and are adjusted from state- to county-specific levels using sample premiums from Allstate Insurance Company. The standard calculates cost estimates using public, rather than personal, transportation only when more than 7 percent of the county's workers use public transportation to get to and from work. No counties in Indiana meet this threshold.
- Health Care:** Health care premiums and out-of-pocket costs are estimated from the Medical Expenditure Panel Survey from the Agency

for Health care Research and Quality. For the 2016 standard, expenses are adjusted from the state to the county level using the lowest cost “silver” plan available in the corresponding health insurance marketplace. The 2009 standard adjusts state-level premiums using average premiums from Anthem Blue Cross Blue Shield of Indiana, the insurance company with the largest market share in the state, and the 2005 standard adjusts costs using data from the Indiana Comprehensive Health Insurance Association.

- 6. Miscellaneous:** Miscellaneous expenses are estimated as 10 percent of all other costs and cover clothing, shoes, cleaning products, household items, and other essentials.
- 7. Taxes and Tax Credits:** Taxes include payroll, federal, and state income taxes. Tax expenses also include credits, including the Earned Income Tax Credit (EITC), Child Care Tax Credit, and Child Tax Credit for qualifying families.
- 8. Emergency Expenses:** The Brookings analysis includes an alternative expense-based savings fund in lieu of the savings figures provided by the University of Washington. The Brookings savings measure is equivalent to the amount a family would have to save in order to amass three months of expenses (as determined by the sum of all other costs in the standard) over nine years; three months being Indiana’s average period of unemployment after the state’s average period between involuntary layoffs according to Brookings analysis of the Current Population Survey.
- 9. Mortgage Savings:** The Brookings analysis adds an additional savings sum for individuals who report renting their home. This amount is equivalent to the closing costs and down payment for a home for each family, calculated as roughly 8 percent of the price of a median home of the relevant size in the county, saved over 10 years.

Family compositions

Each of these expense categories is estimated for 472 family compositions in 2016 and 70 family compositions in 2009 and 2005 for each county in Indiana.¹¹⁵ Brookings interpolates the Self-Sufficiency Standard for the years between 2005, 2009, and 2016 by assuming a constant compound annual growth between years for matched family compositions. Because the 2005 and 2009 iterations of the standard contain fewer family compositions than 2016, expenses for these missing compositions are estimated using the mean of the compound annual growth rates of the 70 matched compositions. Brookings applies these interpolated expenses for each cost category except for housing. In order to more closely reflect the trends in housing prices in the years between releases of the standard, Brookings uses the most recent year-specific FMR estimates available from the HUD website.

Application to household survey data

Brookings applies the Self-Sufficiency Standard to American Community Survey (ACS) 1-year microdata, gathered from the University of Minnesota’s Integrated Public Use Microdata Series (IPUMS) for each year from 2006 to 2016.¹¹⁶

Geography

Each observation in the microdata from the ACS is assigned to a unit of geography called a Public Use Microdata Area (PUMA). PUMAs represent the smallest, most detailed level of geography available in the public-use files, with each PUMA covering an area of at least 100,000 people to preserve survey respondents’ anonymity. PUMAs do not overlap; they fully partition each state into contiguous areas. Depending on the population in a region, PUMAs can encompass entire counties

and groups of counties or cover part of a county. As such, PUMAs can be grouped into near (but not always perfect) approximations of counties. Brookings uses PUMA-to-county crosswalks from the Missouri Census Data Center's Geographic Correspondence Engine, which match both the 2000 and 2013 PUMA delineations to current county borders.¹¹⁷ If a PUMA covers more than one county, Brookings assigns the Self-Sufficiency Standard of the county with the greatest share of the PUMA's 2010 population to all the residents of the PUMA.

