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# Indiana Employee Tenure by Industry and Manufacturing Sub-Sector

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In which industries are current Indiana workers likely to have spent longer periods of their career? And how do the wages of higher tenured workers compare by industry or by loyalty to the same employer? This article seeks to understand some key issues about employee tenure through use of longitudinal administrative records from the newly created Indiana Workforce and Education Intelligence System (IWIS). After summarizing current trends in employee tenure research and introducing the IWIS database, this study will compare employee tenure and wages in Indiana's major industries with a focus on manufacturing.

Typical research on employee tenure makes use of the Current Population Survey (CPS)<sup>1</sup> to understand the demographic profiles of American workers with different lengths of employment with the same company. Recently, the U.S. Bureau of Labor Statistics found that half of American workers (above age 16) spent 4.1 years or more at the same employer and that older workers 55-64 years old had almost four times higher median tenure than workers aged 25 to 34—9.9 years compared to 2.7 years.<sup>2</sup> Further analyzing CPS data over the past 25 years, Craig Copeland at the Employee Benefit Research Institute (EBRI) finds that median tenure decreased for men from 5.9 years to 5.2 years while increasing for women from 4.2 to 4.9 years. Furthermore, the EBRI report shows that tenure in the private sector has remained steady with half of workers having less than 3.9 years of tenure but median tenure among public sector workers has actually increased from 6.0 years in 1983 to 7.0 years in 2008.<sup>3</sup>

## Applying IWIS to Employee Tenure Research

The Indiana Workforce and Education Intelligence System (IWIS) was created in response to the parallel needs and goals of a wide range of adult education and workforce initiatives. It is modeled after the nationally recognized Florida Education and Training Placement Information Program, a data collection and reporting system to provide follow-up data on former students, with comprehensive outcome information for Florida's education, workforce development and social services programs.<sup>4</sup>

While IWIS data can be applied to numerous research questions, this study will pay attention to the differences in tenure and wages of Indiana workers by the 20 major industries. Due to their prominent role in the Indiana economy, 21 key manufacturing sub-sectors will also be analyzed utilizing IWIS' employment data sourced by the Indiana Department of Workforce Development (DWD).

Here, we track a cohort of 2.8 million Indiana workers who were employed for at least one quarter between 2007 through 2008 and earned at least \$10,712 over this two-year time period.<sup>5</sup> For each of these eight quarters, the IWIS database provided the wages, employer and industry for every job in which the worker was employed within Indiana.<sup>6</sup> Similar wage records for this cohort were then obtained for each of the three preceding two-year periods— 2005-2006, 2003-2004 and 2001-2002—to capture the full scope of the IWIS database.<sup>7</sup> This study then grouped these wage records to create four levels of employee tenure depending on the number of two-year periods for which a worker was employed within the state. Unsurprisingly, records for all 2.8 million workers are only available in the most recent 2007-2008 time period since we expect that not all of these workers

were employed in previous years. Table 1 summarizes the time frames and available data for the 9 million wage records analyzed for this study.

**Table 1: IWIS Employee Tenure Study Data Available by Time Period**

Time Period	Records	Percent of 2007-2008 Cohort
2007-2008	2,811,071	100.0%
2005-2006	2,358,936	83.9%
2003-2004	2,026,893	72.1%
2001-2002	1,788,301	63.6%
Total	8,985,201	N/A

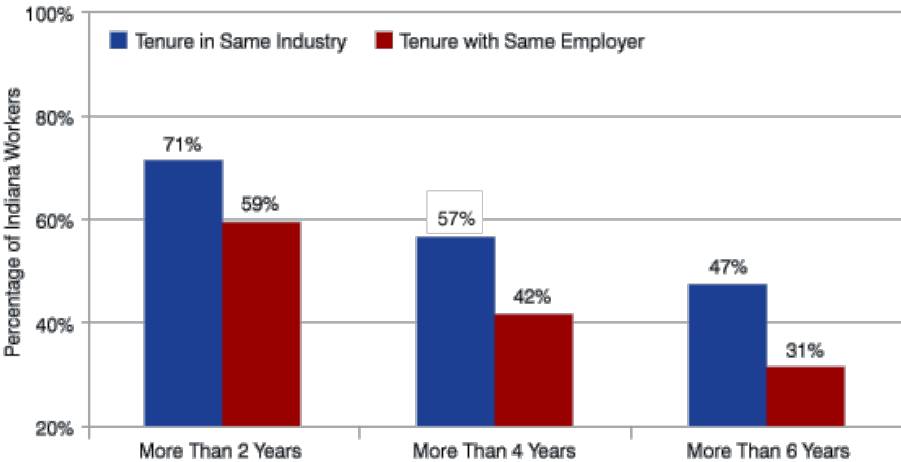
Source: IBRC, using data from the Indiana Workforce and Education Intelligence System (IWIS)

While many workers held two or more jobs simultaneously, the study determined a worker’s primary industry and employer within each time period as the industry (and employer within that industry) in which the worker earned the most income.<sup>8</sup> For example, if a worker from our 2007-2008 focal group earned the most income from a company in the manufacturing industry, manufacturing would be considered her primary industry and she would have, at minimum, between zero to two years of tenure in that industry. However, if manufacturing was also her primary industry in 2005-2006 but prior to that she worked in a different industry, then she would be coded as having between two and four years of tenure in manufacturing. The same logic would apply to her length of tenure at a particular employer.

### Comparing Tenure

Figure 1 summarizes the overall tenure figures for Indiana workers by industry and by the same employer within an industry. We see that less than half of Indiana employees in the 2007-2008 cohort had been in the same sector for more than six years (i.e., all four of the study periods). Even fewer—less than a third—of these workers had tenure with the same employer for more than six years.

**Figure 1: Employee Tenure by Industry and by Employer for 2007-2008 Cohort**



Source: IBRC, using data from the Indiana Workforce and Education Intelligence System (IWIS)

Table 2 reveals that utilities and manufacturing had more than 60 percent of their 2007-08 workforce with more than six years of tenure. For manufacturing this is not surprising given that it is generally a shrinking industry and the employees who have been employed the longest are typically the last to be laid off. At the other end of the spectrum, two industries did not have 60 percent of their workers with even two years of tenure, suggesting high levels of turnover linked to these industries. Among these low-tenure industries is the broadly defined administrative and support, waste management and remediation services industry, which includes labor leasing and temporary employment services.

Table 2: Tenure by Industry, 2007-2008 Cohort

Industry	Number of Employees	Percent by Tenure			
		2 Years or Less	More than 2 Years	More than 4 Years	More than 6 Years
Overall	2,811,071	28.6%	71.4%	56.6%	47.4%
Utilities	18,143	14.9%	85.1%	74.1%	65.6%
Manufacturing	619,137	17.5%	82.5%	70.4%	62.6%
Public Administration	108,020	20.1%	79.9%	68.5%	59.4%
Educational Services	239,016	19.3%	80.7%	68.0%	58.7%
Finance and Insurance	112,168	23.2%	76.8%	63.0%	53.7%
Health Care and Social Assistance	352,429	23.9%	76.1%	61.6%	51.2%
Mining	6,985	24.5%	75.5%	59.5%	50.3%
Information	47,253	29.5%	70.5%	56.6%	48.5%
Construction	179,252	30.1%	69.9%	55.5%	46.5%
Wholesale Trade	134,445	30.8%	69.2%	52.5%	42.5%
Retail Trade	292,455	34.2%	65.8%	49.5%	39.6%
Arts, Entertainment, and Recreation	34,480	35.6%	64.4%	47.9%	37.3%
Professional, Scientific, and Technical Services	102,129	35.9%	64.1%	45.9%	36.4%
Other Services (Except Public Administration)	69,443	37.2%	62.8%	45.4%	35.5%
Transportation and Warehousing	119,658	36.4%	63.6%	45.6%	34.7%
Agriculture, Forestry, Fishing, and Hunting	11,234	39.2%	60.8%	44.1%	34.7%
Real Estate and Rental and Leasing	35,574	37.7%	62.3%	43.6%	32.8%
Accommodation and Food Services	154,717	45.7%	54.3%	35.7%	25.8%
Administrative and Support, Waste Management and Remediation Services	150,519	54.4%	45.6%	27.3%	18.8%
Management of Companies and Enterprises	23,819	63.1%	36.9%	21.8%	17.2%

Note: Employment figures may not include workers at employers exempt from unemployment insurance requirements.

Source: IBRC, using data from the Indiana Workforce and Education Intelligence System (IWIS)

Even though people may stay within the same industry, how many are staying with the same employer? IWIS data reveal that just 31 percent of Indiana workers were with the same employer during all four study periods (see Table 3). This ranged from a high of 59 percent in the utilities industry, closely followed by education (54 percent) and public administration (52 percent). These three industries seem to be the most likely to have workers who stay with the same employer throughout their careers.

However, tenure with the same employer is substantially lower for Indiana workers in management of companies and enterprises, accommodation and food services, as well as the broad administrative and support, waste management and remediation services industry. For these industries, almost two-thirds of their employees have less than two years of tenure with the same employer.

