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Finding Work: New Career
Pathways in an Evolving
Labor Market

Migration Trends and
Population Change Between
the Censuses

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From the Editor

Keen attention is paid to the latest job numbers—often immediately followed by dismay at the continuing unemployment and lack of new jobs. Both articles in this issue of the IBR focus on jobs. Tim Slaper reveals a new way of approaching a career: pathway clusters. The principle is pretty simple: job seekers will seek and be most productive in jobs that are most similar to the ones they lost and the pathway cluster results in many possible job targets, not just one.

And speaking of job loss, State Demographer Matt Kinghorn gives us a close-up at migration findings, taking us on a statewide journey across population-losing counties and population-gainers. The evidence seems clear that many of our industrial-based older communities have seen people move away after jobs were lost. Will we continue to see such patterns of migration, loss and gain? Matt is also working on our first set of Indiana and county population projections (by age, race and sex) for the 2010s; look for those in our Spring issue.

Finding Work: New Career Pathways in an Evolving Labor Market

Timothy F. Slaper, Ph.D.: Director of Economic Analysis, Indiana Business Research Center, Indiana University Kelley School of Business

The manufacturing sector, and the automobile industry in particular, was under stress well before the advent of the Great Recession. But as the Great Recession took hold, the manufacturing sector hemorrhaged middle-class jobs at a staggering rate.

In 2009, automotive sales were only 10.4 million units—the worst year for the market in almost 30 years. The economies of Indiana, Michigan and Ohio depend heavily on automotive and parts production, accounting for nearly 47 percent of all U.S. production in 2010. As a result, the automotive crisis and broader economic recession hit our three-state region particularly hard.

Already, many automotive manufacturing and supplier plants had been shuttered, and communities were dealing with the impact of thousands of workers who had been bought out, retired or laid off. For many workers, their jobs were gone and they weren't ever coming back. For talented younger workers who might have considered an automotive career, the instability of the industry led them to look elsewhere.

The Indiana Department of Workforce Development (IDWD) and the Indiana Business Research Center (IBRC), together with partners in Michigan and Ohio, collaborated on a research project called Driving Change.¹ The goal of the Driving Change tri-state research consortium was to understand the specific nature of the auto industry transformation and skills relevant to efficient and renewable vehicle technologies and other career opportunities in the broader economy. This article highlights two of the project's objectives:

- Finding alternative career path opportunities for dislocated workers for jobs in demand

with an emphasis on jobs in the green economy

- Identifying the current and projected skills gaps of the workforce and the required training needed to compete for jobs in demand and green job opportunities

This article first highlights the occupations that are in demand today and those with the brightest prospects for the future. The data are organized around the Driving Change research themes of jobs in the automobile sector and the green economy.

Second, the article moves on to the concept of "pathway clusters." Simply put, a pathway cluster provides a set of occupational options that are well aligned with a worker's knowledge, skill set and personal traits. Pathway clusters are not typical because they are not organized around a particular industry like health care or functions like business administration. Instead, pathway clusters are organized around broad similarities and differences between occupations.

Third, the article considers the time commitment and the relative difficulty of transitioning from one's original occupation to a different occupation. The goal was to boil down the complex components of a worker's skills, an occupation's needs and the mechanisms needed to move from one job to another into one dimension. That dimension is time. The research team developed a time to transition measure—"trip time"—that could inform a worker's decision about which career pathway to follow.

Finally, for the dislocated worker the question of how to move from Point A to Point B is far from academic. Training dollars are of little

use in workforce development efforts if they fail to move an individual closer to re-employment in a career with a future. This new pathway cluster analysis and use of trip time as a simple measure to gauge the ease or difficulty of career alternatives will help these dislocated workers make decisions about which transitions are the most feasible.

Jobs for the Future

Structural and cyclical economic forces have had a devastating effect on the labor force across the entire economy and the auto sector especially. Where will these displaced workers find jobs?

Many economists, workforce analysts and policymakers across the nation have asserted that the burgeoning green economy may provide new job opportunities. There is great interest in obtaining information about the quantity and characteristics of jobs produced by the green economy, but traditional sources of information on industries and occupations are not specific enough to accurately measure the number of green jobs in the economy. As a result, IDWD and the IBRC conducted a green jobs survey.²

There were four important survey findings:

1. Indiana has a significant number of green jobs. Indiana has an estimated 46,879 direct green jobs or about 1.7 percent of the workforce.
2. Because they are concentrated in industries that are cyclical, green jobs in Indiana are more sensitive to economic cycles.
3. Employers stated that most green jobs simply required on-the-job training. Production green jobs, for the most part, did not require special skills, but jobs like engineering did.

4. The occupations that are in demand today and poised for high growth in the future are those requiring expanded skill sets and higher levels of education and training.





While the green jobs surveys asked employers about their green jobs hiring expectations in the next two years, the research team needed a richer and more complete data set to assess the future of green and




















growing jobs. To analyze current job opportunities in the green economy, the research team used the Help Wanted Online (HWOL) database from The Conference Board to get a snapshot of current hiring activity. The research team used BLS and O*NET data to assess long-term occupational prospects in the tri-state region.

Green and Growing Occupations

What career opportunities exist in the green economy?³ Table 1 presents the top 15 green occupation vacancy postings from HWOL in the fourth quarter of 2010 in the tri-state consortium region. To understand the relative strength of current demand for an occupation, the research team calculated the ratio of HWOL postings to the average 2009 employment in that occupation.⁴

■ TABLE 1: Tri-State Top 15 Green and Growing Non-Automotive Occupation Postings and Expected Job Change to 2018

 Environmental Services  Miscellaneous Industries Not Elsewhere Classified  Non-Auto Manufacturing  Energy-Related Industries

Rank	Description	HWOL Green Postings ¹	10-Year Expected Growth ²	Industry Group ³	Postings-to-Employment Ratio ⁴	Mean Wage ⁵
1	Truck Drivers, Heavy and Tractor-Trailer	16,343	13.0%		1 : 10	\$39,190
2	Customer Service Representatives	13,767	17.7%		1 : 13	\$32,898
3	Marketing Managers	5,919	12.5%		1 : 2	\$106,051
4	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	5,194	9.7%		1 : 8	\$80,298
5	General and Operations Managers	4,038	-0.1%	 	1 : 22	\$108,057
6	Laborers and Freight, Stock, and Material Movers, Handlers	3,131	-0.8%		1 : 75	\$25,930
7	Automotive Specialty Technicians	2,745	4.7%		1 : 20	\$37,297
8	Public Relations Specialists	1,826	24.0%		1 : 9	\$51,630
9	Training and Development Specialists	1,794	23.3%	 	1 : 10	\$53,051
10	Engineering Managers	1,638	6.2%		1 : 11	\$109,392
11	Welders, Cutters, and Welder Fitters	1,574	-1.6%	 	1 : 21	\$35,842
12	Computer Software Engineers, Systems Software	1,377	30.4%		1 : 14	\$81,926
13	Production, Planning, and Expediting Clerks	1,365	1.5%		1 : 20	\$41,314
14	Aerospace Engineers	1,353	10.4%		1 : 1	\$86,484
15	Heating and Air Conditioning Mechanics and Installers	1,323	28.1%	 	1 : 16	\$45,441

¹ Source: HWOL, Quarter 4, 2010: Green jobs total, N=131,248.

² Source: BLS; Projections from 2008 to 2018 are for parent, six-digit SOC. HWOL and O*NET now report occupations at the eight-digit SOC detail. As a result, those occupations listed in this table are at the more detailed, eight-digit SOC while the projection figures are for the parent six-digit SOC. Hence the projection is for a group of similar occupations and not the specific occupation listed in the table.

³ Source: O*NET; O*NET categorizes green industries into 12 sectors. For the purposes of this report, the research team recast those 12 sectors into five categories (auto manufacturing being the fifth).

⁴ Source: IBRC using HWOL and BLS/OES data

⁵ Source: BLS. Mean wage calculated for the tri-state region using a weighted average.

For example, in the fourth quarter of 2010, there was one posting for one aerospace engineer currently employed in the state. This indicates high demand for aerospace engineers, in contrast to material movers and freight stock handlers with a ratio of one posting to 75 current workers. Based on BLS projections, the need for aerospace engineers will grow more than 10 percent, while the demand for material movers and freight stock handlers is expected to decline in the next 10 years.