Family definition

Families are identified within the ACS microdata by a distinct combination of family subunit number (an IPUMS-generated variable), household serial number, and survey year. Brookings limits the ACS microdata to all families residing in PUMAs entirely or partially within the Indianapolis metro area, except those in which all employed adults are in the armed forces or self-employed, and those in which all members are between 18 and 24 years old and enrolled in school (and are therefore likely entirely composed of college students). Brookings assigns the appropriate self-sufficiency threshold to each family based on its size, the labor force statuses of its adult members, the ages of its children, and household tenure. Children aged zero to three years are classified as infants; three to five years as preschoolers; six to 12 years as school-age children; and 13 to 18 year olds as teenagers. All individuals 25 years or older are considered adults, as well as those individuals from 18 to 24 years old who are not enrolled in school.

The University of Washington does not provide exact estimates of the standard for certain large and rare family compositions; for these families,

Brookings applies the standard associated with the closest available composition. For example, Brookings assigns a family with three adults and four infants (a composition not provided by the center) the average standard of families with three adults and four children of any age class, a composition that is among the 472 provided by the 2016 standard. Brookings assigns families with compositions for which the Self-Sufficiency Standard is not provided and cannot be extrapolated a living wage estimate equal to twice the federal poverty line, adjusted using the consumer price index for the census division in the corresponding year. This modified threshold applies to approximately 2 percent of all records in the time series from 2006 to 2016.

Income

Brookings calculates each family's total annual income by summing each member's non-transfer sources of income, including wage income, retirement income, rental/investment income, and business income. Brookings includes income from the Social Security and Supplemental Security Programs for individuals with disabilities and Social Security income for individuals over the age of 65 or those who report being retired.

Brookings defines "struggling families" or "families that struggling to make ends meet" as individuals in families whose total non-transfer family income (as described above) is lower than their corresponding Self-Sufficiency Standard. Brookings uses household weights to calculate the number of families below the Self-Sufficiency Standard and replicate weights provided by the ACS to calculate standard errors.¹¹⁸ Brookings assumes that adults living in the same family as children provide support for the children.

APPENDIX C. IDENTIFYING CENTRAL INDIANA'S OPPORTUNITY INDUSTRIES

Findings on Central Indiana's Opportunity Industries, including the number and share of good and promising jobs, come from a series of analyses on job quality and mobility among occupations done as part of a forthcoming national report from Brookings. This appendix describes the major pieces of these analyses and how they are applied in this report. Interested readers should consult the national report for a more detailed account of the methodology, assumptions, and sources.

Data on labor market behavior

The reports' findings on occupational mobility come from an analysis of records of real workers' labor market behavior and occupational transitions. These records of workers' occupational transitions, hours worked, and wages come from the monthly version of the Current Population Survey (CPS), which is a household survey administered by the U.S. Bureau of Labor Statistics (BLS) and the U.S. Census Bureau.

The CPS is a monthly survey of roughly 60,000 housing units throughout the United States. The survey uses a unique panel design that yields month-to-month observations of the same housing unit and its occupants over two four-month periods one year apart. These month-to-month observations form the basis for identifying occupational transitions and non-transitions among employed household members.

In the final month of a housing unit's two four-month rotations in the CPS, employed household members are interviewed about their hours and earnings. Observations from these final months of each survey rotation form the basis for

identifying the typical hours worked and earnings per hour for workers in different occupations and industries.

Although the CPS is designed as a nationally representative survey, it is the most detailed and appropriate source for this type of study. Other potential sources query individuals' labor market behavior infrequently or are not representative. The authors took steps in the analyses described below to extend the CPS's applicability to local circumstances.

Data on health-insurance coverage—a proxy for other types of employment benefits—come from the American Community Survey (ACS), which provides a larger and more locally representative sample. Panel data like those needed from the CPS to identify occupational transitions were not necessary for identifying workers who receive employer-sponsored health insurance.

Data on job openings by occupation

Estimates of occupational job openings come from a number of assimilated data sources and methods. These estimates provide a basis for predicting the likelihood of an occupational transition and, relatedly, extend the applicability of the nationally representative CPS data on occupational mobility to sub-state areas.