Table 3: Tenure with Same Employer by Industry, 2007-2008 Cohort

Industry	Number of Employees	Percent by Tenure			
		2 Years or Less	More than 2 Years	More than 4 Years	More than 6 Years
Overall	2,811,071	40.6%	59.4%	41.7%	31.4%
Utilities	18,143	16.9%	83.1%	70.6%	59.2%
Educational Services	239,016	23.0%	77.0%	63.2%	53.6%

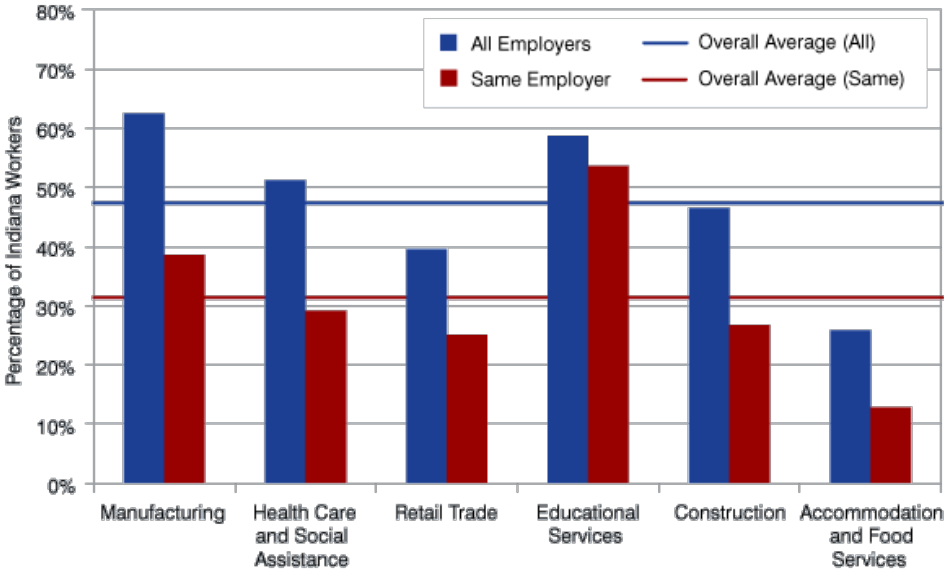
Public Administration	108,020	26.2%	73.8%	61.6%	52.4%
Mining	6,985	28.8%	71.2%	50.9%	41.1%
Manufacturing	619,137	31.6%	68.4%	50.4%	38.6%
Information	47,253	41.7%	58.3%	43.1%	31.5%
Wholesale Trade	134,445	38.1%	61.9%	42.5%	30.8%
Finance and Insurance	112,168	38.3%	61.7%	41.7%	30.7%
Agriculture, Forestry, Fishing, and Hunting	11,234	43.5%	56.5%	39.2%	29.5%
Health Care and Social Assistance	352,429	41.1%	58.9%	40.1%	29.2%
Arts, Entertainment, and Recreation	34,480	45.2%	54.8%	37.4%	27.8%
Other Services (Except Public Administration)	69,443	44.7%	55.3%	36.8%	26.8%
Construction	179,252	46.2%	53.8%	36.1%	26.7%
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Real Estate and Rental and Leasing	35,574	46.6%	53.4%	32.9%	23.2%
Transportation and Warehousing	119,658	46.9%	53.1%	32.7%	22.2%
Management of Companies and Enterprises	23,819	66.0%	34.0%	18.5%	13.6%
Accommodation and Food Services	154,717	61.7%	38.3%	20.2%	12.9%
Administrative & Support, Waste Management and Remediation Services	150,519	65.0%	35.0%	18.6%	10.9%

Note: Employment figures may not include workers at employers exempt from unemployment insurance requirements  
Source: IBRC, using data from the Indiana Workforce and Education Intelligence System (IWIS)

Figure 2 compares industry tenure and employer tenure for the six industries with the most employment by focusing on the proportion of employees with over six years of tenure. Here we see that even though employee tenure is highest overall in manufacturing (63 percent) the education industry stands out given its high levels of tenure not only among all employers (59 percent) but particularly tenure with the same employer (54 percent). This suggests that more educators may spend large amounts of their careers at the same school than factory workers at the same plant within the manufacturing industry.

Conversely, only a quarter of workers in accommodation and food service have more than six years of tenure in the industry and only 13 percent have worked with the same employer for this length of time making accommodation and food service easily the industry with the highest worker turnover.

**Figure 2: Comparing Percentage of Indiana Employees with More than Six Years of Tenure for Selected Industries, 2007-2008 Cohort**



Source: IBRC, using data from the Indiana Workforce and Education Intelligence System (IWIS)

## Comparing Tenure within Manufacturing

Looking within the manufacturing industry, Table 4 shows primary metal, chemical and electrical equipment manufacturing topping the list, with all three of these sub-sectors with over 60 percent of employees with more than six years of experience. At the other end of the spectrum, the three smallest sub-sectors in terms of employment (fewer than 2,000 employees each) also had the shortest tenures and notably almost half of leather and allied product manufacturing workers had two years of tenure or less.

**Table 4: Tenure by Manufacturing Sub-Sector, 2007-2008**

Industry	Number of Employees	Percent by Tenure			
		2 Years or Less	More than 2 Years	More than 4 Years	More than 6 Years
Manufacturing Sub-Sector Total*	619,137	23.2%	76.8%	61.9%	52.2%
Primary Metal	52,801	18.3%	81.7%	70.1%	63.6%
Chemical	36,179	16.2%	83.8%	73.5%	63.1%
Electrical Equipment, Appliance, and Component	13,565	19.2%	80.8%	67.8%	60.0%
Transportation Equipment	146,867	18.2%	81.8%	67.9%	56.7%
Nonmetallic Mineral Product	16,901	21.3%	78.7%	64.7%	55.7%
Machinery	49,614	23.0%	77.0%	61.9%	54.1%
Computer and Electronic Product	22,904	21.7%	78.3%	61.0%	53.0%
Printing and Related Support Activities	21,207	25.5%	74.5%	60.2%	51.9%
Paper	12,512	25.2%	74.8%	59.1%	50.6%
Miscellaneous	36,372	26.9%	73.1%	57.9%	48.6%
Plastics and Rubber Products	43,422	27.3%	72.7%	57.4%	47.0%
Beverage and Tobacco Product	5,002	27.6%	72.4%	56.4%	46.4%
Furniture and Related Product	27,773	23.5%	76.5%	58.7%	45.5%
Fabricated Metal Product	70,282	28.8%	71.2%	53.8%	44.3%
Petroleum and Coal Products	4,713	35.2%	64.8%	49.5%	41.3%
Wood Product	18,947	30.2%	69.8%	51.5%	41.0%
Textile Product Mills	3,523	30.2%	69.8%	50.3%	40.3%
Food	33,511	33.2%	66.8%	50.3%	40.2%
Textile Mills	831	36.7%	63.3%	46.2%	36.9%
Apparel	1,531	35.4%	64.6%	43.1%	30.8%
Leather and Allied Product	680	49.6%	50.4%	33.2%	27.4%

\*This row represents the percentage of workers in the manufacturing industry who have worked in the same manufacturing sub-sector for the given time period.  
Note: Employment figures represent available may not include workers at employers exempt from unemployment insurance requirements.  
Source: IBRC, using data from the Indiana Workforce and Education Intelligence System (IWIS)

While 38 percent of employees in the manufacturing sector had been with the same employer for six years or more, both chemical and nonmetallic mineral product manufacturing have more than half of their workforce with more than six years experience with the same employer (see Table 5). We see the lowest levels of tenure with the same employer in beverage and tobacco product manufacturing where almost two-thirds of workers have been with their current employer for two years or less.

**Table 5: Tenure with Same Employer by Manufacturing Sub-Sector, 2007-2008**

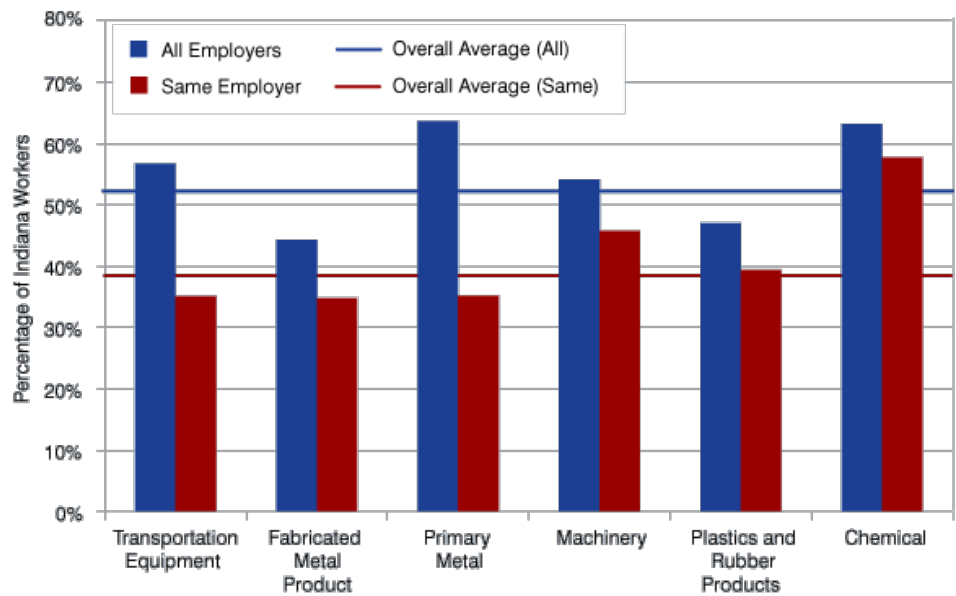
		Percent by Tenure			
		2			

Industry	Number of Employees	Years or Less	More than 2 Years	More than 4 Years	More than 6 Years
Manufacturing Sub-Sector Total*	619,137	31.6%	68.4%	50.3%	38.4%
Chemical	36,179	21.4%	78.6%	68.6%	57.7%
Nonmetallic Mineral Product	16,901	24.4%	75.6%	60.2%	51.1%
Electrical Equipment, Appliance, and Component	13,565	33.6%	66.4%	53.7%	47.1%
Computer and Electronic Product	22,904	24.5%	75.5%	55.9%	46.6%
Machinery	49,614	26.2%	73.8%	56.4%	45.8%
Printing and Related Support Activities	21,207	32.0%	68.0%	52.7%	42.8%
Petroleum and Coal Products	4,713	35.6%	64.4%	49.2%	40.0%
Plastics and Rubber Products	43,422	31.2%	68.8%	50.3%	39.4%
Textile Product Mills	3,523	32.3%	67.7%	48.2%	38.6%
Textile Mills	831	36.7%	63.3%	46.0%	36.5%
Primary Metal	52,801	23.3%	76.7%	55.9%	35.2%
Miscellaneous	36,372	39.0%	61.0%	46.2%	35.1%
Transportation Equipment	146,867	32.2%	67.8%	47.4%	35.1%
Fabricated Metal Product	70,282	36.2%	63.8%	45.0%	34.7%
Furniture and Related Product	27,773	31.3%	68.7%	49.4%	34.3%
Food	33,511	39.1%	60.9%	44.5%	32.1%
Wood Product	18,947	36.8%	63.2%	42.4%	32.0%
Paper	12,512	39.2%	60.8%	39.2%	31.0%
Leather and Allied Product	680	49.6%	50.4%	32.8%	26.6%
Apparel	1,531	48.7%	51.3%	33.2%	20.3%
Beverage and Tobacco Product	5,002	66.0%	34.0%	25.4%	19.4%

\*This row represents the percentage of workers in the manufacturing industry who have worked in the same manufacturing sub-sector for the given time period.  
Note: Employment figures may not include workers at employers exempt from unemployment insurance requirements.  
Source: IBRC, using data from the Indiana Workforce and Education Intelligence System (IWIS)

Figure 3 makes a side-by-side comparison of tenure within industry and tenure with the same employer for six manufacturing sub-sectors with high employment. We see that chemical manufacturing is the only sub-sector where more than 50 percent of workers exceeded six years of tenure overall and with the same-employer. Substantially lower levels of tenure with the same employer are noticed for all other sub-sectors particularly in primary metal manufacturing where only 35 percent of workers have more than six years of tenure with the same employer—even though this sub-sector has the highest overall tenure level at 64 percent.

