

IN the Spotlight

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setters/operators, grinding machine setters/operators, maintenance and production (M/P), punching machine setters/operators (M/P), foundry mold and core makers, and machine forming operators (M/P).

An 8% growth rate for skilled tool and die jobs between 1996 and 2006 may not appear significant, but when replacement jobs for the industry are included, another picture emerges. Table 1 shows that 17,850 — 21% of the employees working in machine shop-related jobs — will have to be replaced statewide between 1996 and 2006. Occupations experiencing the most turnover are machinists, machine forming operators, numerical control machine operators, combination machine tool setters and combination machine tool operator/tenders.

When tool and die replacements are combined with new jobs, the workforce picture becomes clearer. Between 1996 and 2006 the industry will need a total of 24,705 new and replacement workers across the state, or 29% of the 1996 tool and die workforce. This equals 2,470 jobs annually. The main reason the Hoosier

Table 1: Indiana Tool & Die Occupational Projections

	Tool & Die Workers Needed, 1996–2006	Total Tool & Die Jobs
Total tool & die jobs, 1996		85,876
Replacement jobs open due to retirement, transfer, etc., 1996–2006	17,850	
New jobs created, 1996–2006	6,855	6,855
Total new workers needed, 1996–2006	24,705	
Percent of 1996 workforce	29%	
Total tool & die jobs, 2006		92,731
Percent increase, 1996–2006		8%

Source: U.S. Bureau of Labor Statistics and Indiana Department of Workforce Development

tool and die industry may face challenges in finding skilled workers is the number of workers leaving the industry, largely due to retirement.

One reason for this may be that many tool and die jobs are connected to Indiana’s automotive industry, which is projected to experience significant retirements in the skilled trades. In 1996, there were 20,092 skilled tool and die workers employed in SIC 37 (transportation) statewide, representing approximately 23% of the state’s tool and die workforce. Although DWD does not have replacement figures at the two-digit SIC level, tool and die workers make up 23% of Indiana’s transportation sector production workforce.

Total statewide tool and die growth

and replacement figures may be even higher. Because DWD used 1996 as the base year, many new direct and indirect tool and die jobs created by Toyota in Southwest Indiana are not included; employment did not begin there in earnest until the second half of 1998. Once these numbers are included in DWD’s 1998–2008 round of occupation projections, tool and die totals may increase further.

The tool and die industry plays a vital support role in Indiana’s new economy. Filling an estimated 2,470 or more positions a year may be a challenge as the industry competes for skilled workers. With the benefit of DWD’s long-term projections, industry representatives can start to address these issues today.

IN the Details

How Jobs in Indiana Are Forecast

The Indiana Department of Workforce Development (DWD), in cooperation with the U.S. Department of Labor, recently released its forecast estimating the kinds of jobs that will be found in Indiana in the year 2006. This

forecast projects the number of jobs in each occupation within each industry for the period 1996–2006. The projections are developed using a four-step process that builds off of 1996 data. The first step in preparing the projections is completing the

Indiana Occupational Employment Statistics (OES) survey, which provides current estimates of occupational employment by industry. A sample of establishments in the nonfarm wage and salary sectors of
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Midwest Turnaround

The years from 1978 to 1988 were difficult for the Midwestern states. Indiana and its four neighboring states, plus

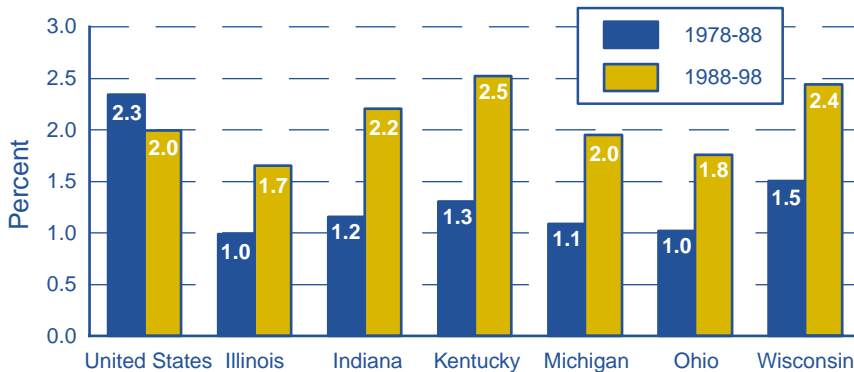
Wisconsin, added private sector jobs at an average annual rate of just 1.1% during those years, while the nation enjoyed a 2.3% annual increase. But the picture has changed. In the subsequent 10 years, 1988 to 1998, both the nation and this six-state region have seen jobs grow at a 2% average annual rate.

While every state in the region witnessed a bounce back in private sector employment growth (see Figure 1), the experience is far from uniform. Indiana, Kentucky and Wisconsin, the three smallest states of the region, have been the leaders in recovery, each topping the nation's 2% growth rate. The larger states (Illinois, Michigan and Ohio) have been lagging.

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Figure 1: Average Annual Percent Change in Employment, by State

Midwest outperformed the nation



Source: U.S. Bureau of Economic Analysis

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the economy is surveyed over a three-year period to obtain employment levels by occupation. There are 75 industries from the Standard Industrial Classification system at the two-digit level, and more than 700 occupations. The next set of projections, through 2008, will be issued later this year and will use industry data at the three-digit SIC level for about 400 industries.

Industry/Occupation (I/O) Matrix

The next step is to create the industry/occupation matrix, which presents the occupational staffing patterns of each industry. It tabulates

employment cross-classified by industry and occupation.

Industry Projections

Projecting the growth and decline of individual industries is the third step in preparing the forecast. Changes in industry structure will affect the growth and decline of the occupations needed to staff those industries.

Statewide annual average employment projections are produced for each industry based on statistical analysis of data from DWD, BLS and the U.S. Census Bureau. In addition, qualitative information from local and state labor market analysts is used to adjust industry projections.

Occupational Employment Projections

The last step is to forecast employment demand by occupation within each industry using the I/O matrix. Statewide estimates are developed for the base year (1996) and projected to the year 2006. They take into account factors, developed by BLS, that estimate changes in industry staffing patterns brought about by new technology and changing business practices.

The projected estimates include annual net job openings caused by both new demand due to growth and replacement needs. Average net openings for each occupation are the sum of growth demand and

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replacement needs. Replacement needs are the average number of workers who retire or leave their occupation to enter a new occupation.

The projected data reflect studies of past and present industrial trends. They illustrate what is likely to happen, barring major changes from past trends. The forecast assumes that no major events, such as widespread or long-lasting energy shortages, other price shocks, or major wars will

significantly alter the economy's industrial structure or economic growth rates. Current political, institutional, social, technological and scientific trends are also assumed to continue without significant changes. Readers should view the estimates of projected employment as indicators of relative magnitude and probable direction rather than as estimates of absolute values. Therefore, consider the projections only a starting point when studying future industry and occupational employment.

IN Depth:

For all the latest state and county figures and complete time series data sets related to the Indiana economy, visit the following Internet sites:

- www.ibrc.indiana.edu/incontext
- www.stats.indiana.edu
- www.indianacommerce.com
- www.dwd.state.in.us

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