A job opening is created from one of two sources. First, a job opening is created when a business decides to hire for a position that did not previously exist. This is the job growth source. Second, a job opening is created when an incumbent worker leaves a job—for either another job or non-employment, such as retirement. This is the turnover source.

Data for the job growth source were generated by transforming county-level annual occupational employment data from Economic Modeling Specialists, Inc., a private data provider, into a

monthly series and then subtracting the previous month's number of jobs from the current month's. These data were projected out to 2027 using Moody's Analytics industry job growth projections and BLS Occupational Employment Projections.

Data for job openings from turnover were generated from the authors' analysis of the CPS data described above. Following methods developed by BLS researchers, the authors developed statistical models to derive the probability that an incumbent worker would leave their occupation or exit the labor force. The CPS data were pooled over different time periods to provide average rates of turnover by month. These probabilities were also projected into the future.

The authors then summed these estimates of monthly occupational job openings from growth and turnover at the national level. In aggregate, these estimates of total job openings are very similar to those from the BLS's Job Openings and Labor Turnover Survey (JOLTS). Job openings from growth are estimated for each occupation at the metropolitan area-level. National-level estimates of rates of turnover in each occupation are applied to metropolitan areas using occupational employment patterns.

Modeling local career pathways from data on occupational mobility

With these data and estimates in hand, the authors then began a three-step process of modeling career pathways for workers within the metropolitan area.

1. ESTIMATING THE PROBABILITY OF SWITCHING BETWEEN TWO GIVEN OCCUPATIONS

The authors used regression analysis to estimate the probability that an incumbent worker would

switch from his or her present occupation to another. This was done for each pair of transitions observed in the CPS data on occupation mobility. In each regression, the universe was any respondent who reported working in the origin occupation in the prior month. The dependent variable indicated whether the respondent worked in the destination occupation in question during the current month. The authors used logistic regressions that condition the probability of switching between the two occupations on the destination occupation's share of job openings in the vicinity of the respondent in the current month and the respondent's personal characteristics, including age in years, sex, race, and level of education.

In the authors' view, this is the best approach to estimating the probability of occupational switching given the task at hand: using national data to develop localized estimates of the probability of occupational switching. For this purpose, the authors were not concerned with explanatory power or statistical significance. Instead, the concern was predictive power. Somewhat surprisingly, most of the successful regressions have reasonable explanatory power. Based on the authors' review of literature, most also have better predictive power than regressions conditioned on occupational similarity (based on shared human capital). Models for some pairs of occupations had too few observations to produce valid results. These models were omitted from further steps.

2. CONSTRUCTING OCCUPATIONAL TRANSITION MATRICES

The results of these regressions were then applied against data on the metropolitan area's workforce characteristics and projected future job openings in order to derive monthly person-specific occupational transition matrices. In these matrices, each cell contains the probability that a person meeting the characteristics of

that persona would switch from a given origin occupation (the row) to a given destination occupation (the column) in a given month in the future in the metropolitan area.

This process began by defining a universe of personas. Each persona is defined by the personal characteristics included in the occupational transition regressions. There is one persona for every combination of age, sex, race, and education included in the regressions, resulting in many thousands of personas. For example, one persona represents a 35-year-old black non-Hispanic male with a bachelor's degree. Another represents a 50-year-old Hispanic female with some college experience. The authors calculated a person weight for persona using data from the ACS so that each matrix represents the number of workers that belong to that persona in the metropolitan area.

Using the results from successful occupational transition regressions, the authors populated cells of the matrices with the probability that a person will transition between a given pair of occupations given their personal characteristics and the destination occupation's projected share of job openings in a given future month in the metro area. For pairs of occupational transitions where regressions were unsuccessful, the authors assigned the observed rate of transitions from the CPS data rather than a probability estimated from a regression. For pairs of occupations where no transitions are observed in the CPS data, a transition probability of zero was assigned. Finally, the probability of not transitioning from a given occupation to another (contained in the cells on the matrix's diagonal) was set equal to one minus the sum of the other cells in the row.