**Figure 3: Comparing Percentage of Indiana Employees with More than Six Years of Tenure for Selected Manufacturing Sub-Sectors, 2007-2008**



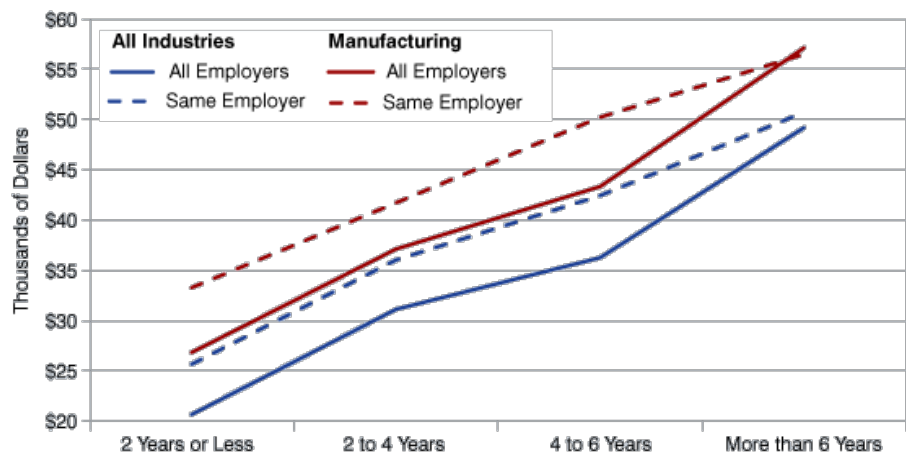
Source: IBRC, using data from the Indiana Workforce and Education Intelligence System (IWIS)

## The Tenure-Wage Relationship

Figure 4 confirms our expectations that employee wages increase with tenure across all industries including the manufacturing sub-sector. We see that while workers with two years of tenure or less earn annual wages of just over \$20,000 per year, workers with only slightly more tenure in their industry—between two and four years—earn \$31,000 per year, a 50 percent increase. Those exceeding six years of service to their industry earn even more—\$49,000. The same pattern is observed for the manufacturing sub-sector though these workers earn higher average wages on average—\$27,000 for those in the two years or less category and up to \$57,000 for those with more than six years of tenure.

However, while tenure with the same employer generally leads to even higher wages, this is true primarily at lower levels of tenure (six years of tenure or less). Beyond six years of tenure, we do not see substantial wage differences between tenure overall and tenure with the same employer.

**Figure 4: Average Annual Wages by Years of Tenure, All Industries Compared to Manufacturing, 2007-2008**



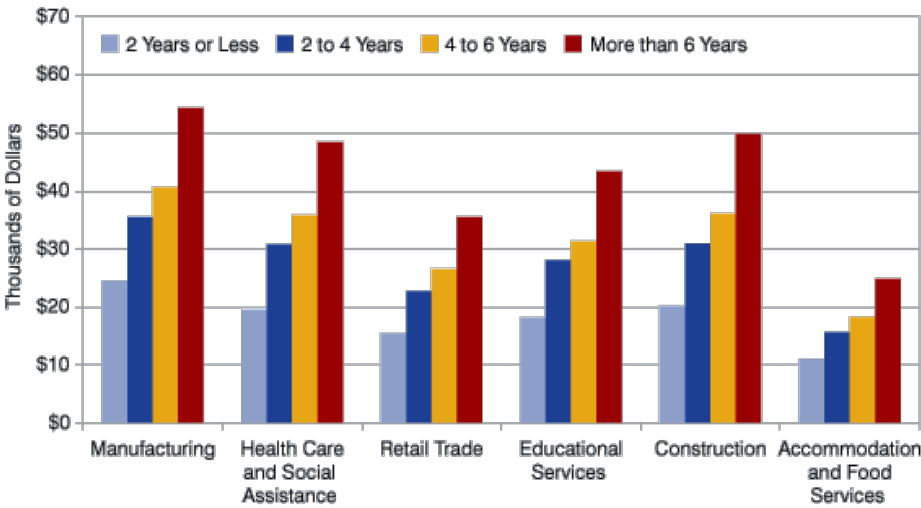
Source: IBRC, using data from the Indiana Workforce and Education Intelligence System (IWIS)

There is a positive wage-tenure relationship among all six of the “high-employment” industries summarized in Figure 5 though increases in wages with tenure were less pronounced in the low-wage accommodation and food service industry. Here, employees with over six years of tenure still only earned annual wages of \$25,000. While this amount may be more than double the earnings of accommodation and food service workers with tenure of two years or less, it is barely more than the



earnings of the least tenured manufacturing workers.

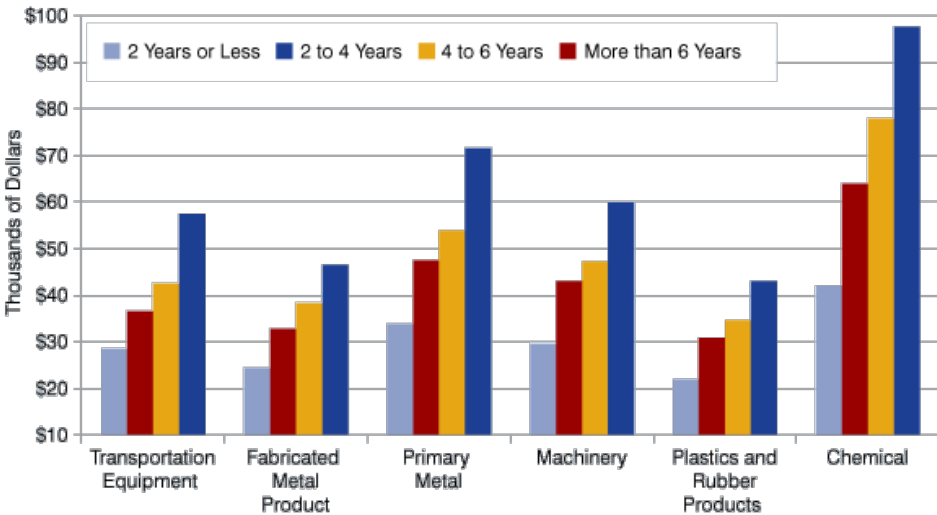
**Figure 5: Average Annual Wages by Years of Tenure for Selected Industries, 2007-2008**



Source: IBRC, using data from the Indiana Workforce and Education Intelligence System (IWIS)

Within manufacturing, the biggest returns to employee tenure are in the chemical manufacturing sub-sector (see Figure 6). Starting with high annual wages of \$42,000 for workers with two years of tenure or less, workers with more than six years of tenure earn \$97,000 per year—a 131 percent increase. The high wages within this manufacturing sub-sector may help explain why chemical manufacturing has one of the highest levels of employee tenure.

**Figure 6: Average Annual Wages by Years of Tenure for Selected Manufacturing Sectors, 2007-2008**



Source: IBRC, using data from the Indiana Workforce and Education Intelligence System (IWIS)

## Conclusion

This study allows us to understand important differences in employee tenure and gain insight on which industries have more stable employment and long-term income potential for transitional workers. Industries that have longer-tenured employees can have a variety of associated benefits such as a more experienced workforce and greater institutional memory for those whose tenure was at the same employer. There may also be higher costs since higher benefit payments may accompany the higher wages of long-term employees and there could be more resistance to changing technologies among tenured workers if they have not updated their training or engaged in lifelong learning opportunities.



Through IWIS, Indiana researchers expect to learn even more about our workforce as the database grows in breadth, through additional educational and demographic information from partner agencies, and depth, as more years of data are added.

Notes

- 1. The Current Population Survey (CPS) is a monthly survey of 60,000 households jointly administered by the U.S. Bureau of Labor Statistics and the U.S. Census Bureau. More information on labor market information collected by the CPS is available at: [www.bls.gov/cps/](http://www.bls.gov/cps/).
- 2. For more information, please read the Employee Tenure Summary “Employee Tenure in 2008” from the Bureau of Labor Statistics, available at [www.bls.gov/news.release/tenure.toc.htm](http://www.bls.gov/news.release/tenure.toc.htm).
- 3. This EBRI report is available at [www.ebri.org/pdf/notespdf/EBRI\\_Notes\\_01-Jan10.LF-Prtcp.pdf](http://www.ebri.org/pdf/notespdf/EBRI_Notes_01-Jan10.LF-Prtcp.pdf).
- 4. IWIS has received support from the Lilly Endowment, the Joyce Foundation and currently the Lumina Foundation. Partners include the Indiana Department of Workforce Development, the Indiana Commission for Higher Education, the Indiana Department of Education, and the Indiana Business Research Center. More information about Florida’s program is available at [www.fldoe.org/fetpip/](http://www.fldoe.org/fetpip/).
- 5. This two-year time frame ensures that workers who are temporarily employed due to the recession would not be eliminated from the data set, and the \$10,712 threshold was selected because it represents the earnings equivalent of one “half-time” minimum wage job—20 hours per week at \$5.15 per hour for two years (104 weeks).
- 6. While these data are generally comprehensive, some employment that is not covered by unemployment insurance requirements (including some types of small businesses and family farms) is not available.
- 7. Currently, the IWIS database only contains wage records from 2001 onward. New wage records are added every quarter, and it is possible that historic data (prior to 2001) may be added in the future.
- 8. The industries used in this study are the 20 sectors defined by the North American Industrial Classification System (NAICS). More information about NAICS is available at [www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2007](http://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2007).