Indiana's top 15 occupations largely mirror the tri-state region. As demand for labor and the type of occupation is geographically determined, a would-be job seeker should consider the labor demand in his or her area. For example, the occupational demand for gaming supervisors is dependent upon the presence of a casino. The IDWD publishes the "Hoosier Hot 50" jobs for each of the state's 11 economic growth regions to help one explore regional demand.⁵

Other Growing Occupations

Even though many career opportunities exist in the green economy, the demand for non-green jobs (as evidenced by the more favorable postings-to-employment ratios in this section) indicate that non-green jobs should also be explored as career alternatives for the displaced workforce.

Table 2 presents the region's top 15 non-green occupation job vacancy postings from HWOL in the fourth quarter of 2010. The top 15 occupations account for more

than 25 percent of all non-green postings. Medical and health-related occupations dominate the list. None of the non-green occupations that top the list are in manufacturing.

Whether one is a new entrant to the labor force or a worker affected by the Great Recession and wishing to transition to another occupation, the process of winnowing down the hundreds of possible occupations into a manageable and realistic set of target occupations can be daunting. The next two sections present new resources for workers in transition to find those target occupations.

Career Pathway Clusters

How can a dislocated worker plot a path to a new job that uses the skill set he or she has developed over the years? The "pathway cluster" tool is the first step in addressing this question.

The operating principle for the pathway cluster concept is that workers will seek, and be most productive in, occupations that are most similar to their current or former jobs. Based on O'NET's occupation description categories, occupations are grouped into a pathway cluster based on similarities in worker requirements, worker traits and occupational requirements.⁶ Because pathway clusters are constructed based on occupational and worker similarities, transitions from one pathway cluster to a different cluster would be relatively more difficult.

A key advantage of pathway clusters over other career transition resources is that the user is provided

“The operating principle for the pathway cluster concept is that workers will seek, and be most productive in, occupations that are most similar to their current or former jobs.”

a set of many possible target occupations, rather than one at a time. Combined with the skills-gap analysis (in the next section), a worker in transition can judge the relative ease required to move from one occupation to another. Also, the pathway cluster approach uses all occupation description categories of O'NET, not just a subset.

In order to create pathway clusters, the research team analyzed around 500 dimensions and characteristics for each occupation. The research team compressed these into three O'NET-type categories to develop pathway clusters:

- **Requirements of the worker:** Worker requirements that can be gained by the worker through study or training
- **Traits of the worker:** The internal or personal traits of workers who are drawn to—or perform well in—the occupation
- **Occupational requirements:** The requirements for the job, such as work activities (e.g., lifting heavy objects, personal interactions or gathering data)

Compressing the O'NET data—removing characteristics that overlap and realigning the remaining occupation characteristics—means that pathway cluster definitions

“A key advantage of pathway clusters over other career transition resources is that the user is provided a set of many possible target occupations, rather than one at a time.”

■ TABLE 2: Tri-State Top 15 Non-Green Occupation Postings and Expected Growth to 2018

Rank	Description	HWOL Green Postings ¹	10-Year Expected Growth ²	Postings-to-Employment Ratio ³	Mean Wage ⁴
1	Registered Nurses	23,415	22.2%	1 : 11	\$60,750
2	Retail Salespersons	16,233	8.4%	1 : 23	\$23,938
3	Occupational Therapists	14,728	25.6%	1 : 1	\$68,962
4	Physical Therapists	12,620	30.3%	1 : 1	\$73,557
5	First-Line Supervisors/Managers of Retail Sales Workers	12,003	5.3%	1 : 8	\$38,589
6	Computer Systems Analysts	10,422	20.3%	1 : 4	\$77,109
7	Executive Secretaries and Administrative Assistants	9,971	12.8%	1 : 10	\$41,237
8	Web Developers	8,790	13.4%	1 : 2	\$68,394
9	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	7,895	6.6%	1 : 17	\$58,906
10	Medical and Health Services Managers	7,796	16.0%	1 : 4	\$82,542
11	Computer Support Specialists	7,740	13.8%	1 : 6	\$42,408
12	First-Line Supervisors/Managers of Office and Administrative Support Workers	7,662	11.0%	1 : 13	\$48,399
13	Speech-Language Pathologists	7,352	18.5%	1 : 1	\$72,655
14	Sales Agents, Financial Services	6,041	9.3%	1 : 4	\$72,610
15	Office Clerks, General	5,970	11.9%	1 : 44	\$26,764

Note: All occupations in this table fall within the "Miscellaneous Industries Not Elsewhere Classified" industry group.

¹ Source: HWOL, Quarter 4, 2010; Green jobs total, N=131,248.

² Source: BLS; Projections from 2008 to 2018 are for parent, six-digit SOC. HWOL and O*NET now report occupations at the eight-digit SOC detail. As a result, those occupations listed in this table are at the more detailed, eight-digit SOC while the projection figures are for the parent six-digit SOC. Hence the projection is for a group of similar occupations and not the specific occupation listed in the table.

³ Source: IBRC using HWOL and BLS/OES data

⁴ Source: BLS. Mean wage calculated for tri-state using a weighted average.

will not be one-to-one with O*NET, but the general thrust of the O*NET method remains intact.

Table 3 shows how the 731 occupations were grouped among seven pathway clusters. Occupations were fairly evenly divided among these seven clusters, except for the particularly large production, construction and engineering "super cluster." This cluster was further subdivided into 1) engineering and applied technology, 2) construction and extraction, equipment operation, and repair, and 3) design and production.

Green occupations are fairly well distributed across clusters, with the exception of the health, social and personal services cluster. Any worker interested in making a transition to a green occupation would likely have several green target occupations within their cluster for which they have a relatively similar skill set and worker traits.

Space does not allow a complete detailed breakdown of the occupations in each pathway cluster and the dominant characteristics that bundled occupations into a cluster. The full report, available at www.drivingworkforcechange.org/reports/careerpathways.pdf, describes the clusters in greater detail.

drivingworkforcechange.org/reports/careerpathways.pdf, describes the clusters in greater detail.

Finding and Closing the Skills Gap

The pathway cluster analysis groups occupations based on the similarities and differences of over 500 job and worker characteristics. Thus, the Driving Change project has not only identified the displaced workers and the green and growing occupations of promise, but developed a resource that can identify occupations that are relatively similar to the original occupation of the displaced worker.

■ **TABLE 3: Summary of Career Pathway Clusters**

Cluster Name ⁵	Cluster ID	Number of Occupations	Number of Green ²
Information and Investigation	1	62	12
Health, Social and Personal Services	2	90	0
Production, Construction and Engineering	3	217	55
<i>Engineering and Applied Technology</i>	3a	75	26
<i>Construction and Extraction, Equipment Operation, and Repair</i>	3b	69	15
<i>Design and Production</i>	3c	73	14
Liberal Arts, Education and Human Relations	4	86	7
Business, Sales and Administration	5	105	15
Transportation and Public Services	6	97	20
Environmental Sciences and Food Service	7	74	15

⁵ Clusters are ordered based on their relative strength, or how “tight” the clusters are. Information and investigation was the strongest cluster. The environmental sciences and food service cluster, in contrast, had the weakest similarity scores. The number of occupations in a cluster does not speak to the cluster’s relative strength or importance.

² Based on the six-digit SOC definitions of the 2009 vintage of O’NET. The 2010 eight-digit O’NET/SOC definitions have considerably more jobs classified as green.

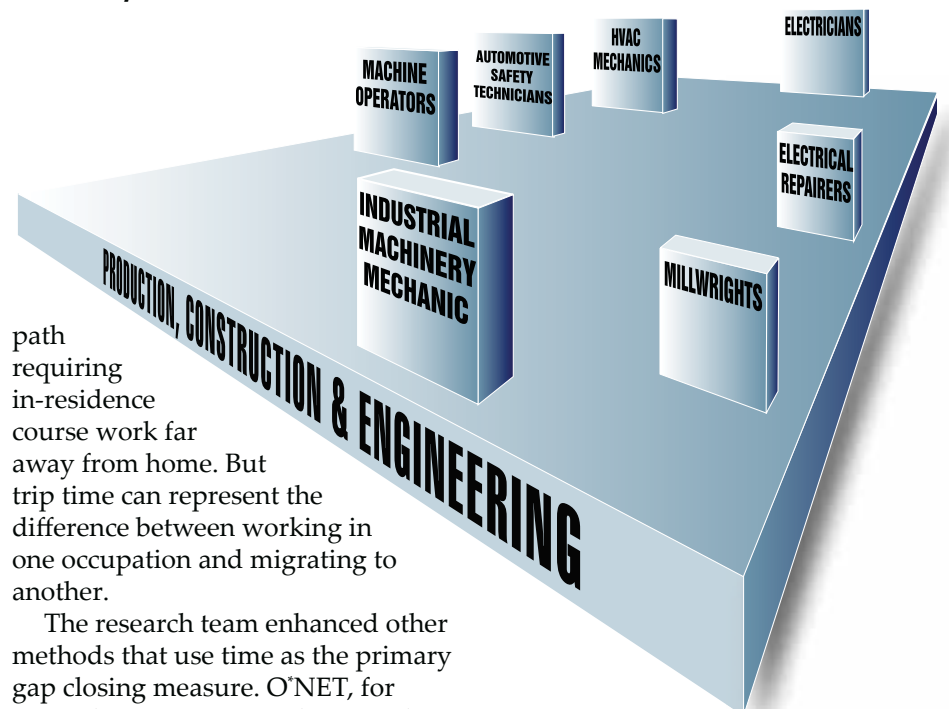
Source: Indiana Department of Workforce Development (IDWD) and the Indiana Business Research Center (IBRC)

Next, we address the questions of how long and how difficult the transition will be from an originating occupation to a destination occupation. Like the selected occupations from the production cluster presented in Figure 1, there is a distance between them. One cannot simply jump from one job to another. So what will it take to get from one occupation to another? The relative distance between occupations is the skills gap—the education, training or apprenticeship time required to transition from one occupation to another.