This process was done for every persona and for every month from January, 2017 to December, 2027, resulting in several hundred thousand matrices, each conveying transition probabilities for every pair of more than 500 occupations that describe every job in the metropolitan area. Each matrix conveys the likelihoods that a

person fitting the characteristics of that persona will switch between any two occupations in a given month in the metropolitan area, and each persona's matrix is weighted by the number of actual workers who fit the persona's definition in the metropolitan area from five years of pooled ACS microdata.

3. ESTIMATING OCCUPATIONAL TRANSITIONS IN CAREER PATHWAYS

Finally, to estimate the cumulative conditional probability that a worker who begins in any one occupation at the end of 2016 will end up in any other by the end of 2027, these monthly persona-specific matrices are multiplied against each other in what is known as a Markov Chain. This begins by multiplying the matrix for January, 2017 against the matrix for February, 2017. The matrix product of this multiplication indicates the probability that a worker starting in a given occupation in December, 2016 will transition to any other occupation come February, 2017. This matrix product is then multiplied against the matrix for the month of March, 2017, whose product is multiplied against the matrix for April, 2017, and so on until December, 2027.

The final matrix product that results from this process, and the person weight assigned to the original matrices, as described above, implies the cumulative conditional probability of transitioning (or not) into any other occupation by December, 2027 and forms the basis for these reports' analysis of local career pathways.

This approach cannot perfectly describe career pathways. It rests on an assumption that a worker's chances of transitioning into another occupation depends only on the worker's occupation in the prior month (along with the variables factored into the regressions). Actually, transitions likely also depend on the worker's tenure in his or her occupation and may also depend on the worker's prior occupations or job, along with other unobservable factors. In short, this approach cannot capture the importance

of a person's résumé in predicting their future occupational transitions. However, such information is at least partially factored into the analysis given that the real workers represented in the underlying CPS data were in fact able to obtain those jobs and make those transitions.

Estimating earnings and benefits

In the final phase of this analysis, hours, wages, and benefits were estimated for all starting and ending occupations for each persona. Estimates for each of these measures are derived from regression analyses of the CPS ORG data or ACS data described above. Each of these regressions are premised on the Mincerian earnings function, a model developed by economist Jacob Mincer that labor economists commonly use to explain wages.

The regressions used in the present set of analyses build from Mincer's relatively simple model. In Mincer's model, education and work experience explain wages. Here, age is used as a proxy for work experience. Additionally, regressions for each measure include variables indicating sex, race, and sector of employment since labor market outcomes like wages are known to vary along these lines even between workers in the same occupation. For the wage

and benefit regressions, full- or part-time status is also included as an explanatory variable. For the benefit regressions, state fixed effects are included. (Benefit regressions only include data from years after the implementation of the Affordable Care Act). All regressions are carried out for each occupation.

Estimating each measure involved a different model specification. To estimate hours, the authors used an ordered logistic regression. To estimate probability of receiving employer-sponsored health insurance—a proxy for other employment benefits—the authors used a logistic regression. To estimate hourly wage, the authors used a generalized linear model where the wage is modeled as its logarithm. Additionally, the authors estimated workers' exempt or non-exempt status to determine their overtime eligibility. This logistic regression excluded demographic factors other than age and included state fixed effects.

The results of all of these estimates—occupational transitions, hours worked, wages earned, overtime eligibility, and benefits—were evaluated together to determine whether the average worker in a given persona, given current occupation, and given future occupation has a good, promising, or other job.

