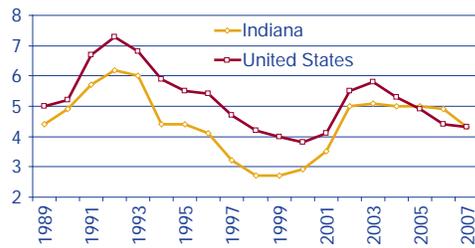


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May Unemployment Rates

Indiana's May unemployment rate dropped by 0.6 percentage points from 2006 to 2007, leveling off with the nation's rate of 4.3 percent.



Per Capita Personal Income

Indiana's 2006 per capita personal income was \$32,526, up \$1,353 since 2005.



Source: IBRC, using U.S. Bureau of Economic Analysis data

The Wage Pyramid: Wage Variance in Indiana

No one is surprised that an experienced, successful attorney draws higher wages than a legal secretary or a law clerk. A store manager takes home a bigger paycheck than the employees working the front counter of a fast-food restaurant. Experience pays. Training and possessing skills in demand do too. Entry-level workers typically form the base of a wage pyramid. As the pyramid grows higher, it reflects the shrinking numbers of employees with more experience, training, skills and ultimately wages. The Indiana Department of Workforce Development (DWD) works to close wage and skill gaps with a mission to raise workers up one level. DWD's goals include raising Hoosier per capita income and the skills of our workforce (see **Figure 1**).

In collaboration with the Bureau of Labor Statistics, DWD operates the Occupational Employment Statistics (OES) program and produces survey-based wage estimates for 750 Indiana occupations.¹ The distribution of these wages can be examined to shed light on how

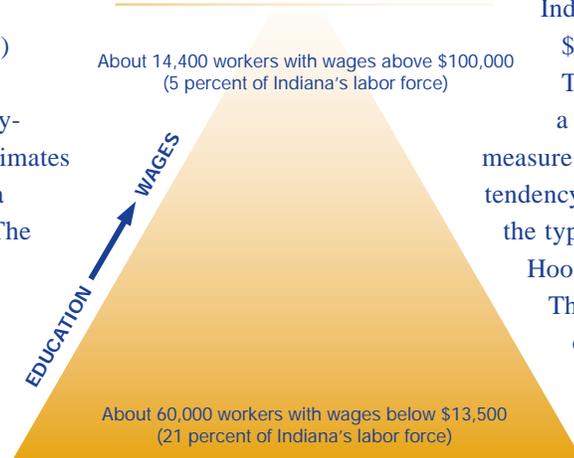
wages vary within and across various occupational families or groups. The OES survey includes all industries and presents estimates in terms of wages that represent the arithmetic average, the 10th percentile, the first quartile, the median, the third quartile and the 90th percentile. Examination of the wages of those earning the least (the lowest 10 percent of wages) and the most (the highest 10 percent) provides a measure of the amount of wage variance. For more information about OES, or to search for state and local occupation or wage data, check out Hoosiers by the Numbers at www.hoosierdata.in.gov/nav.asp?id=8.

Measuring the Wage Distribution

For all occupations in Indiana, the average wage is \$34,080. However, a wage you hear more often is the

median wage for Indiana, which was \$27,670 in 2005.² The median is a more useful measure of central tendency, illustrating the typical wage for Hoosier workers. This is the wage of the "middle" worker—50 percent of workers earn

FIGURE 1: THE WAGE PYRAMID, 2005



less than this amount, and 50 percent earn more. The 10th percentile wage for all occupations in Indiana is \$14,710, reflecting that 10 percent of workers earn this amount or less. In contrast, the 90th percentile wage for all occupations in Indiana is \$58,860. This tells us that

“The 90/10 wage ratios are highest in legal occupations, where those earning the top 90 percent make nearly five times the wages of those earning the lowest 10 percent. Meanwhile, for food preparation and serving workers, top wages are less than twice as much as the lowest wages.”

only 10 percent of workers in Indiana earn wages of that amount or more. Overall, the Hoosier wage earner at the 90th percentile makes four times the income of the wage earner at the 10th percentile. The higher the 90/10 ratio (in this case 4.0), the greater the variance between wages paid at each end of the

distribution. **Table 1** displays the ratio, or variance, between wages within each occupational group.