The time to transition—the “trip-time method”—is “a first” because it compresses all the differences between occupations into a common numéraire, namely the preparation or retraining time it would take to change jobs. The skills gap is primarily a knowledge or human capital gap. Closing the knowledge gap can take months or years in the classroom earning credits and degrees, just as closing many types of skills gaps requires many months or even years as an apprentice. The trip-time method measures the distance of a skills gap and the relative ease of moving from one occupation to another.

In short, time is the dimension for measuring a skills gap: how long the journey is to move from occupation A to occupation B. There are many other considerations, of course. A path that means paying large sums for tuition would not be feasible for many. Many would rule out a

■ **FIGURE 1: Selected Occupations in the Same Cluster as an Industrial Machinery Mechanic**



path requiring in-residence course work far away from home. But trip time can represent the difference between working in one occupation and migrating to another.

The research team enhanced other methods that use time as the primary gap closing measure. O’NET, for example, surveys incumbent workers

to determine, among many things, the level of proficiency necessary for a wide range of worker and job characteristics and the educational and training time it would take for an individual to become proficient at a particular job. To the extent possible, the estimated hours required for education and training were made consistent across different formats—academic, vocational or apprenticeships. This was no easy task and, as a result, trip times should not be taken literally but rather as a measure of comparison between different career transitions.

The research team estimated the longest sequence of courses or training required to fulfill the most important knowledge or skills requirement for an occupation. This sequence is the dominant skills gap. Trip time, then, is the skills gap measured in hours of preparation. If the pathway clusters are how occupations are grouped in two dimensions, then Figure 2 shows

Source: Indiana Business Research Center

how trip time, or preparation time, is measured in the third dimension.

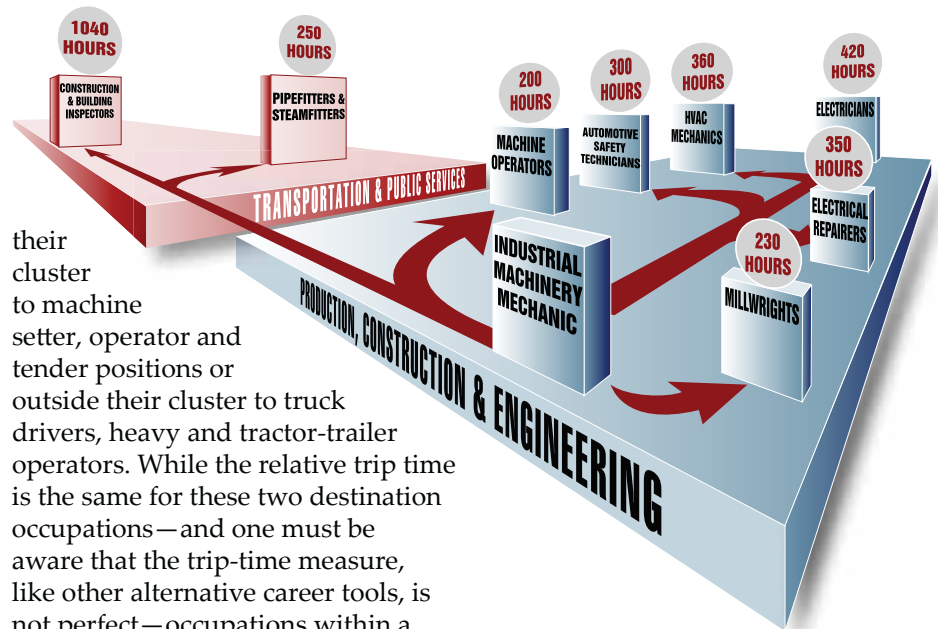
The pathway cluster method used to group occupations might suggest that all within-cluster trip times would be less than trip times between clusters, but this is not always true. Occupations were grouped into pathway clusters according to many criteria including personal traits of the worker (such as highly social) and work activities (such as handling heavy objects), not just knowledge and skill levels. As a rule, however, it is easier to move within clusters.

Research into Practice

Several displaced autoworker occupations can serve as examples to show that each occupation has several options and that each one has an expected amount of time to make the occupation transition. Table 4 provides two transition options for selected automotive occupations, one within the originating cluster and one outside. These examples also have relatively short trip times, which some workers may prefer in order to adopt new career opportunities as quickly as possible. Moreover, transitions within the same pathway cluster allow workers to move to an occupation that is much more similar to their previous occupation in terms of worker requirements, worker traits and job requirements.

Production helpers can make relatively fast transitions both within

■ FIGURE 2: Trip Times to Transition from an Industrial Machinery Mechanic to Selected Occupations



Source: Indiana Business Research Center

their cluster to machine setter, operator and tender positions or outside their cluster to truck drivers, heavy and tractor-trailer operators. While the relative trip time is the same for these two destination occupations—and one must be aware that the trip-time measure, like other alternative career tools, is not perfect—occupations within a cluster share many similarities. The dislocated worker would probably feel more comfortable, and perform better, in an occupation in his or her cluster.

Limiting transitions from auto sector occupations to only green occupations greatly reduces a displaced worker's options. In the tri-state region, non-green jobs comprised almost 82 percent of all fall 2010 HWOL postings. Table 5 presents a sampling of non-green career transition alternatives for team assemblers and production helpers with relatively short trip times.

Closing the Gap

One of the Driving Change project goals was to develop a resource to help displaced workers plot a path, in some cases a green path, to a new future. Workers considering a transition to a new occupation would also benefit from knowing their retraining and education options. As a result, the Driving Change website also provides a web-based resource to look up educational, training and vocational programs for green and growing occupations. Based on their targeted occupation, users can find

■ TABLE 4: Sample Career Transitions from Automotive Occupations to In-Demand Green Occupations with Above Average Wages

Auto Sector Occupation		Destination Occupation		
Occupation	Pathway Cluster ID	Occupation	Pathway Cluster ID	Trip Time (Hours)
Helpers—Production Workers	3a	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	3b	370
		Truck Drivers, Heavy and Tractor-Trailer	6	370
First-Line Supervisors/Managers of Production and Operating Workers	5	First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers	5	360
		Computer-Controlled Machine Tool Operators, Metal and Plastic	3a	310

Source: IDWD and IBRC

■ **TABLE 5: Sample Career Transitions from Automotive Occupations to In-Demand Non-Green Occupations with Above Average Wages**

Auto Sector Occupation		Destination Occupation		
Occupation	Pathway Cluster ID	Occupation	Pathway Cluster ID	Trip Time (Hours)
Team Assemblers	3c	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	3c	130
		Pipelayers	3b	170
		Coin, Vending, and Amusement Machine Servicers and Repairers	6	310
Helpers—Production Workers	3a	Excavating and Loading Machine and Dragline Operators	3b	200
		Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	3c	205
		Coin, Vending, and Amusement Machine Servicers and Repairers	6	330

Source: IDWD and IBRC

all the relevant postsecondary schools offering programs for that occupation within their selected geographic boundary.

Education and workforce development policymakers may also find these resources of use because the data present the relative concentration or scarcity of educational programs at a highly granular geographic level. For economic development practitioners who may be trying to cultivate the growth of firms or attract new investment, it may expose a region’s training weak spots. If a region does not have a specially trained workforce, what educational programs are nearby to fill the gap?