ENDNOTES

1. Analyses of the Central Indiana region presented in this report refer to the 11-county Indianapolis-Carmel-Anderson, IN metropolitan statistical area (MSA) as defined by the U.S. Office of Management and Budget, which comprises the following Indiana counties: Boone, Brown, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, Putnam, and Shelby.
2. Authors' analysis of Economic Modeling Specialists, Inc. (EMSI) estimates.
3. Author's analysis of U.S. Bureau of Economic Analysis estimates.
4. Chad Shearer and others, "2018 Metro Monitor," 2018.
5. Authors' analysis of EMSI estimates and data from Mercedes Delgado, Michael Porter, and Scott Stern, "Defining Clusters of Related Industries," 2014.
6. Authors' analysis of EMSI estimates and data from Delgado and others, "Defining Clusters," 2014.
7. Includes government-run hospitals.
8. Ibid.
9. Ibid.
10. Ibid.
11. Authors' analysis of Council for Community and Economic Research Cost of Living Index estimates.
12. Authors' analysis of EMSI estimates.
13. Authors' analysis of American Community Survey public-use microdata.
14. Ibid.
15. The U.S. Office of Management and Budget designated the first federal poverty threshold in 1969 as the government's official statistical definition of poverty. Mollie Orshansky, the author of the threshold, intended it to be an estimate of the cost associated with a "minimal but adequate" standard of living for a family of four. Orshansky based the threshold on the cost of the U.S. Department of Agriculture's Economy Food Plan in 1961 and the 1955 Household Food Consumption Survey, which found that one-third of after-tax household expenditures went toward purchasing food. Although the cost of the federal government has adjusted economy food plan for inflation since its establishment, the "multiplier" (the inverse of the share of post-tax income that families spend on food) remains three. Since the establishment of the threshold, the food share of after-tax household expenditures has dropped from drastically (from 33% in 1955 to 12.8% in 2008) and the price of other necessities such as housing have increased, resulting in a threshold that is widely considered out-of-date with modern prices and spending patterns. For more information, see "The Development of the Orshansky Poverty Thresholds and Their Subsequent History as the Official U.S. Poverty Measure." <https://www.census.gov/content/dam/Census/library/working-papers/1997/demo/orshansky.pdf>; and "Why the United States Needs an Improved Measure of Poverty", Testimony to the Subcommittee on Income Security and Family Support House Ways and Means Committee by Rebecca M. Blank. https://www.brookings.edu/wp-content/uploads/2016/06/0717_poverty_blank-1.pdf.
16. Elizabeth Kneebone and Natalie Holmes, "New Census data finds scant progress against poverty," (2015) and U.S. Census Bureau, 2016 American Community Survey.

- 17.** U.S. Census Bureau, "Poverty Thresholds for 2016 by Size of Family and Number of Related Children Under 18 Years," 2016. For more information, see note (15).
- 18.** Diana Pearce, "Self-Sufficiency Standard," Center for Women's Welfare, University of Washington. <http://selfsufficiencystandard.org>. For more information, see Appendix B.
- 19.** Higher costs of living, changes in family sizes, and migration together explain only about one-fifth of the rise in people who struggle to get by, according to authors' analysis of University of Washington Center for Women's Welfare County-Based Sufficiency Standard and American Community Survey public-use microdata.
- 20.** Authors' analysis of University of Washington Center for Women's Welfare County-Based Sufficiency Standard and American Community Survey public-use microdata.
- 21.** Ibid.
- 22.** Authors' analysis of American Community Survey public-use microdata.
- 23.** Ibid.
- 24.** Authors' analysis of University of Washington Center for Women's Welfare County-Based Sufficiency Standard and American Community Survey public-use microdata.
- 25.** Raj Chetty and others, "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States," Quarterly Journal of Economics 129, No. 4 (2014): 1553-1623.
- 26.** World Trade Organization, "Trade and tariff data: Merchandise trade," 2018. Available at: www.stat.wto.org (accessed June, 2018).
- 27.** David Autor, David Dorn, and Gordon H. Hanson, "The China Shock: Learning from Labor-Market Adjustment to Large Changes in Trade," Annual Review of Economics 8: 205-40, 2016.
- 28.** David Autor, David Dorn, and Gordon Hanson, "Untangling Trade and Technology: Evidence from Local Labor Markets," The Economic Journal 125 (May): 621-646, 2015.
- 29.** U.S. Bureau of Labor Statistics, "Union Members Summary," January 2018.
- 30.** Jake Rosenfeld, Patrick Denice, and Jennifer Laird, "Union decline lowers wages of nonunion workers," Economic Policy Institute, 2016.
- 31.** Lawrence F. Katz and Alan B. Krueger, "The Rise and Nature of Alternative Work Arrangements in the United States, 1995-2015," National Bureau of Economic Research No. w22667, 2016.
- 32.** Ibid.
- 33.** Lawrence Mishel, "Yes, Manufacturing Still Provides a Pay Advantage, but Staffing Firm Outsourcing is Eroding It," Economic Policy Institute, 2018; Andrew Stettner, Michael Cassidy, and George Wentworth, "A New Safety Net for an Era of Unstable Earnings," The Century Foundation, 2016.
- 34.** James Manyika and others, "Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation," McKinsey Global Institute, 2017.
- 35.** Authors' analysis of University of Washington Center for Women's Welfare County-Based Sufficiency Standard and American Community Survey public-use microdata.
- 36.** This choice of wage and salary threshold for good jobs was informed by discussions with professionals from local social service organizations, government, and business groups in Central Indiana. As other findings in this report reveal, this threshold would provide a majority of workers and about half of all people in struggling families in Central Indiana with the income they need to achieve economic security and independence.