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# Countries IN Profile: Portugal

Located on the westernmost edge of the Iberian Peninsula, Portugal is a country of 10.6 million people, covering an area of just over 55,200 square miles, slightly larger than the state of New York. The country currently has an annual population growth rate of 0.1 percent, significantly below the current U.S. rate of 0.9 percent.<sup>1</sup> Compared to the majority of Western Europe and the developed world, Portugal generally ranks as one of the less advanced countries, appearing in 34th place on the UN Human Development Index (HDI), the 17th lowest score from the EU-27.<sup>2</sup> While Portugal is a highly developed state according to the UN definition, it is still significantly behind the United States on a number of the HDI measures (see Table 1). Despite the economic growth facilitated by EU membership, Portugal's GDP per capita remains approximately 48 percent below the Euro area average, a situation unlikely to improve given the recent economic developments.

Table 1: UN Human Development Index (HDI), 2007

HDI Measures	Portugal	United States
HDI Value	0.909	0.956
Life Expectancy at Birth (Years)	78.6	79.1
Adult Literacy Rate (Percent Ages 15 and Above)	94.9%	N/A
Combined Gross Enrollment Ratio*	88.8%	92.4%
GDP per capita (PPP US Dollars)	\$22,765	\$45,592

\*The proportion of people eligible for education who are receiving it, combined across primary, secondary and tertiary education.  
Source: Human Development Reports

Despite these economic difficulties, Portugal's relationship with the state of Indiana has remained strong, with Portuguese industries purchasing almost \$38 million worth of Indiana products in 2009, primarily in the transportation equipment industry. This figure may only account for 0.2 percent of all Indiana's exports, but Portugal continues to have a noticeable impact in the state's economy.

## The Portuguese Economy

A bloodless coup in 1974, colloquially referred to as the "Revolution of the Carnations" removed the authoritarian government from power. In 1986 Portugal joined the European Community alongside its neighbor, Spain.<sup>3</sup>

Throughout the late 1990s Portugal sustained a remarkable period of continued economic growth, consistently surpassing the average GDP growth rate for other European Union member states. Furthermore, Portugal managed to couple this growth with fiscal stability and well-managed public finances, making it one of the few signatory states to meet the Maastricht Treaty requirements for participation in the creation of the EU common currency. Portugal positioned itself well to experience the benefits of economic union, establishing a comparatively open and integrated economy with a low inflation rate throughout the positive upswing of the European business cycle during the second half of the 1990s.

The relationship with the European Union, however, has had a downside. The following decade has seen a marked fluctuation in Portugal's progress, with the country falling into recession in 2003, recovering in 2004, before the global recession once again returned the country to negative growth in

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Portugal is located in southwestern Europe on the westernmost edge of the Iberian Peninsula. View Portugal in a larger map.

## protocol tips for portugal

The Office of Protocol at the International Center of Indianapolis provided these tips for conducting business in Portugal. The mission of the International Center is to strengthen Indiana's global connections by supporting interactions between leaders from Indiana and the world.

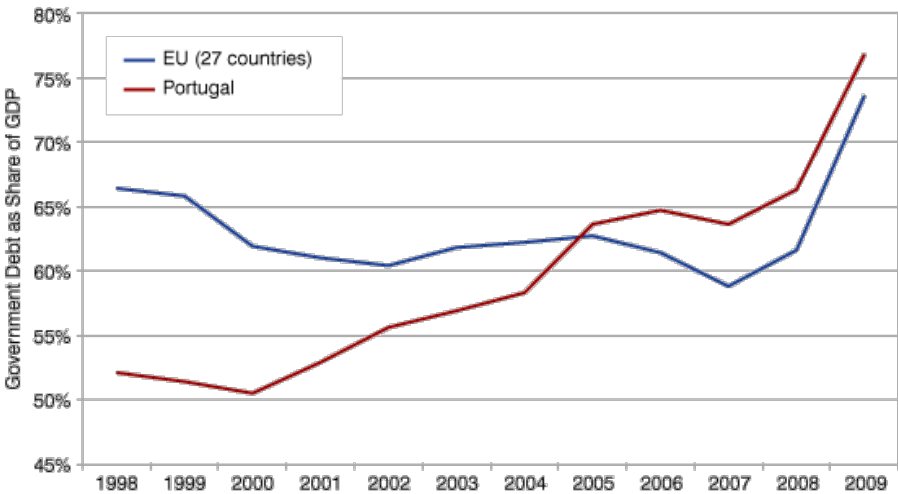
2008. Current forecasts suggest that the recovery will be slow and gradual. The European Commission predicts only 0.5 percent growth in Portugal's GDP for 2010 followed by an equally unimpressive 0.75 percent growth in 2011 (see Figure 1).<sup>4</sup> The Organisation for Economic Co-operation and Development (OECD), in contrast, is more optimistic, projecting an average growth of 0.8 percent for 2010 and 2.1 percent for 2011. That said, both organizations anticipate further increases in unemployment through the next two years. The government response to this situation has been to increase public spending and directly support employment. This may have mitigated the effects of the recent market collapse, but it has also drastically increased public borrowing from an average 65 percent of GDP prior to the recession to 77 percent in 2009 (see Figure 2) and borrowing is currently predicted to further increase to 86 percent in 2010.<sup>5</sup> As a result, Portugal's credit rating has been severely downgraded.<sup>6</sup>

Figure 1: Annual Change in Real GDP, 2000 to 2011\*



\*2010 and 2011 are projections  
Source: IBRC, using Eurostat data

Figure 2: Government Debt as a Share of GDP, 1999 to 2009



Titles and Forms of Address

In Portugal, hierarchy is respected and the Portuguese maintain a sense of formality in dealing with one another. The honorific title “Senhor” or “Senhora” should be used with the person's surname.

Language

It is recommended that one side of your business card is translated into Portuguese. Also avoid idioms with your English-speaking counterparts, since most Portuguese study British-English.

Time

Punctuality is not practiced as in other parts of the world. However, you should arrive to meetings at their scheduled time and demonstrate patience if meetings do not begin and end as anticipated. There is a degree of getting to know you that takes place before discussions turn to business.

Gestures

Using demonstrative hand gestures in presentations can be perceived as overly aggressive.

Greetings

Handshakes are the standard form of greeting among the Portuguese in the business setting. When a personal relationship is established, men will progress to a handshake and an embrace while women will kiss on both cheeks starting with the right.

Gift Giving

Business gifts are not exchanged at initial meetings. Relationships in business are between people and not companies, therefore gifts with company logos are not appropriate.

Dress

Conservative, formal attire is essential even in social settings. Portuguese are fashion conscious and appearances are very important.

For more information on conducting business in Portugal or any other country around the world, please contact Peter Kirkwood, Protocol Officer, Office of Protocol at the International Center of Indianapolis, which is sponsored by Duke Energy, [www.icenterindy.org](http://www.icenterindy.org).

Source: IBRC, using Eurostat data

Organizations such as Goldman Sachs have begun to group Portugal with Ireland, Italy, Greece and Spain as the EU15 countries suffering the most during the recession, referring to the group by the acronym “PIIGS.” Yet there is some dispute as to the usefulness of this term given that the five states have had such different economic problems over the past few years. Recently, Barclay’s bank forbade its employees from using the acronym because it suggests these states are in some way different or separate from the rest of the European economy. There are concerns that grouping these five countries together will undermine confidence in their economies.<sup>7</sup> The European Central Bank (ECB) together with the International Monetary Fund (IMF), has constructed a package of loans, primarily to assist the Greek government but also to aid any other vulnerable European states if required. Portugal is considered the European state most likely to require assistance after Greece; so far, it has not needed to call upon the assistance of these emergency funds. However, despite these measures to restore investor confidence, the ECB is still concerned that there remains the potential for further losses by European banks later this year if economic growth is weaker than expected.<sup>8</sup>

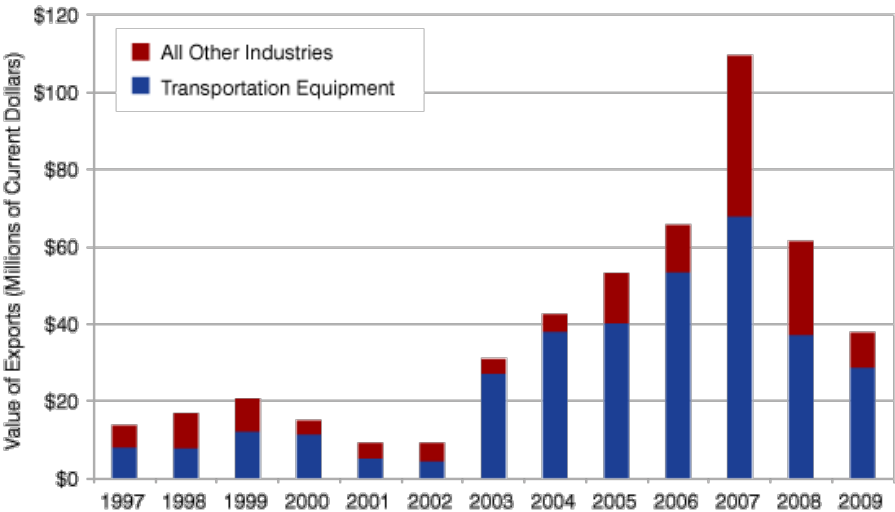
Falling tax revenues and mounting debt have caused the national government to reduce public investment, but structural funding from the EU has continued. EU funds support Portugal’s 2007-2013 strategy for economic growth, competitiveness and employment. The country’s research, development and innovation capabilities are the main targets for these funds. Other areas expecting significant investment include workforce training, the ICT infrastructure and high-speed transport links. All these expenditures will develop Portugal to a standard comparable to the rest of Western Europe and increase the country’s prospects as a destination for foreign direct investment.<sup>9</sup>

Portuguese industry has made notable investment in the Midwest with two major projects in the field of sustainable energy production. Horizon Wind, a Houston-based subsidiary of Energias de Portugal (EDP) has begun the construction of two wind farm facilities, one outside Bloomington, Ill., and one in Indiana’s Benton and White counties. If all the planned stages of the Indiana development are completed, it will be the largest facility the company operates in the United States. EDP expects to spend more than \$1.3 billion within the United States over the next three years in order to fund these projects.<sup>10</sup>

## Trade

Despite the downturn in GDP and domestic spending, the value of Indiana’s exports to Portugal has not suffered as much as might be expected, declining to just below 2004 levels in 2009 and forecast to return to growth in 2010 and 2011 (see Figure 3). In 2009, Indiana’s largest export to the global market was vehicles, closely followed by electrical machinery and industrial machinery.

