A publication of the Indiana Business Research Center at IU's Kelley School of Business

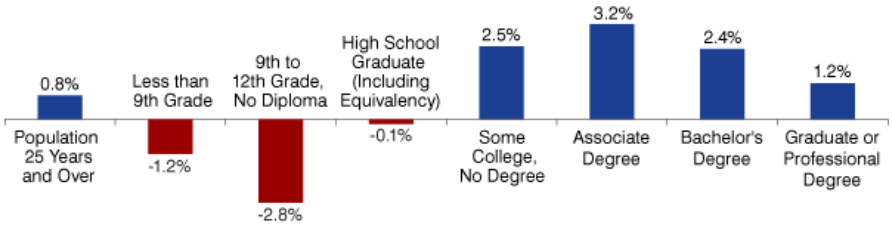
The Education of Hoosiers: An Overview

Indiana's adults (age 25 and older) comprise two-thirds of our population. Most importantly, they comprise the bulk of our workforce as well as a growing proportion of the retired elderly.

Understanding the levels of education Hoosier adults have attained is fundamental to understanding the capacity of our workforce. With the release of the five-year estimates of the American Community Survey (a product of the U.S. Census Bureau) for 2011, we now have two estimates available for comparison.

What can we learn from the 2010 and 2011 estimates? We have fewer Hoosiers with less than a high school or even ninth grade education and more adults with some college courses and degrees (see **Figure 1**).

Figure 1: Educational Attainment Change between 2010 and 2011 Five-Year Estimates



Source: IBRC, using U.S. Census Bureau ACS five-year estimates

Impressive gains have been made in the increase of adults with an associate degree, growing by nearly 10,000 persons between the two periods of time measured by these estimates. Even more impressive are gains in the population with at least some college (although no degree—yet), an increase of more than 20,000 (see **Table 1**).

Table 1: Indiana's Educational Attainment Statistics, 2010 to 2011

Educational Attainment	2011	Percent of 2011 Adults	2010	Percent of 2010 Adults	Change 2010 to 2011	Percent Change
Population 25 Years and Over	4,199,481	100%	4,165,617	100%	33,864	0.8%
Less than 9th Grade	178,306	4.2%	180,416	4.3%	-2,110	-1.2%
9th to 12th Grade, No Diploma	382,906	9.1%	394,031	9.5%	-11,125	-2.8%
High School Graduate (Including Equivalency)	1,504,338	35.8%	1,506,526	36.2%	-2,188	-0.1%
Some College, No Degree	866,012	20.6%	845,057	20.3%	20,955	2.5%
Associate Degree	315,182	7.5%	305,295	7.3%	9,887	3.2%
Bachelor's Degree	611,431	14.6%	597,152	14.3%	14,279	2.4%
Graduate or Professional Degree	341,306	8.1%	337,140	8.1%	4,166	1.2%
Percent High School Graduate or Higher	n/a	86.6%	n/a	86.2%	n/a	n/a
Percent Bachelor's Degree or Higher	n/a	22.7%	n/a	22.4%	n/a	n/a

Source: IBRC, using U.S. Census Bureau ACS five-year estimates

Access more 2011 data for a variety of topics and geographies at **www.census.gov/acs/www/**.

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Taking the Hometown Discount: What is the Daily Commute Worth to You?

What is the cost of your daily work commute? Most of us probably don't think beyond the gas, but the true cost calculation of commuting goes beyond the physical cost of gasoline and automobile wear. True commuting costs should also include the lost productivity of idle time sitting in traffic and the emotional cost of the drive, sitting in traffic and for long commutes, being further removed from family and familiar surroundings. While traditional accounting methods can be used to calculate the monetary costs of commuting, the emotional costs are more difficult to quantify.