These resources, tools and analysis are online and free of charge at www.drivingworkforcechange.org, helping today’s displaced workers in the tri-state region find suitable employment, but also serving as a foundation for expanding the workforce development toolkit in the future. ■

Notes

1. The Driving Change study has been a collaborative effort of workforce development agencies of Indiana, Michigan and Ohio and their strategic partners. This project was supported by a grant from the Employment and Training Administration of the U.S. Department of Labor. The career pathway and trip-time research was conducted by the Indiana Business Research Center at Indiana University’s Kelley School of Business and the Research and Analysis division of the Indiana Department of Workforce Development. All Driving Change research findings, reports and resources are available at: www.drivingworkforcechange.org.
2. The complete report on Indiana Green Jobs can be found at: www.drivingworkforcechange.org/greenjobs.asp.
3. The classification of green jobs relies upon the official slate of 202 green occupations from O’NET. Out of 1,110 occupations in the 2010 vintage of the standard occupational code, 202 are defined as green by O’NET. See Erich C. Dierdorff, Jennifer J. Norton, Donald W. Drewes, Christina M. Kroustalis, David Rivkin, and Phil Lewis, “Greening of the World of Work: Implications for O’NET-SOC and New and Emerging Occupations,” February 2009, www.onetcenter.org/reports/Green.html.
4. For example, if HWOL reports an occupation in Indiana had 25 postings and the total number of workers in that occupation is 100, the postings-to-employment ratio is 1:4. Thus, the number of postings for

marketing managers is a large proportion of all marketing managers working in the state in 2009. The authors acknowledge that a HWOL posting may reflect a true job opening, may be the result of a human resource department wanting to build their resume pool or otherwise not represent a true job opening. Thus, the posting-to-employment ratio is a relative measure of a job-seeker’s competition.

5. The regional lists can be accessed at <https://netsolutions.dwd.in.gov/hh50/RegionalDownloads.aspx>.
6. This operating principle is similar to the TORQ system, which is a powerful tool that provides a compatibility score for comparing one occupation with another (<http://www.torqworks.com/products>). The TORQ system pulls in every detailed aspect that define the knowledge, skills and abilities (KSAs) of an occupation to determine whether two occupations are a good match. However, the pathway cluster approach uses all occupation description categories of O’NET (of which KSAs are a subset).

Migration Trends and Population Change Between the Censuses

Matt Kinghorn: Demographer, Indiana Business Research Center, Kelley School of Business, Indiana University

Data from the 2010 Census show that Indiana added more than 400,000 residents in the last 10 years to reach a total population of 6.48 million. Indiana’s 6.6 percent growth rate far outpaced neighboring Illinois, Michigan and Ohio. Furthermore, 63 of Indiana’s 92 counties posted a population increase over the same period.

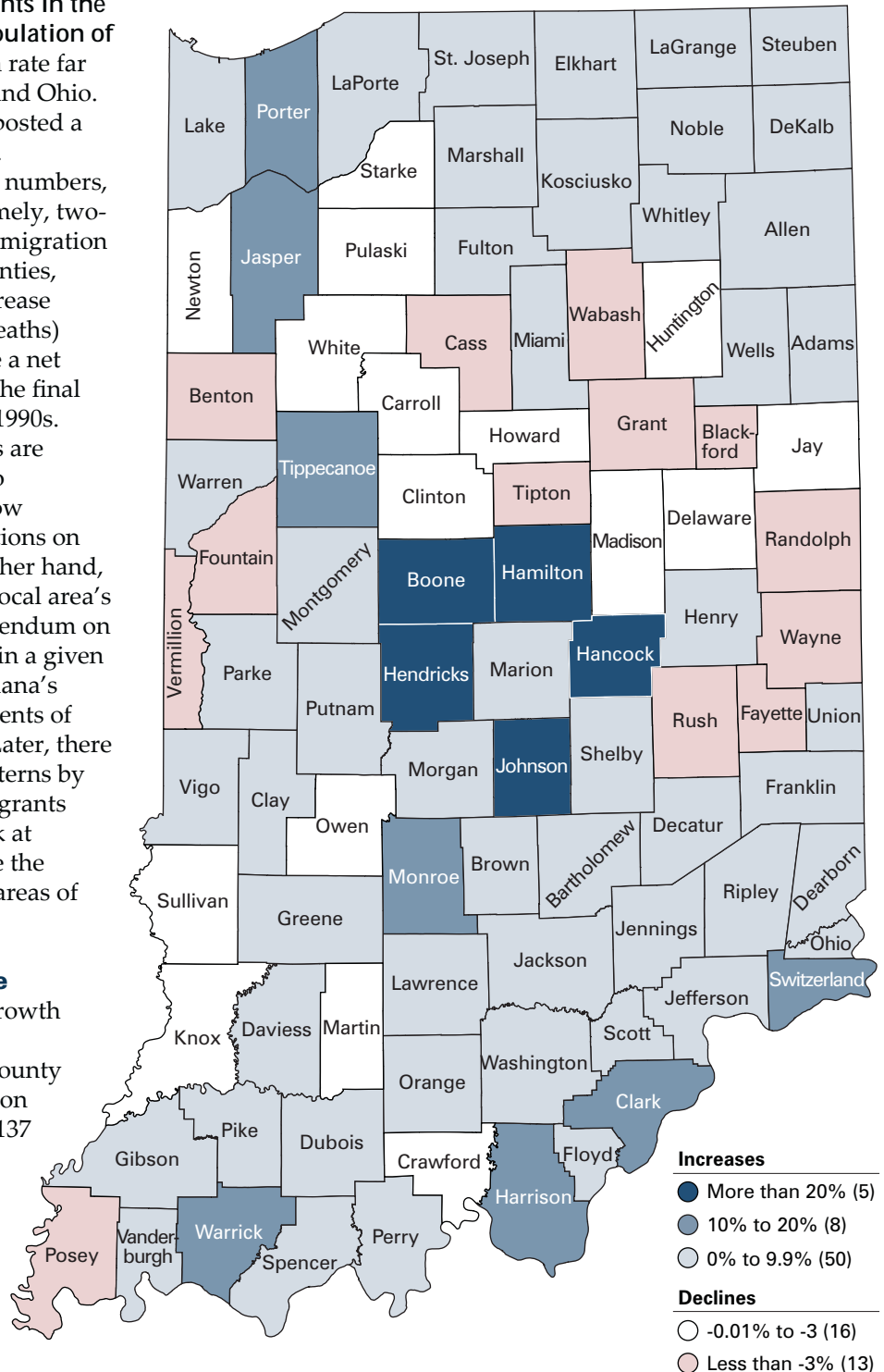
On the face of it, these are encouraging numbers, yet they mask some troubling trends. Namely, two-thirds of Indiana’s counties had a net out-migration of residents over the decade. In many counties, these losses were offset by the natural increase of the population (i.e., more births than deaths) but not in all. Statewide, Indiana did have a net in-migration of residents last decade but the final tally was well below the level during the 1990s.

While data on total population changes are important for a variety of reasons, they do not always provide a clean indicator of how populations respond to the current conditions on the ground. Migration numbers, on the other hand, offer a more representative measure of a local area’s vitality. These numbers are akin to a referendum on the economic or quality of life conditions in a given community. This article will examine Indiana’s population shifts by the different components of change, with an emphasis on migration. Later, there will be a focus on Indiana’s migration patterns by age and the geographic distribution of migrants to and from the state. Finally, we will look at trends in a handful of counties to examine the primary drivers of migration in different areas of the state.

Population Change across the State

Any discussion of Indiana’s population growth over the past decade must start with the Indianapolis-Carmel metro area. The 10-county region¹ fueled much of Indiana’s population growth over the past decade, adding 231,137 people—a 15.2 percent increase. This region accounted for 57 percent of the state’s total growth. This rapid growth means that the state’s population is becoming increasingly concentrated in central Indiana. The 10-county metro area’s share of the state population increased from 25.1 percent in 2000 to 27.1 percent in 2010.

FIGURE 1: Indiana Population Change by County, 2000 to 2010



Source: IBRC, using U.S. Census Bureau data

Indiana's other large metropolitan statistical areas—Gary, Fort Wayne, Evansville and South Bend— also grew but only Fort Wayne outpaced the state's mark of 6.6 percent growth over the decade.

Meanwhile, many of the mid-sized communities that long formed much of Indiana's industrial backbone saw significant population decline. This is particularly the case through a swath of north-central and east-central Indiana where metropolitan and micropolitan areas such as Logansport (-4.8 percent), Wabash (-5.9 percent), Kokomo (-2.8 percent), Marion (-4.6 percent), Anderson (-1.3 percent), Muncie (-0.9 percent), Richmond (-3.1 percent) and Connersville (-5.1 percent) lost population.