**Figure 3: Value of Indiana's Exports to Portugal, Transportation Equipment and All Other Sectors, 1997 to 2009**



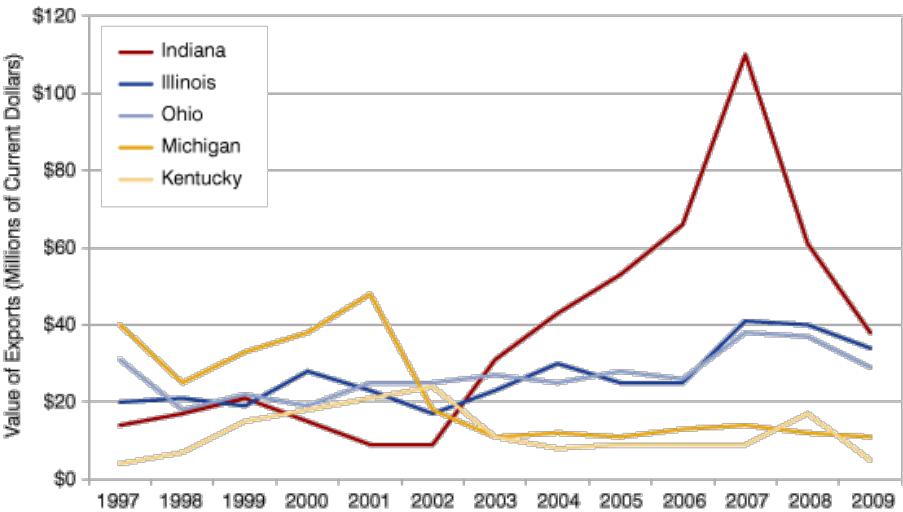
Source: IBRC, using Eurostat data

The value of Portugal's exports to the United States has been declining since 2006, falling 54 percent in the last four years. At the same time, American exports to Portugal rose until 2008, then fell by 41 percent in 2009. These dramatic changes are the result of collapsing demand. The fall in the demand for foreign goods in the United States occurred before Portugal because the recession hit the United States sooner. As the economic turmoil spread, domestic demand in Europe began to experience a similar decline.

Imports to Indiana from Portugal remained relatively low compared to other Western European countries. In 2009, Indiana ranked ninth amongst all states in exports to Portugal, but this position will likely slip in 2010 as the demand for transportation equipment continues to sag. Regionally speaking, however, Wisconsin is the only Midwestern state that has surpassed Indiana in the value of its exports and none of the states that border Indiana currently exports a greater value of goods to Portugal.

In many respects, Portugal and Indiana's imports and exports are mirror images. The largest industrial sector exporting from Indiana to Portugal is transportation equipment manufacturing, accounting for 70 percent of all exports in the past 12 years (refer again to Figure 3). Noticeably, production increased rapidly from \$4.7 million in 2002 to \$41.8 million in 2007; an increase of almost 900 percent. No bordering state has been able to duplicate this rapid expansion in the value of exports to Portugal, suggesting Indiana has a particularly strong relationship with the country compared to other states in the region (see Figure 4). Simultaneously, in Portugal, the commodity most exported to the world market is non-railway vehicles. The value of that commodity follows the same pattern of expansion and contraction as Indiana's exports of transportation equipment, growing during the period 2002 to 2007 (from \$3.7 million to \$6.4 million), followed by two years of decline in 2008 and 2009.

**Figure 4: Annual Value of Exports to Portugal, Indiana and Neighboring States, 1997 to 2009**



Source: IBRC, using WISERtrade data

The quantity of vehicles exported by Portugal influences the quantity of transportation equipment the country imports from Indiana. Consequently, an expansion in Portugal's export market will likely produce a resulting expansion within Indiana's manufacturing sector. The European Commission is currently predicting that Portugal's economic recovery will be largely fueled by its export sales due to demand in the depressed domestic market.<sup>11</sup> Therefore, one would expect that an export-led economic recovery in Portugal would be accompanied by an expansion in Indiana's production and exports of transportation equipment.

## Conclusion

It is remarkable how quickly Portugal's fortunes have changed over the past 15 years— from exceeding EU growth averages throughout the second half of the 1990s to record levels of

government debt, negative growth and unemployment in the following decade. While this economic downturn is not solely the fault of the Portuguese national economy, it demonstrates the risks inherent in economic integration. The prognosis is somewhat optimistic, with the economy set to expand and employment to rise at least over the next two years. Perhaps during this next decade Portugal will recreate its former success.

While Indiana may purchase relatively little from Portugal, the country is an important destination for the state's exports. Furthermore, Portuguese investment is set to become a major player in the electricity industry in the Midwest. Because it is relatively small, Portugal may not attract the media attention of Germany or the United Kingdom, but one should not overlook the important connections between the Hoosier and Portuguese economies.

Notes

1. World Bank, "Population Growth, Annual %," <http://data.worldbank.org/indicator/SP.POP.GROW/countries/latest?display=default> (accessed June 1, 2010).
2. The EU-27 consists of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.
3. Prior to the Treaty of Maastricht in 1993, the European Union was known as the European Community. BBC, "Portugal Country Profile," March 9, 2010, [http://news.bbc.co.uk/2/hi/europe/country\\_profiles/994099.stm](http://news.bbc.co.uk/2/hi/europe/country_profiles/994099.stm) (accessed June 3, 2010).
4. Directorate General for Economic and Financial Affairs, *European Economic Forecast* (Brussels: European Commission, 2010).
5. Directorate General for Economic and Financial Affairs, *European Economic Forecast* (Brussels: European Commission, 2010).
6. BBC, "Portugal Credit Rating Downgraded Over Debt Concerns," March 24, 2010, <http://news.bbc.co.uk/2/hi/8584812.stm> (accessed June 3, 2010).
7. "PIIGS Label Too Ham-Fisted for Barclay's," *The Irish Times*, February 6, 2010, Business Today section.
8. European Central Bank, "Financial Stability Review-Overview" (June 2010): 16.
9. Directorate General for Regional Policy, *Portugal: Results of the Negotiations of Cohesion Policy and Strategies and Programmes 2007-2013* (Brussels: European Commission, 2007).
10. Jeffery Ryser, "Horizon Wind Says Texas Market Overbuilt," *Electric Utility Week* (July 13, 2009): 20.
11. Directorate General for Economic and Financial Affairs, *European Economic Forecast* (Brussels: European Commission, 2010).

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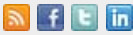
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# The Electric Power Transmission and Distribution Industry

When people talk about the electric power industry, the focus of the conversation is usually on the power generation side of the business or on the utilities. The power generation side examines the extraction of fossil fuels, alternative energy generation, oil spills, carbon emissions, and nuclear power. The utilities side focuses on the customer-oriented delivery side of the business, from electricity bill surcharges to outages in our electricity supply.

A third and often overlooked portion of the power and energy industry is the transmission and distribution space (T&D), an important cluster of industries that include the production of machinery, electric lines and transformers as well as line management systems (such as "smart-grid" technology) that improve efficiency. These are responsible for the actual "delivery" of the electric power—no matter the generation source, be it solar, gas, oil, wind or otherwise—to commercial, private and industrial users in a usable format. Table 1 shows the T&D space relative to other power and energy sub-sectors by 2008 capital expenditure.

**Table 1: Share of Infrastructure Spending for U.S. Electric Utilities by Power and Energy Sub-Sector, 2008**

Power and Energy Sub-Sector	Share of Infrastructure Spending
Generation	35.9%
Distribution	24.5%
Environment	14.4%
Transmission	11.7%
Other (Including Gas)	13.5%

Source: Edison Electric Institute

This article describes the T&D space within the energy economy and then summarizes the challenges yet tremendous growth potential for this cluster of industries given the aging U.S. infrastructure and rapid technological advancement of the developing world.

## Understanding Key Elements of the T&D Space

The T&D market supplies equipment, services and production systems for energy markets. The initial stage in the process is converting power from a generation source (coal, nuclear, wind, etc.) into a high voltage electrical format that can be transported using the power grid, either overhead or underground. This "transformation" occurs very close to the source of the power generation. The second stage occurs when this high-voltage power is "stepped-down" by the use of switching gears and then controlled by using circuit breakers and arresters to protect against surges. This medium voltage electrical power can then be safely distributed to urban or populated areas. The final stage involves stepping the power down to useable voltage for the commercial or residential customer (see Figure 1).