The 90/10 ratio and the level of variance among wages varies widely across occupational groups. For occupations in the legal sector, the wage earner at the 90th percentile earns \$116,340, 481 percent of the \$24,200 income the worker at the 10th percentile earns, with a ratio of 4.81. In contrast, the ratio of food preparation and serving-related occupations is 1.96. The largest contrast can be seen when we examine wages across occupational

TABLE 1: WAGE PYRAMIDS BASED ON 90/10 RATIOS BY OCCUPATIONAL GROUPS, 2005

Occupational Groups	Total Employment	Annual Mean	10th Percentile	Median	90th Percentile	90/10 Ratio	Number of Workers in the 10 Percent
All Occupational Groups	2,891,360	\$34,080	\$14,710	\$27,670	\$58,860	4.00	289,136
Legal	12,130	\$58,300	\$24,200	\$44,530	\$116,340	4.81	1,213
Sales and Related	285,420	\$30,130	\$13,060	\$20,670	\$59,090	4.52	28,542
Arts, Design, Entertainment, Sports and Media	29,640	\$34,430	\$13,540	\$29,980	\$59,530	4.40	2,964
Management	113,130	\$77,380	\$33,940	\$67,350	\$139,750	4.12	11,313
Education, Training and Library	163,970	\$38,320	\$16,740	\$34,400	\$64,560	3.86	16,397
Life, Physical and Social Science	18,960	\$53,640	\$26,320	\$44,030	\$100,060	3.80	1,896
Health Care Practitioners and Technical	151,500	\$52,710	\$23,480	\$43,940	\$85,910	3.66	15,150
Business and Financial Operations	89,140	\$50,230	\$24,740	\$45,500	\$81,760	3.30	8,914
Protective Service	54,170	\$31,230	\$15,470	\$28,790	\$50,770	3.28	5,417
Transportation and Material Moving	260,500	\$28,950	\$14,730	\$25,810	\$46,980	3.19	26,050
Computer and Mathematical	37,200	\$54,940	\$28,150	\$52,120	\$87,040	3.09	3,720
Construction and Extraction	140,000	\$40,160	\$21,940	\$37,790	\$62,850	2.86	14,000
Installation, Maintenance and Repair	132,820	\$37,710	\$20,340	\$35,450	\$57,610	2.83	13,282
Architecture and Engineering	47,710	\$57,220	\$31,440	\$54,530	\$88,080	2.80	4,771
Production	400,680	\$31,430	\$18,220	\$28,660	\$50,920	2.79	40,068
Community and Social Services	30,180	\$33,880	\$19,750	\$31,120	\$52,740	2.67	3,018
Office and Administrative Support	450,180	\$27,710	\$16,280	\$25,540	\$43,050	2.64	45,018
Farming, Fishing and Forestry	2,780	\$25,490	\$15,030	\$22,380	\$39,340	2.62	278
Building and Grounds Cleaning and Maintenance	92,550	\$21,640	\$13,760	\$19,750	\$32,750	2.38	9,255
Personal Care and Service	58,340	\$19,660	\$12,460	\$17,810	\$29,050	2.33	5,834
Health Care Support	64,340	\$23,590	\$16,170	\$21,870	\$33,290	2.06	6,434
Food Preparation and Serving Related	256,020	\$16,460	\$11,750	\$15,170	\$23,010	1.96	25,602

Note: Yellow highlighted occupations indicate the three occupational groups with the highest wage earners at the 90th percentile; blue highlighted cells indicate the three lowest wage earners at the 90th percentile. Source: Indiana's May 2005 Occupational Employment Survey

groups. For example, the ratio of the 10th percentile wage earners in food preparation occupations and the 90th percentile wage earners in management occupations is 11.9.