Rather than trying to determine the cost directly, this study utilized revealed preferences of job seekers in the reemployment market. The study examined unemployment insurance claims for a six-year period (2004-2009). Using data and methodology from previous research, the study developed a proximity variable based on ZIP codes of claimants and employment. The results show that while people would accept jobs closer to their home at a reduced wage, they would not wait longer for such a job to materialize.

This analysis concluded that the public valued commuting in Indiana, both in physical and emotional terms, to be $2,290 annually.

Research Method

This study is a continuation of a working paper examining the Indiana labor market. The Zimmer (2011) study focused on age using an Ordinary Least Squares (OLS) model to test for age bias while controlling for additional mitigating factors. The study found that businesses appreciate the experience and wisdom that comes with an aged workforce, but that beyond the age of approximately 50, age became a liability.

The test for hometown bias used the same data as the Zimmer analysis, which was based on 2004 to 2009 unemployment claims. The analysis focused on ZIP code information pertaining to the applicant's home address and the employer after reintegration and tested for wage disparities. Controls were established for age, education, race and gender affects (Braun, 2011; Burr et al., 1996; Iversen and Rosenbluth, 2006; Moore, 2010; Niessen, 2006; Warr and Jackson, 1984). **View more methodology»**

Results

Table 1 shows the influence of the variety of independent variables considered in determining wage differences for people moving through the unemployment insurance (UI) system between 2004 and 2009.

Table 1: Difference Between Wages Before Unemployment and After

Independent Variable	Difference ($)
Total Weeks Claimed	-$18
Same Industry	$1,597
Wage Before Claim*	-$1
Age	$0**
Gender: Male	$945
Proximity of Job to Home	-$572
Race: White	$357

*Second and third quarter average

** Not statistically significant at the 1 percent level.

Source: Indiana Department of Workforce Development

Each week of unemployment reduced an individual's reemployment quarterly wages by $18 on average. The results indicated that the longer an individual waits to find reemployment, the more this negatively impacts the wage at which they will be hired back

compared to their previous wage. The total weeks claimed variable was subject to selection bias. Better qualified individuals justifiably deserve higher compensation and would likely be removed quickly from the reemployment market. The inclusion of previous wages, demographic and educational variables should have largely captured the influence of employee qualification and helped control for selection bias.

The cost of switching industries grew as a person acquires skill and experience with a particular trade. The ability to leverage acquired skills and experience for higher wages was evident by the premium paid to those workers able to stay within a particular industry.

The most significant predictor of a person's wages emerging from the reemployment market was the salary of the individual prior to entry. The results indicated that the potential of emerging from the reemployment market with wages equal to or higher than previous wages was unlikely.

Age

Unlike the previous study, the age of unemployment was statistically insignificant. However, the previous study examined this variable by age cohort, and it was only at that time did it reveal its significance and switch from positive to negative in advancing years. The results would have likely repeated and been consistent if the data were completed by age cohort.

Race and Gender

Race and gender results were statistically significant. As previously noted, the data do not provide for the number of hours worked, which may have partially explained these results. The results generally indicated a difference observed in the gender and racial variables, favoring white and male claimants.

Education

The link between wages and education within the reemployment market was positive and statistically significant. Outside of a doctorate, the results indicated that the more education a person obtains, the higher the premium in quarterly wage differential firms were willing to pay.

Table 2: The Link Between Wages and Education within the Reemployment Market

Education	Post Unemployment Difference
Doctorate	$1,014
Master's	$1,519
Bachelor's	$1,425
3 Years Technical/Vocational Education	$485
2 Years Associate/ Vocational Education	$908
1 Year Technical/Vocational Education	$425
High School	$160

Source: Indiana Department of Workforce Development

Occupation

The occupation variable results were diverse. Some industries such as engineering and heavy construction did very well in reemployment, while others, such as the military and food service, did poorly.