37. These anticipated trends take into account recent regional growth patterns, macroeconomic projections, and modest estimates of labor automation. A description of the underlying data and methods of analysis is available in an appendix.

38. U.S. Office of Management and Budget, "2012 North American Industry Classification System," 2012. See: <https://www.census.gov/eos/www/naics/>.

39. U.S. Bureau of Labor Statistics, "2010 Standard Occupational Classification System," 2010. See: <https://www.bls.gov/soc/>.

40. About 0.3 percent of the region's jobs are in occupations for which job quality characteristics cannot be determined. Most of these are occupations held by highly-skilled workers, such as mathematicians and statisticians, or blue collar jobs in transportation or mining industries, such as ship-captains or derrick riggers. Postal service workers also do not appear in the job-quality analysis. Although most of the jobs in these occupations are very likely to be good ones, since their quality cannot be determined they are set aside from this analysis. Their exclusion does not meaningfully affect the findings or implications.

41. Nearly 60 percent of these "other" jobs provide benefits but provide insufficient wages or hours to qualify as good jobs. About 8 percent provide sufficient wages and hours but no benefits.

42. Why doesn't Central Indiana need enough good or promising jobs for every single worker? This analysis of families' economic circumstances finds that many workers meet all their family's basic needs without a good job. Some workers' needs amount to less than the \$37,440 per year threshold for good jobs applied here. Other workers may have a higher-earning partner or sources of unearned income which, together with their earnings, meet all their family's needs.

43. Unlike jobs for sub-baccalaureate workers, good jobs and promising jobs for high-skill workers are similarly distributed across industries and far fewer promising career pathways for high-skill workers necessarily span across industries. The biggest factor that distinguished good jobs for high-skill workers from promising jobs for high-skill workers is the age of the worker. Therefore, these two types of jobs are considered together here.

44. Mark Muro and others, "America's Advanced Industries: What they Are, Where They Are, and Why They Matter," Brookings, 2015.

45. Ibid.

46. Authors' analysis of data from Indiana Economic Development Corporation's Transparency Portal.

47. Joseph Parilla and Sifan Liu, "Examining the value of local economic development incentives," 2018.

48. This analysis builds on the career pathways analysis covered here by including information about the content of good and promising jobs. The U.S. Department of Labor's O*NET program provides detailed information about the content of jobs in different occupations, including the specific types of knowledge, skills, and abilities required in the occupation. These attributes were measured for workers' starting and ending occupations in career pathways that lead to good jobs. The difference in the level of these attributes between these starting and ending points in workers' career pathways reveals the change in level associated with the workers' career mobility. These changes were then correlated with changes in workers' estimated earnings at starting and ending points to reveal the types of knowledge, skills, and abilities that are most closely associated with larger earnings gains.