Recent Trends and a National Comparison

The 90/10 ratio has been used as a measure of income variance by the Bureau of Labor Statistics (BLS) since 1967. The BLS measure is based on the Current Population Survey (CPS) and is broken out by gender. Changes

in data collection over the years make it difficult to compare data before 1992. According to the CPS figures, the ratio of the male worker at the 90th percentile to the 10th percentile was 5.77 in 2001, compared to 4.62 for female workers. For men, this ratio has increased 9 percent since 1995, when the ratio was 5.31. The ratio among women has increased by 4 percent, up from 4.46 in 1995.³

While the CPS survey provides a good source of data to calculate the 90/10 ratio on a national scale,

the smaller sample size at the state level makes a similar ratio difficult to replicate for Indiana. To accurately compare how Hoosier wage variance might compare to the nation, we compared the 90/10 ratio with national and statewide OES data. The OES program is also based on a survey, and the results for wage earners who make over \$150,000 are footnoted and aggregated, but the actual wage figure amount is not documented. This is consistent for the state and national data, so the comparison is valid. It

TABLE 2: INDIANA AND NATIONAL 90/10 RATIOS BY OCCUPATION, 2001 TO 2005

Occupation	Indiana						United States					
	2001	2002	2003	2004	2005	Percent Change Since 2001	2001	2002	2003	2004	2005	Percent Change Since 2001
All Occupations	3.91	3.94	3.96	3.96	4.00	2.2%	4.47	4.49	4.54	4.60	4.65	3.9%
Life, Physical, and Social Science	3.08	3.20	3.23	3.83	3.80	23.5%	3.53	3.56	3.61	3.58	3.56	0.8%
Arts, Design, Entertainment, Sports, and Media	3.81	3.95	4.29	4.33	4.40	15.4%	4.73	4.64	4.70	4.67	4.68	-1.1%
Computer and Mathematical	2.68	2.83	2.90	3.06	3.09	15.3%	3.05	3.02	3.02	3.05	3.08	0.9%
Business and Financial Operations	2.97	3.08	3.13	3.25	3.30	11.2%	3.14	3.15	3.13	3.11	3.09	-1.6%
Protective Service	2.95	2.94	2.97	3.41	3.28	11.1%	3.82	3.81	3.84	3.86	3.90	2.3%
Health Care Support	1.91	1.90	1.91	1.95	2.06	7.7%	2.24	2.22	2.22	2.23	2.24	-0.1%
Sales and Related	4.22	4.24	4.30	4.36	4.52	7.1%	4.42	4.47	4.54	4.65	4.72	6.7%
Architecture and Engineering	2.64	2.72	2.71	2.83	2.80	6.0%	2.98	2.99	2.98	2.99	3.04	2.2%
Office and Administrative Support	2.52	2.50	2.55	2.60	2.64	5.0%	2.72	2.71	2.72	2.73	2.77	2.0%
Community and Social Services	2.55	2.54	2.51	2.54	2.67	4.9%	2.98	2.98	2.97	2.97	2.94	-1.2%
Management	3.93	4.02	4.08	4.10	4.12	4.7%	4.56	4.54	4.40	4.13	5.50	20.8%
Building and Grounds Cleaning and Maintenance	2.30	2.29	2.34	2.40	2.38	3.6%	2.46	2.46	2.49	2.52	2.49	1.2%
Food Preparation and Serving Related	1.89	1.91	1.92	1.96	1.96	3.6%	2.03	2.06	2.11	2.18	2.19	7.9%
Transportation and Material Moving	3.11	3.12	3.10	3.15	3.19	2.7%	3.20	3.16	3.15	3.14	3.15	-1.5%
Education, Training and Library	3.80	3.79	3.78	3.88	3.86	1.6%	4.16	4.15	4.12	4.07	4.03	-3.1%
Farming, Fishing and Forestry	2.60	2.03	1.96	1.98	2.62	0.6%	2.47	2.45	2.46	2.45	2.44	-0.9%
Construction and Extraction	2.85	2.85	2.86	2.92	2.86	0.6%	3.15	3.18	3.17	3.20	3.19	1.2%
Health Care Practitioners and Technical	3.69	3.66	3.80	3.77	3.66	-0.8%	3.82	3.81	3.81	3.83	3.94	3.3%
Installation, Maintenance and Repair	2.86	2.86	2.87	2.86	2.83	-0.9%	2.99	2.99	2.99	2.96	2.97	-0.6%
Production	2.84	2.89	2.84	2.77	2.79	-1.7%	3.01	3.01	3.01	3.00	3.01	0.1%
Legal	5.15	5.37	5.71	4.87	4.81	-6.7%	5.56	5.39	5.24	5.03	4.92	-11.6%
Personal Care and Service	2.54	2.54	2.53	2.56	2.33	-8.0%	2.81	2.79	2.79	2.81	2.76	-2.1%