In all, 63 Indiana counties added residents over the last decade while 29 lost population (see **Figure 1**). Blackford County (-9.1 percent), Benton County (-6.0 percent) and Wabash County (-5.9 percent) had the sharpest declines of all Indiana counties. The 29 counties with shrinking populations combined to lose 27,947 residents over this period.

Meanwhile, the state's five fastest-growing counties all bordered Marion County. These ring counties were led by Hamilton and Hendricks, which grew by 50 percent (91,829 residents) and 40 percent (41,355), respectively.

Indiana's largest counties are growing, too. Marion County added 42,939 residents to reach a total population of 903,393—a 5 percent increase. In Northwest Indiana, Lake County is up 2.4 percent to 496,005 residents, while neighboring Porter County grew by 12 percent to reach 164,343. Allen County grew by 7.1 percent to climb to 355,329 residents.

While industrial decline may have led to population loss in many parts of the state, two metro areas that are heavily focused on manufacturing saw strong growth. Elkhart County, despite being hit hard by both

“Many of the mid-sized communities that long formed much of Indiana's industrial backbone saw significant population decline.”

recessions in this decade, posted an 8.1 percent population growth, while Bartholomew County grew by 7.5 percent.

Components of Indiana's Population Change

Populations grow or contract through natural increase (the difference between the number of births and deaths) and migration. Over the last decade, Indiana had roughly 320,000 more births than deaths, which accounted for 80 percent of the state's total population growth. All but five Indiana counties (Vermillion, Henry, Sullivan, Brown and Wabash) registered a positive natural increase over the last decade.

Net in-migration as a source of population growth was not nearly as widespread. Only 30 of Indiana's 92 counties added population, on net, through migration over the last decade.² Recall that 63 counties notched population gains over this period, which means that the natural increase in 33 counties was large enough to offset a net out-migration of residents.

As with population growth in general, suburban counties in the Indianapolis metro area had the greatest levels of net in-migration (see **Figure 2**). Hamilton County had the state's largest positive net migration at roughly 65,000 residents over the decade. This figure was twice as great as second-place Hendricks County, which had a net in-migration of 32,000 residents. Hamilton and Hendricks counties' migration

numbers equate to a migration rate per 100 residents of 35.7 and 31.0, respectively. Rounding out the state's five highest migration rates were the fellow Indianapolis metro communities of Hancock County (19.5 per 100 residents), Boone County (17.2) and Johnson County (14.7).

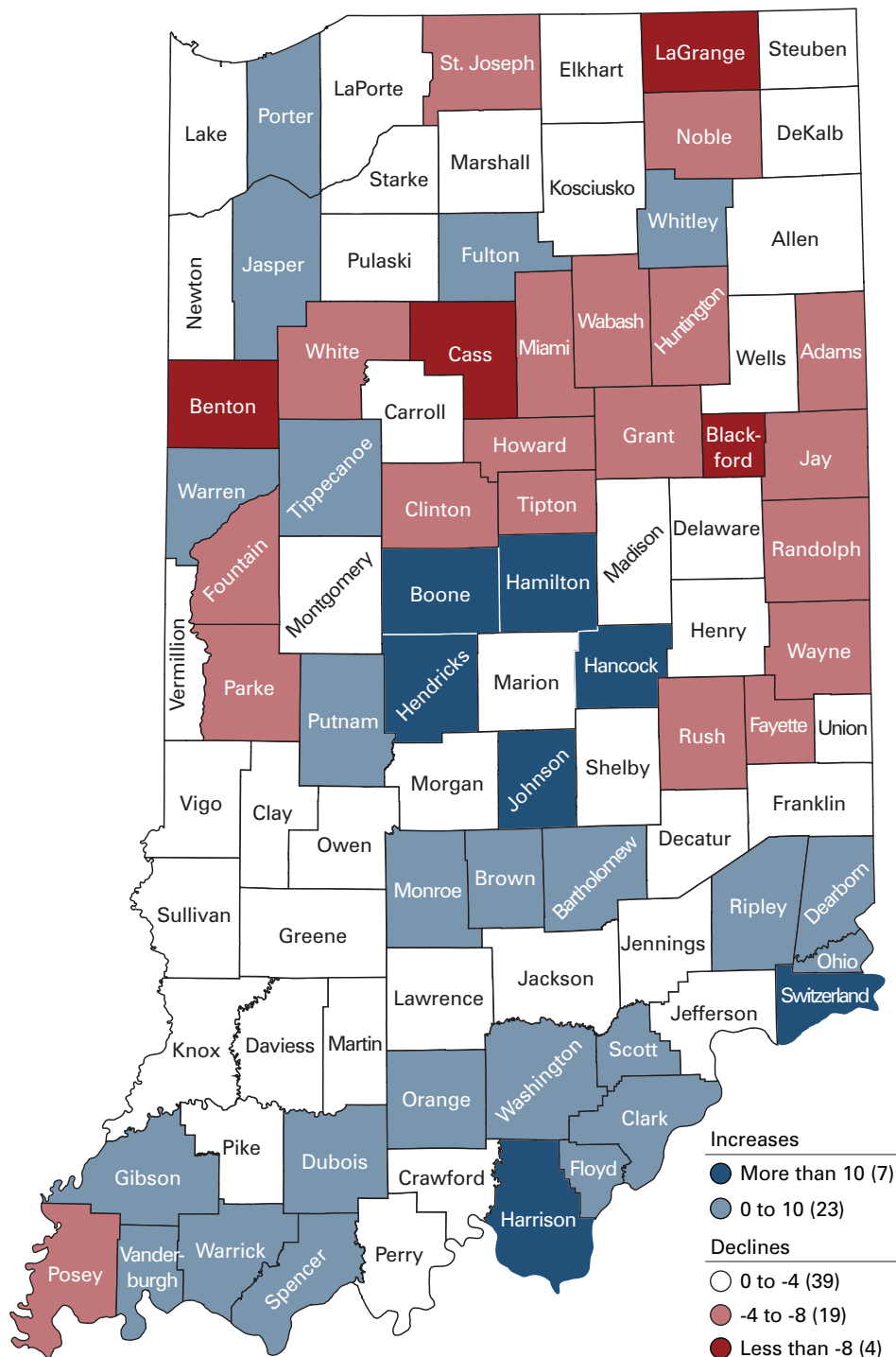
Suburban counties elsewhere in the state also showed high rates of in-migration. Harrison (10.5) and Clark (9.9) counties in the Louisville metro area had high rates of net in-migration as did Warrick County (10.0) in the Evansville area and Porter County (7.3) in Northwest Indiana. In the southeast corner of the state, rural Switzerland County (14.5) and Ohio County (6.6) also had high marks.

Net out-migration over the last decade, however, was widespread in the northern half of the state. In fact, excluding counties in the Indianapolis metro area, only six of the 46 Indiana counties north of Interstate 70 (or intersected by it) had net in-migration over the last 10 years. Blackford, Benton, Cass and LaGrange counties each had net out-migration rates above 8 residents per 100.

Marion County had the largest absolute net outflow of population over the decade at roughly 30,500 residents followed by St. Joseph County (-13,000) and Lake County (-10,900).

On whole, Indiana posted a net in-migration of 80,000 residents between 2000 and 2010. This

■ FIGURE 2: Net Migration Rates per 100 Residents by County, 2000 to 2010



Source: Indiana Business Research Center

marks the second consecutive decade that migration has made a positive contribution to the state’s population growth. Indiana had a net in-migration of more than 200,000 residents during the 1990s, according to data from Moody’s Economy.com.

Behind the Numbers

These migration figures raise a lot of questions. Who is moving? Where are they going to or coming from and why? A look at migration rates by age helps to answer the “who” question. As Figure 3 shows, the state had high rates of net in-migration in the 5-to-19 and the 35-to-44 age groups, suggesting that Indiana was an attractive destination for younger families in the last decade. A strong net inflow of college students also helped to boost the migration rates for the 15-to-24 age group. According to the National Center for Education Statistics, Indiana regularly ranks among the top states for net migration of college freshman. Indiana ranked eighth in this measure in 2008 with a net inflow of more than 8,000 students.

On the other side of the coin, Indiana lost large numbers of young adults over the last decade. On net, members of the 25-to-29 age group left the state over the decade at a rate of nearly seven residents per 100. The net outflow in the 30-to-34 age group was also strong.

The rate of net migration tapers off with age. Indiana remained a net in-migration state for the population between the ages of 45 and 64, but at ever-lower rates with each successive age group. There was a slight net outflow of residents in the 65 to 74 age groups yet the state returned to net in-migration for the 75 and older population.