**Figure 1: Transmission and Distribution Grid Structure within the Power Industry**

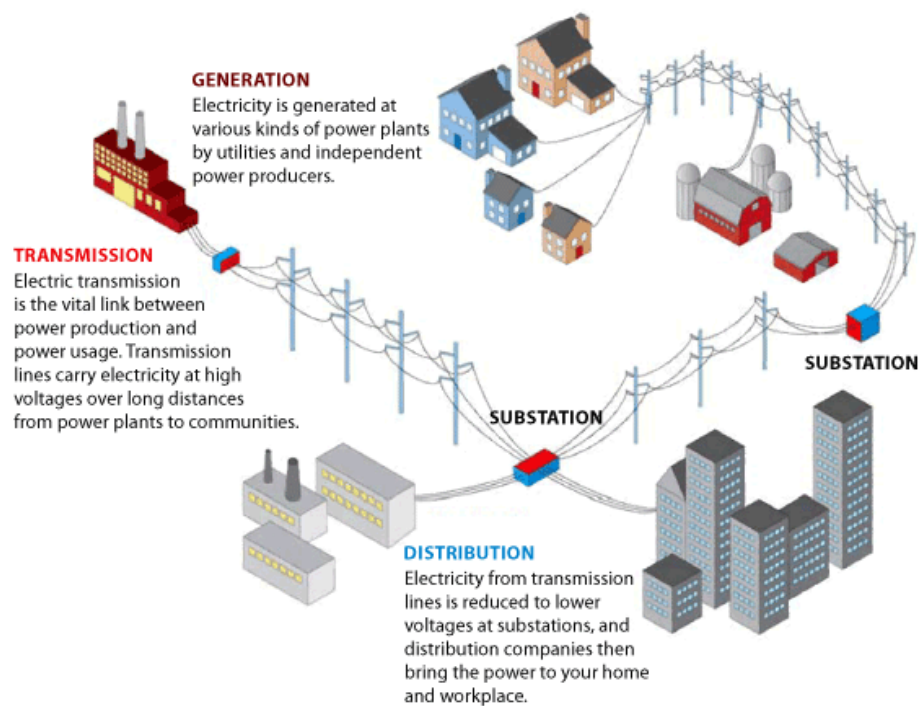
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Source: U.S. Department of Energy. "Benefits of Using Mobile Transformers and Mobile Substations for Rapidly Restoring Electric Service: A Report to the United States Congress Pursuant to Section 1816 of the Energy Policy Act of 2005." 2006. Available at: [www.ee.energy.gov/DocumentsandMedia/MTS\\_Report\\_to\\_Congress\\_FINAL\\_73106.pdf](http://www.ee.energy.gov/DocumentsandMedia/MTS_Report_to_Congress_FINAL_73106.pdf).

In short, while power generation relates to the installed capacity to produce energy from an organic or natural resource, the T&D space involves the follow up “post-power generation production” as systems and grids are put in place to transport this power to end users. While the T&D space does not perfectly follow typical industrial classification systems, its primary industries can be loosely distinguished from power generation as illustrated in Table 2.

**Table 2: Industries Associated with Generation and Utilities Compared to the Transmission and Distribution Space, 2007**

Category	NAICS Code	Description of Industry
Generation and Utilities	221111	Hydroelectric Power Generation
	221112	Fossil Fuel Electric Power Generation
	221113	Nuclear Electric Power Generation
	221119	Other Electric Power Generation
	221122	Electric Power Distribution*
Transmission and Distribution (T&D)	221121	Electric Bulk Power Transmission and Control
	221122	Electric Power Distribution*
	335311	Power, Distribution, and Specialty Transformer Manufacturing

\*The electric power distribution classification includes a substantial portion of electric power brokers and sales agents so it is categorized here as belonging to both generation and utilities as well as transmission and distribution.  
Source: Indiana Business Research Center

Despite its name, only part of the electric power distribution industry belongs to the T&D space and most of it to the generation and utilities group since it includes a substantial number of traditional utility businesses that focus exclusively on the “sale of electricity via power distribution systems operated by others.”<sup>1</sup>

The T&D space is estimated to have a market share of over \$50 billion globally and can be divided into four main segments, according to the organizational structure used by AREVA:<sup>2</sup>

Products: Manufacture of high and medium voltage power and distribution transformers. The drivers for this market are the aging T&D infrastructure, load growth from sprawl, deregulation and general industrial growth.

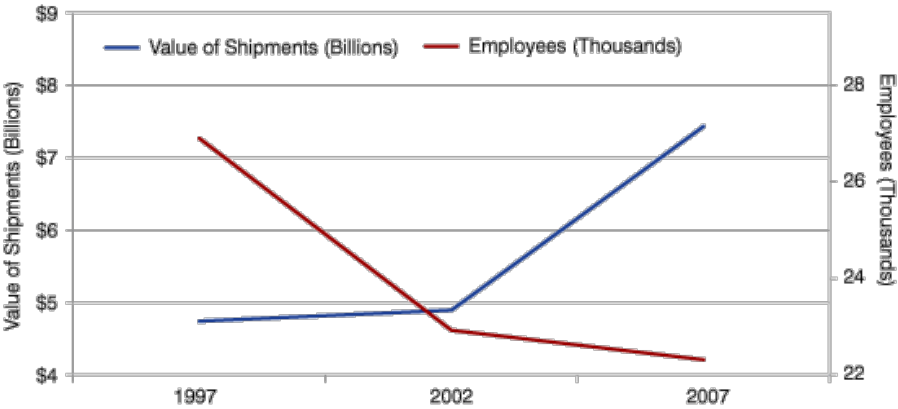
- Services: Support for the products and systems sold throughout its lifecycle, usually contracts for repair and maintenance. The drivers for this segment are aging infrastructure, preventative maintenance and general outsourcing.
- Systems: Research and development of turnkey substations, electronics for direct current substations and systems to increase grid capacity and quality. This fast growing market is primarily driven by an increased need for power electronics, network efficiency, reliability, and new sources for renewable energy.
- Automation: Products to detect failures, ruptures and general protection arenas. This may also include systems for substation and energy management or for remote management for the power grid.

### Revenue and Employment Trends in T&D-Related Sectors

Taking a closer look at three key industry sectors linked to the T&D space, we see that the increasing value of shipments and revenues is not necessarily linked to higher levels of employment.

Figure 2 reveals the value of shipments for the power, distribution and specialty transformer manufacturing industry, which made a dramatic 50 percent increase (from \$4.9 billion to \$7.4 billion) between 2002 to 2007 despite scant growth during the previous five-year period. However, employment continued to fall in the industry, albeit slower between 2002 to 2007 (-3 percent) than the 15 percent drop between 1997 and 2002.

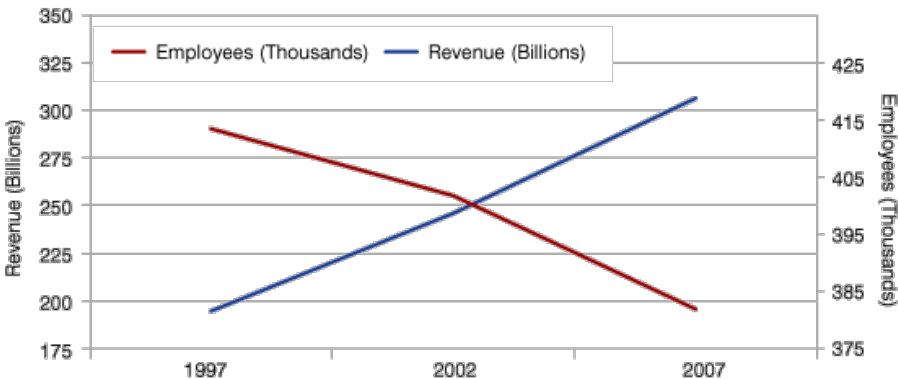
**Figure 2: U.S. Value of Shipments and Number of Employees for the Power, Distribution and Specialty Transformer Manufacturing Industry, 1997 to 2007**



Source: IBRC, using U.S. Census Bureau Economic Census data for NAICS 335311

We observe a similar trend for the massive electric power distribution industry which contains portions of the T&D space (see Figure 3). While revenues increased more than \$111 billion (57 percent) between 1997 and 2007, employment gradually decreased from 413 million employees in 1997 and 401 million in 2002 to 381 million in 2007—an 8 percent drop overall.

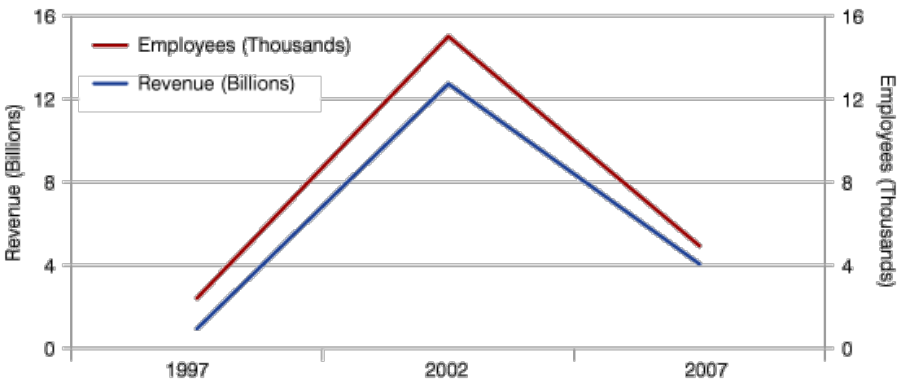
**Figure 3: U.S. Revenues and Number of Employees for the Electric Power Distribution Industry, 1997 to 2007**



Source: IBRC, using U.S. Census Bureau Economic Census data for NAICS 221122

Only in the highly volatile electric power transmission and control industry do we see a more positive correlation between revenue and employment (see Figure 4). The twelve-fold jump in revenues from \$1 billion to \$13 billion between 1997 and 2002 occurred at the same time the workforce grew to 15,000 employees—five times its size at the start of the five-year period. Then, as revenues plunged to \$4 billion (down 68 percent) by 2007, employment dropped 67 percent to 5,000 employees.