Source: Occupational Employment Survey

TABLE 3: MEDIAN WAGES BY EDUCATIONAL REQUIREMENTS, 2005

Median Wage	Educational Requirement
\$57,409	Bachelor's Degree or More
\$39,185	All Occupations
\$30,785	Associate's Degree or Less

Source: Indiana's May 2005 Occupational Employment Survey, Long-Term Occupational Projections

also may explain why the OES 90/10 ratio is significantly less than the CPS wage ratio. It might also serve to give a clearer picture of the variance in wages for typical workers, as the extremely high wage earners are taken out of the OES wage distribution. According to OES data, the national ratio was 4.65 in 2005, compared to 4.0 in Indiana. Wage variance is greater at the national level, and we can also see that the growth in variance of income has been stronger for the U.S. than in Indiana. The 90/10 ratio has increased by 3.9 percent across the nation since 2001, yet in Indiana it has only increased by 2.2 percent (see **Table 2**). The differences within each occupational group are striking. In Indiana, the wage ratio has increased the most in life, physical and social science occupations, computer and mathematical occupations, and art and media occupations. Wages in these industries have changed greatly, and the wage earners in the 90th percentile are seeing increasingly higher wages. At the national level, most of the increase in the wage ratio seems to be a result of extreme growth in the variance among wages in management occupations.

Learn More → Earn More

Remember the highly paid managers discussed earlier, in contrast to the workers in food service occupations? How many Hoosiers earn wages at these two extremes? Ten percent or approximately 11,300 managers

earn over \$139,750, while twice as many food preparation workers (approximately 25,600) earn less than \$11,750. **Table 1** includes an estimate of how many Hoosiers make the highest wages, in contrast to how many make the lowest wages. The wages are highly dependent upon not only the job title itself, but the occupational group displayed here. The three occupational groups with the highest wage earners at the 90th percentile employ approximately 14,400 workers at wages greater than \$100,000.

These wage earners include Indiana's chief executive officers, scientists and lawyers. In contrast, the three occupational groupings with the lowest wages employ approximately 59,978 Hoosiers at wages under \$13,500.

These low wage earners include many growing service sector occupations such as restaurant workers, retail sales associates and other personal care workers. In total, only 128 out of more than 750 specific occupations (2005 OES) have 90th percentile wages above \$80,000. This equates to approximately 71,800 Hoosier workers and accounts for 2 percent of total 2005 Indiana OES employment (2,891,360).

Highly specialized occupations pay higher wages as the economy influences which skills are in demand. This analysis illustrates once again that education (and/or skill development) pays. Higher education leads to higher wages. The economy has always rewarded those in the workforce with

higher levels of education and/or specialized skills. In the 21st century knowledge-based economy, the disparity in wages grows as the skills we require of our workforce continue to evolve (see **Table 3**).

To ensure higher wages for all Hoosiers, the focus at DWD continues to be on increasing the educational levels of our workforce.

Several DWD initiatives are working to close the income gap, and ensure higher wages for all Hoosiers. The state is promoting programs in science,

technology, engineering and mathematics (STEM).

The STEM initiative in Indiana includes planning grants to help high schools prepare their students for postsecondary success in STEM study and work.

An educated workforce needs quality job opportunities, so DWD and the Indiana Economic Development Corporation strive to bring quality jobs, businesses and training opportunities. Current initiatives focus on high growth industries such as advanced manufacturing, logistics and life sciences. With increased education and job growth, Indiana can hope to see higher wages—without higher levels of wage variance.

“Highly specialized occupations pay higher wages as the economy influences which skills are in demand. This analysis illustrates once again that education (and/or skill development) pays. Higher education leads to higher wages.”

Notes

1. The OES data used for this article includes workers regardless of full-time or part-time classification.
2. May 2005 OES Estimate
3. U.S. Census Bureau, Historical Income Tables: www.census.gov/hhes/www/income/histinc/ie2.html

—Allison Leeuw, Research and Analysis Department, Advanced Economic and Market Analysis Group, Indiana Department of Workforce Development