49. Although jobs in these occupations and presumably the pathways to them tend to be male-dominated, many of the same types of knowledge, skills, and abilities are also among the most important to sub-baccalaureate women's career progression toward good jobs. In fact, repairing skills, sound localization ability, spatial orientation ability, reaction time ability, and night vision ability appear more important to women's upward mobility than to men's.

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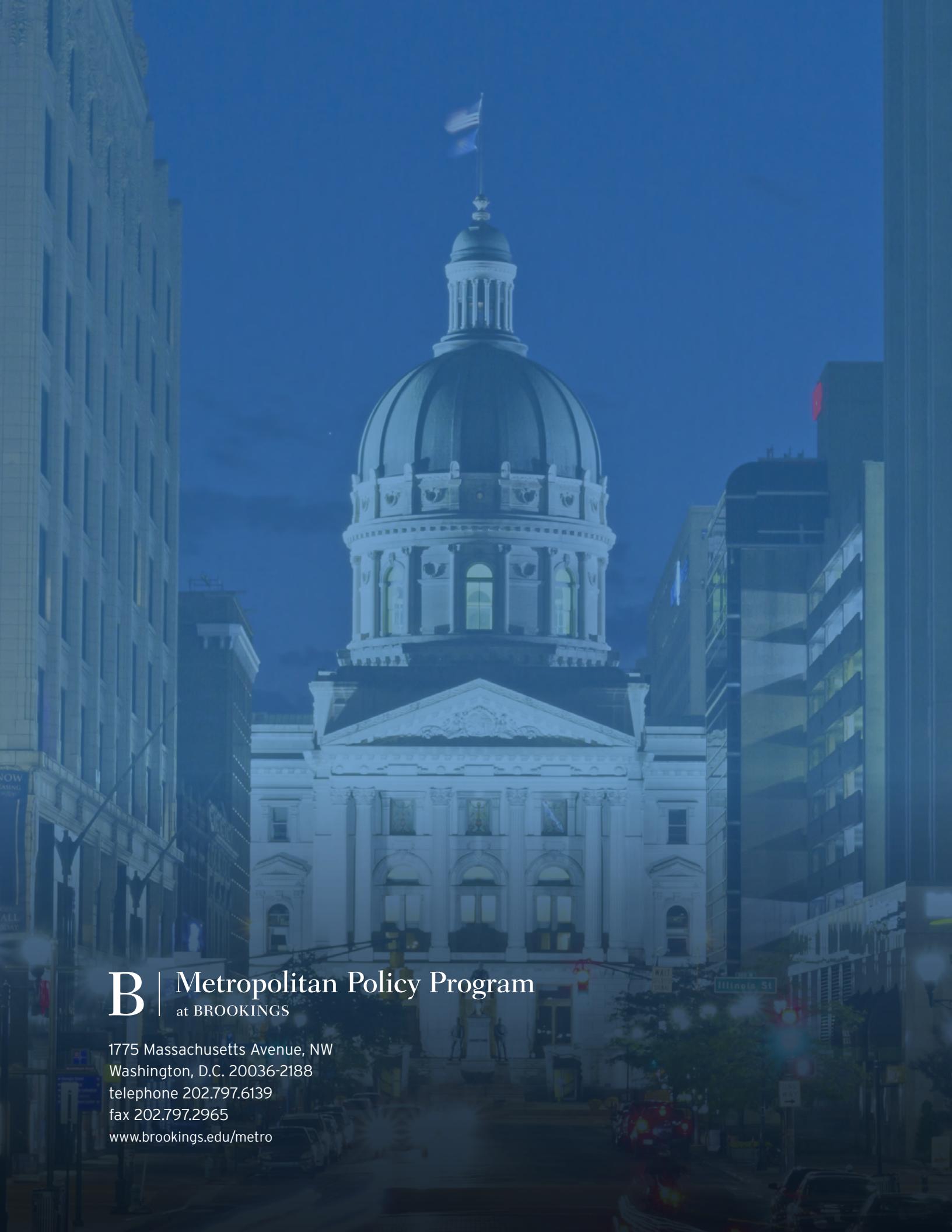
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