Data from the Internal Revenue Service on the movement of income taxpayers shows that roughly 19 percent of in-migrants to the state in recent years came from Illinois (see Figure 4). This mark was more than

two-times greater than for any other state. In all, 44 percent of migrants to Indiana came from Illinois, Ohio, Kentucky or Michigan. As for broad geographic regions, 43 percent of the state's in-migrants came from the Midwest compared to 35 percent from the South, 12 percent from the West and 6 percent from the Northeast.³

Illinois was also the largest recipient of migrants from Indiana between 2001 and 2008, but the south was the top destination region. With 10 percent of Indiana migrants headed to the Sunshine State, Florida was the second-largest destination of Indiana migrants. All other Southern states combined to claim another 33 percent of Indiana out-migrants to bring the South's total to 43 percent. Another 35 percent of Indiana migrants stayed in the Midwest.

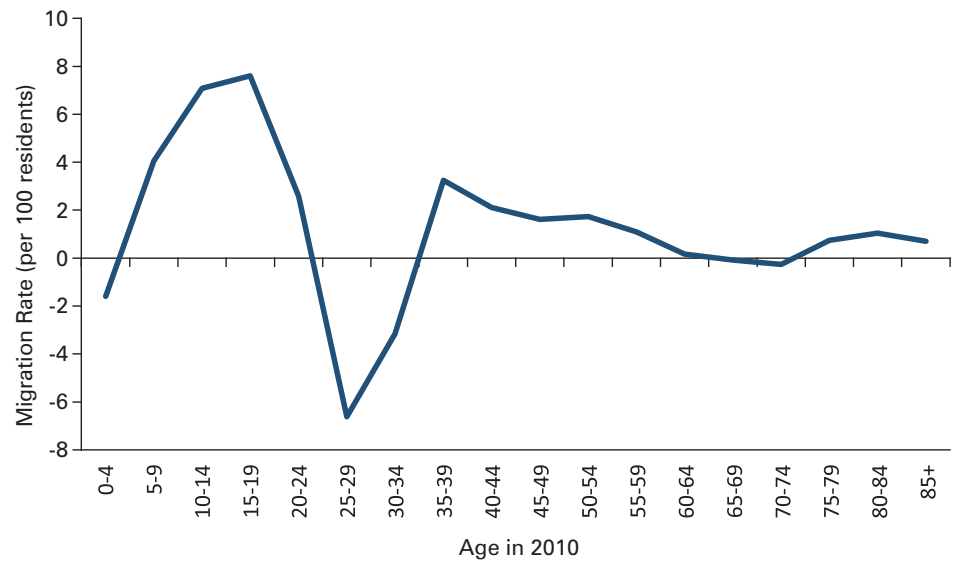
Pinpointing why people move—or why migration patterns change—is trickier. Migration is a volatile process that is triggered by a variety of factors. Housing and lifestyle decisions tend to be the dominant drivers of migration trends in many regions while others are affected more by employment-related considerations. A look at migration patterns in a few local areas helps to illustrate these different factors.

Indiana's Large Metro Areas

According to the latest Current Population Survey from the Census Bureau, more than 70 percent of people that make short-distance moves (i.e., less than 50 miles) across county lines in the U.S. do so for either housing or family-related reasons. These factors certainly drive migration trends within Indiana's largest metro areas.

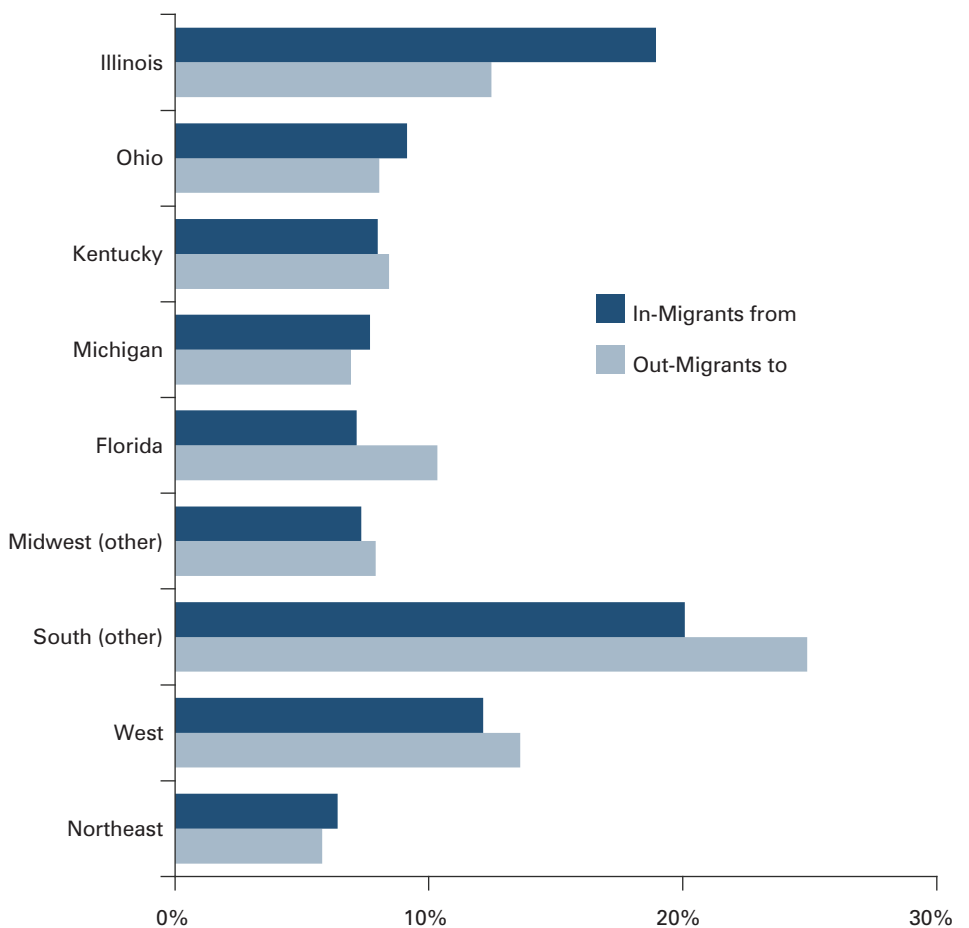
As seen earlier, Marion County had the state's largest net out-migration in the last decade and Lake County had the third-largest net outflow. Figure 5 presents the migration patterns by age for these two. Marion County is a popular

■ FIGURE 3: Indiana Net Migration Rates by Age, 2000 to 2010



Source: Indiana Business Research Center

■ FIGURE 4: Migration to and from Indiana by Region, 2001 to 2008



Note: Data are unavailable for 2004
Source: IBRC, using Internal Revenue Service data

destination for young adults, yet families leave the county in large numbers too. Marion County also had a consistent net outflow of older adults and retirement age residents.

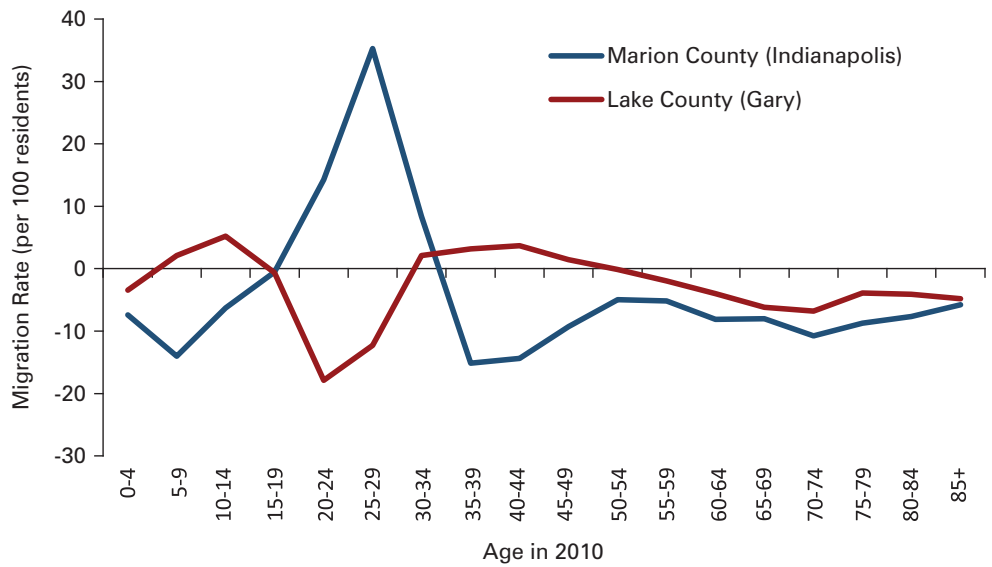
Lake County is unique in that it has the migration characteristics of both an urban core county and suburban community. Like many suburban areas, the county had a net inflow of families last decade. However, these gains were overwhelmed by the large loss of young adults and a steady outflow of residents over the age of 50.