Table 3: The Link Between Wages and Occupation within the Reemployment Market

Occupations	Post Unemployment Difference
Management	-$548
Business and Financial Operations	-$437
Computer and Mathematical	$275*
Architecture and Engineering	$378
Life, Physical, and Social Science	-$982
Community and Social Service	-$1,035
Legal	-$585*
Education, Training, and Library Occupations	-$1,051

Arts, Design, Entertainment, Sports, and Media	-$951
Health Care Practitioners and Technical	-$146*
Health Care Support	-$822
Protective Service	-$1,323
Food Preparation and Serving Related Occupations	-$1,441
Building and Grounds Cleaning and Maintenance	-$1,355
Personal Care and Service	-$1,287
Sales and Related	-$1,000
Office and Administrative Support	-$589
Farming, Fishing, and Forestry	-$1,450
Construction and Extraction	-$113*
Installation, Maintenance, and Repair	$433
Production	-$243
Transportation and Material Moving	-$130*
Military Specific	-$2,493

* Not statistically significant at the 1 percent level.
Source: Indiana Department of Workforce Development

Conclusion

The interesting aspect of this study was the proximity. Those finding work within the same ZIP code of residence generally accepted a discount in quarterly wage of $572. On an annual basis, people had a willingness to pay approximately $2,290 annually for the opportunity to work closer to home (as expressed by a hometown wage discount). Interestingly, when switching the dependent variable to total weeks, it was determined that individuals spend no additional time searching for employment in close proximity. While willing to take a lower salary for working closer to home, people did not delay taking a job for the sake of proximity.

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incontext

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Labor Force Dynamics: What Influences the Size of the Labor Force?

The unemployment rate is readily understood in society and is often the focus of interest for the media, citizenry and politicians. Despite the relative popularity of the statistic, its composition is much less known. Arriving at the unemployment rate is simple since it is calculated as the number of unemployed individuals divided by the number of persons in the labor force, with both the numerator and denominator being dynamic with respect to time. That variation, or dynamic, of the labor force is the focus of this article. Our analysis examines potential influences on the labor force to better understand the motivations behind individual movements within the labor force by forming a model to explain labor force growth and contraction. This builds upon previous work explaining instability in labor force participation.[1]

The study examined data collected from 2002 to 2010 (nine years of data) for the 50 states and the District of Columbia and used a fixed effects model to test for influences on labor force size. **View the linked pdf with more detail about the methodology and the regression results.** Unless otherwise noted, the variables discussed below are statistically significant at the 1 percent level.

Factors Influencing the Labor Force

- Population: As expected, population increases result in labor force increases. Both the strength of the influence and the magnitude are strong. A one percent increase in state population results in a 0.74 percent increase in labor force size.
- Income: As state incomes grow, it attracts labor force entrants hoping to take advantage. However, a state's cost of living is shown to have no influence on labor force size and is not statistically significant.
- Educational Attainment: A more educated society has a larger labor force.
- Homeownership: A higher homeownership rate is associated with a slightly smaller labor force. This is likely due to reduced employee mobility since a dynamic labor force would also be mobile. Homeownership likely reduces this mobility and thus negatively impacts labor force size. Homeownership has many benefits for society, but this is one negative tradeoff.
- State-Specific Influences: The state binaries are generally positive and indicate a statewide influence regarding labor force size. Without further data, teasing out state-specific causes is problematic. The purpose of the binary is simply to recognize these potential influences and control for them.

Conclusion

This analysis examined various influences on the size of the labor force over a nine-year period. As expected, after controlling for yearly and statewide factors, the labor force is shown to be closely tied to state population size and economic output. Higher levels of population and economic production induce higher labor force size. Personal income levels and educational attainment are shown to positively influence on labor force size, while cost of living within a state is shown to have no impact. Finally, homeownership is shown to reduce labor force size as it likely alters worker mobility patterns.

Notes

1. R.E. Hall, "Sources and Mechanisms of Cyclical Fluctuations in the Labor Market," Stanford University Hoover Institution and Department of Economics, National Bureau of Economic Research, 2008, **www.stanford.edu/~rehall/SM022208.pdf**.

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