**Figure 4: U.S. Revenues and Number of Employees for the Electric Power Transmission & Control Industry, 1997 to 2007**



Source: IBRC, using U.S. Census Bureau Economic Census data for NAICS 221121

## Growth Potential of the T&D Space

While GE is the largest U.S. firm that participates in the T&D space, it lags far behind European companies ABB and Siemens and recently failed in its bid to acquire AREVA—the third largest global competitor.<sup>3</sup> Most of the growth in this sector is taking place in developing countries, particularly through the manufacture of large transformers outside the United States, thus increasing competition with parts and equipment suppliers across the globe.<sup>4</sup> Emerging markets are also increasingly the major demand side partners for T&D firms with over two-thirds of current power generation products being built outside of North America and Europe, with China alone representing almost 24 percent.<sup>5</sup>

According to the Edison Electric Institute, projected T&D spending of utilities for 2011 is going to top \$11 billion in the United States.<sup>6</sup> This level of spending is mandated by the U.S. government to service existing systems, to incorporate smart grid technologies into the current infrastructure, to enable both off-shore and land-based wind power generation towers to be part of the current system and to promote spending and growth of solar technologies and improved efficiency in the current system.

The U.S. T&D space has strong growth potential with the increasing need to replace aging transformers. Through a widely cited study, William Bartley found the average failure age for U.S. transformers was 18 years and the failure rate increases exponentially at the 30-year mark. This is alarming since the majority of current U.S. transformers were installed in the 1970s or earlier.<sup>7</sup> Bartley found that transformer failures were already on the rise with a total of 94 power losses from 1997 to 2001 resulting in total costs of over \$286 million. These facts present both a challenge and an opportunity for the T&D industry since analysts predict we are fast approaching an “asset wall” since the U.S. would require more than a 30 percent jump in T&D investment to replace aging infrastructure between 2007 and 2017.<sup>8</sup>

As the United States continues to discuss efficiency and a comprehensive plan for smarter energy, we can expect to see tremendous growth in the T&D space. However, higher values of shipments and revenues do not necessarily lead to higher employment, so special efforts may be needed to ensure that direct or indirect U.S. job creation occurs as T&D investment increases. In particular, more stable investment may be needed for the promising, yet volatile, electric power transmission and control industry where revenues seem most directly linked to job creation.

## Notes

1. More information on the North American Industrial Classification System (NAICS) can be found at: [www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2007](http://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2007).
2. AREVA was one of the world's leading T&D companies before the recent sale of its T&D division. This information comes from the AREVA 2009 Reference Document filed with the French financial market authority. It is available at [www.areva.com/mediatheque/liblocal/docs/pdf/groupe/pdf-doc-ref-09-va.pdf](http://www.areva.com/mediatheque/liblocal/docs/pdf/groupe/pdf-doc-ref-09-va.pdf).
3. Gianluca Baratti, "Areva Unit Goes to French Buyers," *Business Week*, December 2009, [www.businessweek.com/globalbiz/content/dec2009/gb2009121\\_311694.htm](http://www.businessweek.com/globalbiz/content/dec2009/gb2009121_311694.htm).
4. U.S. Department of Energy, "Benefits of Using Mobile Transformers and Mobile Substations for Rapidly Restoring Electric Service: A Report To The United States Congress Pursuant To Section 1816 of the Energy Policy Act Of 2005," 2005, [www.oe.energy.gov/MTS\\_Report\\_to\\_Congress\\_FINAL\\_73106.pdf](http://www.oe.energy.gov/MTS_Report_to_Congress_FINAL_73106.pdf).
5. The AREVA 2009 Reference Document is available at [www.areva.com/mediatheque/liblocal/docs/pdf/groupe/pdf-doc-ref-09-va.pdf](http://www.areva.com/mediatheque/liblocal/docs/pdf/groupe/pdf-doc-ref-09-va.pdf).
6. Marc W. Chupka, Robert Earle, Peter Fox-Penner, and Ryan Hledik, "Transforming America's Power Industry: The Investment Challenge 2010-2030," The Brattle Group / The Edison Foundation, 2008, [www.eei.org/ourissues/finance/Documents/Transforming\\_Americas\\_Power\\_Industry.pdf](http://www.eei.org/ourissues/finance/Documents/Transforming_Americas_Power_Industry.pdf).
7. William H. Bartley, "Analysis of Transformer Failures" (paper presented at the 36th Annual Conference of International Association of Engineering Insurers, Stockholm, 2003), [www.bplglobal.net/eng/knowledge-center/download.aspx?id=191](http://www.bplglobal.net/eng/knowledge-center/download.aspx?id=191)
8. For more information, please see Thomas A. Prevost and David J. Woodcock's "Transformer Fleet Health and Risk Assessment," IEEE Power & Energy Society Transformers Committee Tutorial, March 13, 2007.

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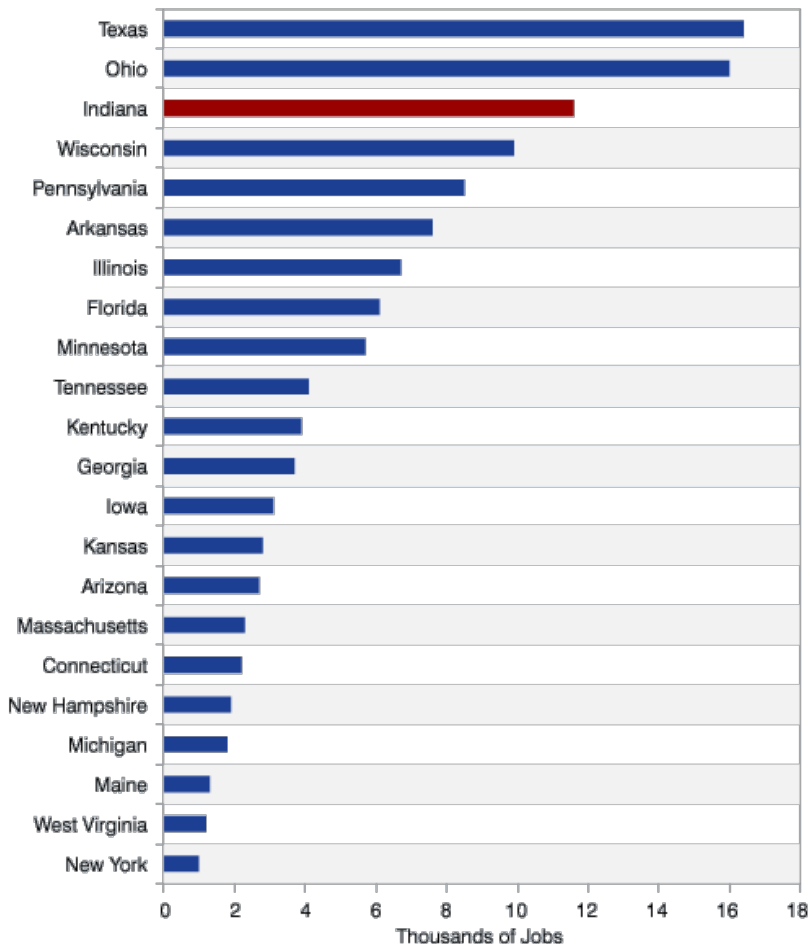
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# Jobs at Last Part of the Recovery

New jobs are being added to Indiana's economy. Between January and May of this year, Indiana added 51,800 jobs. While administrative and support services had the largest increase in jobs statewide, manufacturing came in second among the industries, adding 11,600 jobs.

In fact, Indiana had the biggest percentage gain in jobs of all the states, at 1.9 percent between January and May. It was also the third highest in adding manufacturing jobs, exceeded only by Ohio and Texas (see Figure 1).

Figure 1: Manufacturing Jobs Added between January and May 2010



Source: IBRC, using Bureau of Labor Statistics and Indiana Department of Workforce Development data

For more information, [click here for the June Jobs Watch Briefing](#).

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# North-Central Indiana: Realtors Region 2 Profile

July-Aug 2010, Vol. 11, No. 4

This is the second in a *InContext* Series of Indiana's six Realtors regions. For an overview of this article series and a map of all the regions, see the first article at

[www.incontext.indiana.edu/2010/may-june/article5.asp](http://www.incontext.indiana.edu/2010/may-june/article5.asp).

## Geography

Realtors Region 2, with a 2009 estimated population of 862,000, comprises 17 counties in north-central Indiana: Benton, Blackford, Carroll, Cass, Clinton, Delaware, Fountain, Grant, Henry, Howard, Madison, Miami, Tippecanoe, Tipton, Wabash, Warren and White (see Figure 1). The region covers a land area of more than 6,500 square miles and has a population density of 132 people per square mile, giving residents lots of room.

**Figure 1: North-Central Indiana: Realtors Region 2**



Source: IBRC, using the Indiana Association of Realtors definition

## Population

The largest city in Realtors Region 2 is Muncie, with a population in 2009 nearing 68,000. Lafayette

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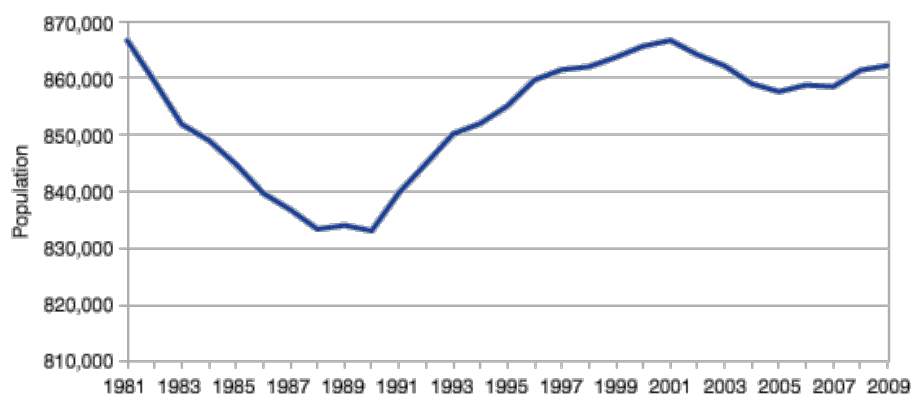
came in at a close second, with more than 65,000 people in 2009 (see Table 1). Realtors Region 2 had a total population of 862,185, a decrease from its 2000 population of 865,646 (see Figure 2). The population in Realtors Region 2 is projected to continue declining through 2015 according to the official county population projections from the IBRC.