As Figure 6 and Figure 7 show, neighboring counties were the largest recipients of migrants from these urban areas. Between 2001 and 2008, more than half of all migrants from Marion County settled elsewhere in the greater Indianapolis-Carmel metro area, according to the IRS data. Another 15 percent moved somewhere else in the state. Interestingly, migrants from Marion County were twice as likely to move to the South (16 percent of total migrants) than another Midwestern state (8 percent).

Migrants from Chicago are most likely responsible for the influx of families to Lake County. The Illinois portion of the Chicago MSA contributed more than half of all migrants to Lake County between 2001 and 2008. Another 13 percent of migrants to Lake County came from the Indiana portion of the Chicago metro (i.e., Jasper, Newton and Porter counties). As for migrants leaving Lake County, 24 percent moved within the Indiana part of the Chicago MSA while 23 percent crossed the state line but stayed in the greater metro area. Another 17 percent of Lake County migrants headed to the South and 10 percent relocated elsewhere in the Midwest.

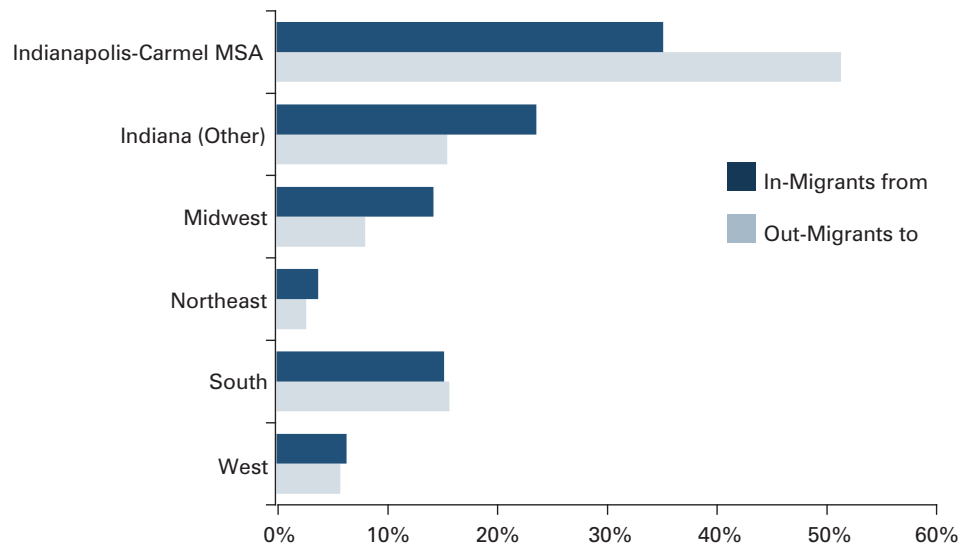
Figure 8 provides a few examples of how the outflow from large urban areas impact Indiana's high in-migration counties. Hendricks County—like other central-Indiana

■ FIGURE 5: Marion County and Lake County Net Migration Rates by Age, 2000 to 2010



Source: Indiana Business Research Center

■ FIGURE 6: Migration to and from Marion County by Region, 2001 to 2008



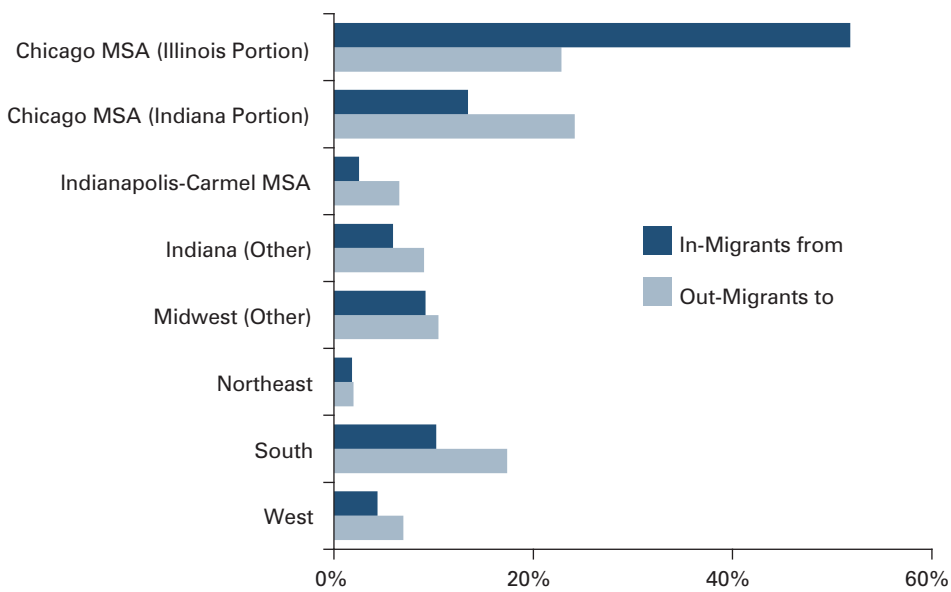
Note: Data are unavailable for 2004
Source: IBRC, using Internal Revenue Service data

suburban communities—saw a major influx of children and residents in the 30-to-44 age group. Hendricks County also had a consistently strong in-migration of residents age 45 and older. The migration signatures for Porter and Harrison County are similar, although not as dramatic. More than half of the migrants to these counties between 2001 and 2008

came from another county in their respective metro areas.

Given these urban to suburban flows, it should be no surprise that Indiana's total net migration figures receive a big boost from the three large metro areas on its border. Between 2001 and 2008, the IRS data show that the number of Indiana in-migrants from the Illinois portion of the Chicago MSA outnumbered

■ **FIGURE 7: Migration to and from Lake County by Region, 2001 to 2008**



Note: Data are unavailable for 2004
Source: IBRC, using Internal Revenue Service data

the state’s total migration to this area by a ratio of nearly 2-to-1. Indiana also had a lopsided migration exchange with the Louisville and Cincinnati metro areas. All told, the seven years of IRS data show a net inflow of 52,000 residents to the state from these areas. Without this influx, Indiana would have had a much lower-level net in-migration last decade.

The Impact of Job Losses

Employment decisions also play an important role in migration patterns. The 2010 Current Population Survey indicates that 18 percent of short-distance moves are initiated by employment decisions. This figure is closer to 40 percent for long-distance moves of 200 miles or more.

Additionally, over the last two decades, shifts in Indiana employment change from year-to-year—whether positive or negative—have typically signaled a similar turn in the state’s annual net migration levels.⁴ Unfortunately, Indiana’s economy has struggled over the past decade. For instance, the state added more than 450,000 payroll jobs

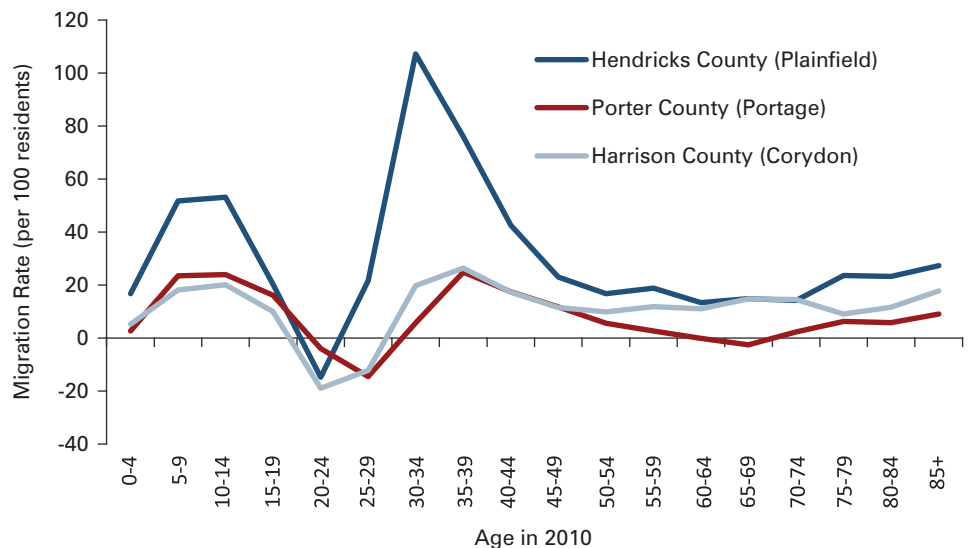
during the 1990s, with 54,000 of these new positions in manufacturing. By contrast, Indiana shed 225,000 jobs overall in the last decade and lost nearly 216,000 jobs in manufacturing alone. More than half of these manufacturing losses came before the most recent recession hit in late 2007.