**Table 1: Largest Cities in Region 2, 2009**

Name	Population	Percent of Region
Muncie	67,791	7.9%
Lafayette	65,704	7.6%
Anderson	57,189	6.6%
Kokomo	45,396	5.3%
West Lafayette	31,530	3.7%
Marion	30,418	3.5%
Logansport	18,586	2.2%
New Castle	18,140	2.1%
Frankfort	16,502	1.9%
Peru	12,217	1.4%

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

**Figure 2: Region 2 Population Levels, 1981 to 2009**

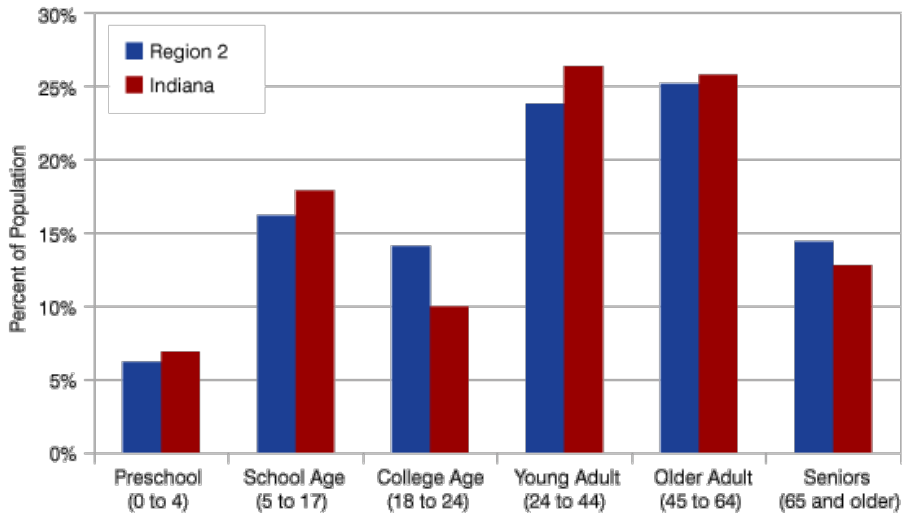


Source: IBRC, using U.S. Census Bureau data

This region has an age mix that differs, sometimes significantly, from the state's mix (see Figure 3). The most notable difference is in the proportion of college-age people (14.1 percent compared to 10 percent for the state). This is understandable when we consider the location of Purdue University and Ball State University in the region. The age differences also pop out when considering that 14.6 percent of the regional population is 65 and older, compared to the statewide figure of 12.9 percent. One can infer some interesting housing needs in this region, varying from student housing, to family formation, and then retirement.

Among the Realtors regions, Region 2 ranks third in net international migration, with 1,498 more people moving into the region from overseas between 2008 and 2009 than moving out. The region also has a positive rate of natural increase (more births than deaths), but had a net loss of 2,990 people via out-migration to other regions or states in the 2008-2009 time period.

**Figure 3: Current Age Structure, 2009**



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

The region is not particularly diverse when it comes to race and Hispanic origin. Ninety-two percent of the population is identified as white, with a small proportion of African-Americans (4.7 percent compared to the state’s 9.2 percent) and Asians (1.6 percent, which is concentrated in Tippecanoe County).

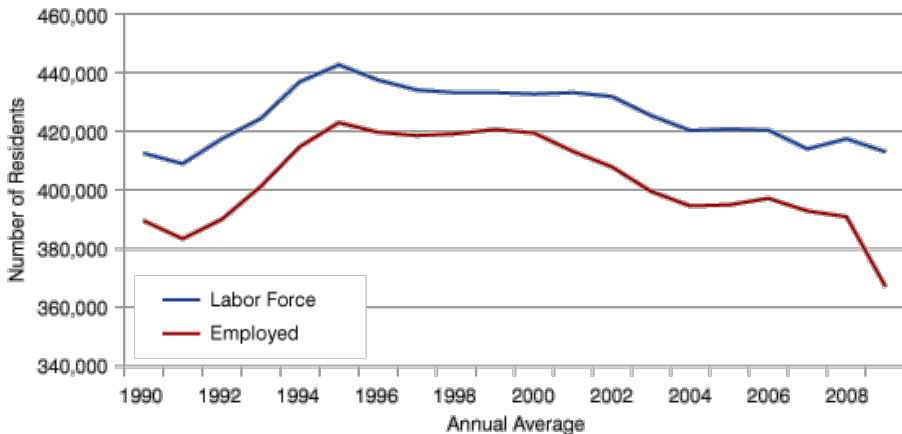
## Housing

With an estimated 385,000 housing units, the region ranks fourth among its peers on that measure and third in the number of renter-occupied units (no surprise ... just think Purdue!).

## Labor Force

As seen in Figure 4, more than 400,000 residents of the region are part of the labor force: 367,000 people are employed and the remaining 46,000 are actively seeking work (i.e., unemployed). The April 2010 unemployment rate for the region was 10.6, which was 8 percent higher than the state rate of 9.8 for that same month. For a closer inspection of labor force numbers, be sure to visit Hoosiers by the Numbers, the workforce development website of the Indiana Department of Workforce Development. These numbers come out monthly and previous months are revised.

**Figure 4: Region 2 Resident Labor Force and Employment**



Source: IBRC, using Indiana Department of Workforce Development data

## Work

The vast majority of residents work in private industry or in what are called “nonfarm” jobs. The largest sectors include manufacturing, retail, and health care and social services. Recent news articles show that this region also has jobs springing up in wind energy businesses, with large wind farms now appearing in White and Benton counties. These wind farms provide a rare treat for those

traveling I-65 and in need of some visually awe inspiring sights; recent news has the town of Fowler in Benton County considering a tourist facility providing information about the wind farms that would provide classrooms and banquet facilities.<sup>1</sup>

Table 2: Realtors Region 2 Jobs by Industry, 2008

Industry	Jobs	Jobs LQ
Total	321,475	0.99
Manufacturing	64,964	2.03
Retail Trade	39,196	1.07
Health Care and Social Services	36,181	0.81
Accommodation and Food Services	28,001	0.99
Public Administration	14,684	0.83
Construction	11,913	0.69
Educational Services	10,911	0.35
Administrative, Support and Waste Management	10,165	0.49
Finance and Insurance	9,319	0.58
Wholesale Trade	8,992	0.63
Other Services (Except Public Administration)	8,678	0.81
Transportation and Warehousing	7,222	0.54
Professional, Scientific, and Technical Services	7,069	0.39
Information	3,735	0.51
Arts, Entertainment, and Recreation	3,471	0.67
Real Estate and Rental and Leasing	3,375	0.63
Management of Companies and Enterprises	1,497	0.34
Agriculture, Forestry, Fishing and Hunting	1,148	0.41
Utilities	546	0.32
Mining	93	0.06

Note: The employment numbers for some industries may be low due to nondisclosable data at the county level.  
Source: IBRC, using U.S. Bureau of Labor Statistics

## Industry Clusters

Clusters can be a valuable way to organize our thinking about industry mix in an area. The Purdue Center for Regional Development has identified 17 clusters that give insight into the core industries and their supplier industries. The idea is to consider what the employment is for such clusters and the number of establishments that work in that cluster and in a particular region. Table 3 shows these clusters for Region 2.

In using the table, it's worthwhile to consider the actual number of establishments shown. We always want to know "volume" or just plain "how many." But of equal value is the location quotient (LQ) provided in the column next to the number of firms. Anything over 1.0 means the region has export capacity—exporting to their neighbors in another region, another state, across the nation or around the globe. The idea of having "more than we need" indicates that those clusters are serving needs outside the region as well as within its borders. In short, having an LQ higher than one is good; if it is a lot higher than one (as in, say, primary metals), then the cluster is quite strong.

If clusters have piqued your interest, go to [www.statsamerica.org/innovation](http://www.statsamerica.org/innovation) to see the data in action.

Table 3: Realtors Region 2 Industry Clusters, 2008

Description	Cluster Establishments	Industry Cluster Establishment LQ
Total All Industries	17,485	1.00

Business and Financial Services	1,999	0.74
Energy (Fossil and Renewable)	1,225	1.06
Biomedical/Biotechnical (Life Sciences)	810	1.90
Transportation and Logistics	582	1.47
Agribusiness, Food Processing and Technology	563	2.02
Information Technology and Telecommunications	548	0.66
Manufacturing Supercluster	477	1.77
Arts, Entertainment, Recreation and Visitor Industries	470	0.92
Advanced Materials	452	1.66
Education and Knowledge Creation	421	1.11
Defense and Security	380	0.65
Forest and Wood Products	358	0.94
Printing and Publishing	261	0.68
Fabricated Metal Product Manufacturing	190	1.61
Chemicals and Chemical Based Products	157	1.16
Machinery Manufacturing	122	2.08
Apparel and Textiles	107	0.67
Transportation Equipment Manufacturing	84	2.81
Glass and Ceramics	76	1.81
Primary Metal Manufacturing	36	3.11
Mining	36	1.55
Computer and Electronic Product Manufacturing	30	0.82
Electrical Equipment, Appliance and Component Manufacturing	15	1.06

Source: IBRC, using U.S. Bureau of Labor Statistics and Purdue Center for Regional Development data

## Time to Explore

We hope to have given you a fast trek through the numbers for Realtors Region 2. We could go on, but then that might spoil your fun in going to STATS Indiana's IN Depth Profiles and learning more about this region or the whole host of regions we have available.

## Notes

1. Associated Press, "Indiana county hopes wind energy, proposed tourism center bring in more visitors," *The Republic*, May 29, 2010.

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Previous Article: [Jobs at Last Part of the Recovery](#)

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