This turnabout in the employment trend is likely one key reason why Indiana’s net in-migration mark last decade was far lower than during the 1990s.

These job losses have hit many areas of northern and east-central Indiana particularly hard. As a result, these regions are home to many of the Indiana counties with net out-migration and population decline over the decade. Although many other communities have had a similar experience, we will look at two counties—Howard and Wayne—to get a sense of the typical migration trends in these areas. Like 32 other counties around the state, these two counties saw their manufacturing employment slide by more than 40 percent over the last decade. Additionally, they both lost population and had a net outflow of residents.

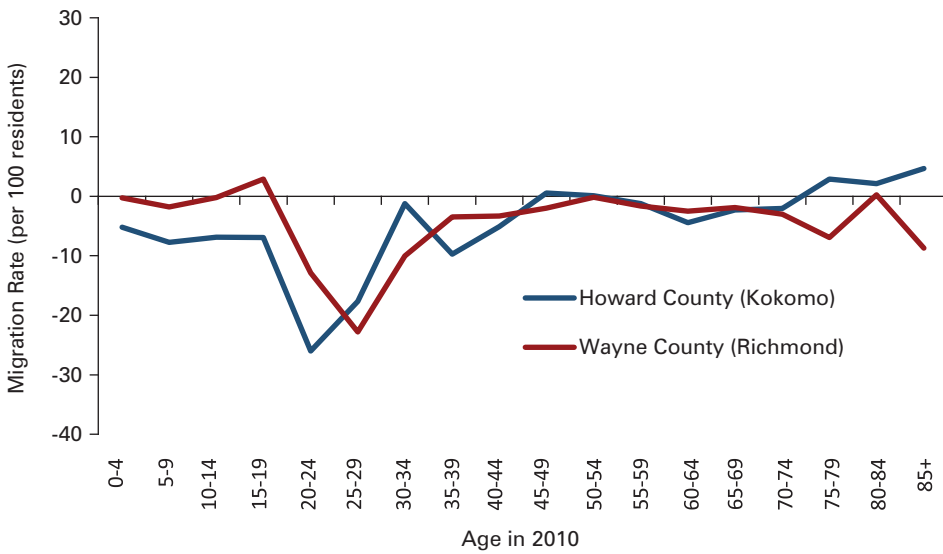
As Figure 9 shows, both Howard and Wayne had a net out-migration of residents at nearly every age group, with particularly sharp outflows between the ages of 20 to 29. The most likely destination for migrants leaving Howard County in

■ **FIGURE 8: Net Migration Rates by Age for Select High-Growth Suburban Counties, 2000 to 2010**



Source: Indiana Business Research Center

FIGURE 9: Net Migration Rates by Age for Select Out-Migration Counties, 2000 to 2010



Source: Indiana Business Research Center

recent years was Miami County (its neighbor to the north) followed by Hamilton and Marion counties in the Indianapolis metro area. In all, more than 60 percent of Howard County’s out-migrants stayed in Indiana (see Figure 10).

Marion County was the most common destination for migrants moving from Wayne County, followed by neighboring Randolph, Preble (Ohio), Fayette and Henry counties. These top five counties claimed a little more than 20 percent of Wayne County’s out-migrants between 2001 and 2008.

Conclusion

These differing migration trends will have important implications for the state if they continue. For instance, Indiana had the pleasant distinction of being one of only a handful of states in the Midwest or Northeast to see its population under the age of 17 increase between 2000 and 2010. However, all of this growth occurred in just 24 counties. Meanwhile, the child population declined by 5 percent or more in roughly half of Indiana counties. So, large areas of the Indiana are aging rapidly due, in part, to out-migration while families

are concentrating more and more in a few distinct regions of the state.

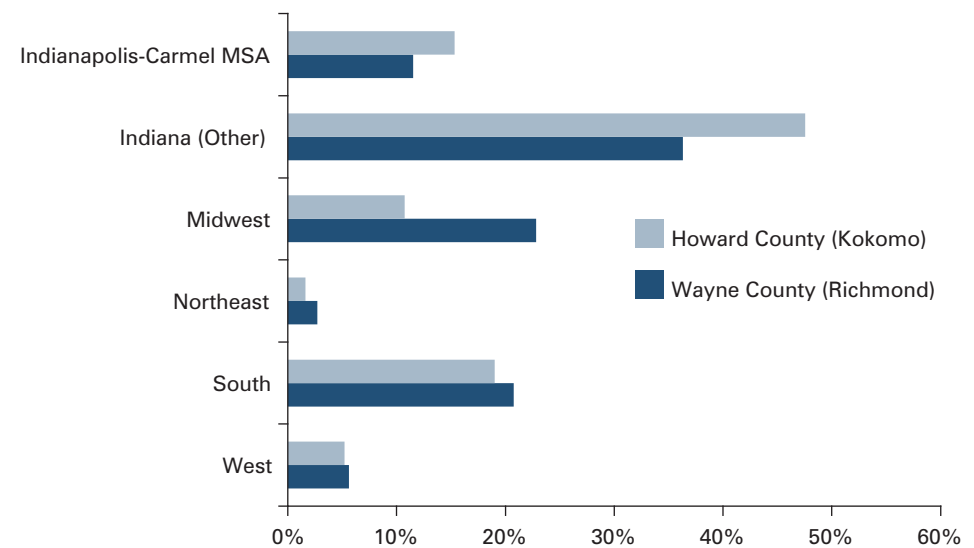
Just because this was the experience in the last decade, however, does not mean it has to continue into the next one. Some factors that drive population change can shift quickly. During the 1990s, for example, only 11 Indiana counties lost population and none lost more than 900 residents. In contrast, 29

counties saw their population decline in the last decade and 11 counties lost more than 1,000 residents. Looking back even further, Indiana experienced high levels of out-migration during the 1980s but the tide reversed sharply in the following decade. So while these trends can change, many parts of the state will likely need to see a turn in economic performance before they do.

About the Data

For this article, two different methods were used to estimate net migration. Total net migration estimates were calculated using a residual method. In this approach, net migration is the difference between the total natural increase in a given area between the 2000 and 2010 census and the total population change over the same period. If the population change exceeds the natural increase, for instance, then the difference is net in-migration. The natural increase estimates covering April 1, 2000 to June 30, 2009 come from the Census Bureau’s annual population estimates program. These estimates are based on birth and death data collected directly from the Indiana State

FIGURE 10: Destination of Migrants from Howard County and Wayne County, 2001 to 2008



Note: Data are unavailable for 2004
Source: IBRC, using Internal Revenue Service data

Department of Health (ISDH). IBRC analysts estimated natural increase for an additional nine months to cover the full census period.

Age-specific migration rate estimates were calculated using a survival rate method. Under this approach, age-specific 10-year survival rates are applied to the Census 2000 population counts to estimate an expected population for each age group in 2010. These expected population numbers approximate what the 2010 population would be in a given cohort if there was no migration over the 10-year period and deaths were the only source of population change. The difference between the expected population and the actual 2010 Census count becomes the net migration estimate. State and county-

specific life table survival rates were calculated using mortality data from ISDH and population figures from the Census Bureau.

Data on the destination of migrants comes from the Internal Revenue Service. These data are limited in that they cover only the migration of income tax filers and their dependents. To be counted as a migrant, a worker must file a return in two consecutive years and indicate a different resident county in each. This means the data can miss the movement of many college students or young workers, retirees, immigrants or workers that do not file returns. That said, this is some of the best data available for examining annual migration trends and the destination of movers. The data in this article cover each year between

2001 and 2008 with the exception of 2004, which is unavailable. ■

Notes

1. The Indianapolis-Carmel MSA includes Boone, Brown, Hamilton, Hancock, Hendricks, Johnson, Marion, Morgan, Putnam and Shelby counties.
2. For county-level migration estimates, the populations at state and federal adult correctional facilities were removed from total population numbers since these residents do not move voluntarily. This adjustment shifted Henry, Jefferson, Perry and Vigo counties from net in-migration to net out-migration counties.
3. The U.S. Census Bureau's regional definitions were used for this analysis. See a map of these Census regions at www.stats.indiana.edu/maptools/maps/boundary/census_regions_main.gif.
4. Matt Kinghorn, "Population and Employment Change in Indiana," *InContext*, July-August 2009, www.incontext.indiana.edu/2009/jul-aug/article1.asp.