

## A Manufactured Myth: Why Claims of a “Skills Gap” in Illinois Manufacturing are Wrong

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## Introduction: The “Skills Gap”

*“Eighty percent of the manufacturing companies in the United States say they cannot find enough workers with the proper skills to fill open positions at their facilities.”*

*—President Barack Obama, announcing the Military-to-Civilian Skills Certification Program in June of 2012*

Many corporate executives and politicians in Illinois purport that the state’s workforce does not have the skills necessary to compete in the modern economy. According to the conventional wisdom thousands of job openings go unfilled each month because people looking for a job allegedly lack the skills that employers need. Many employers contend that jobs are readily available and that the main reason that workers remain unemployed is that they are unqualified. One executive, Tim Sullivan, the former CEO of Bucyrus International, Inc. and special advisor to Wisconsin Governor Scott Walker, even went so far as to assert that states “don’t have a jobs crisis, we have an education crisis” (Levine, 2013).

Nationwide, manufacturers have also made this claim. A 2011 report by the Manufacturing Institute and Deloitte alleged that there are about 600,000 unfilled job openings in manufacturing across the United States, and the primary cause is a shortage of skills among American workers (Morrison et al., 2011). In a national survey of 1,123 manufacturing executives, 74 percent responded that a lack of skilled workers was making their firm less productive or was hindering their ability to expand production (Morrison et al., 2011). The general consensus of a skills gap in the manufacturing industry has even reached the highest level of U.S. government, with President Obama echoing the concerns of manufacturers.

In Illinois, *The Illinois Manufacturer* reported in its Spring 2012 issue that there is “a skills shortage, as evidenced by the... jobs that are open today” (Harris, 2012). While sequestration is forcing the federal government to cut \$16.7 million in funding to Illinois for workforce development programs in 2013, Governor Pat Quinn partnered with manufacturers to provide public funds to launch the Manufacturers Education Initiative, as a way to resolve the supposed crisis (Soberman, 2013).

However, while employers are claiming a skills gap, the Illinois economy is simultaneously experiencing sluggish growth with only slightly improved prospects for robust job placement. Indeed, the following labor market outcomes have not returned to pre-recession levels in Illinois: real wages, labor force participation rates, the working-age unemployment rate, hours worked per week, full-time employment status, the poverty rate, and the percentage of Illinois residents with health insurance (Manzo & Bruno, 2013).

Contrary to perception, there is little labor market evidence of a “skills gap” in Illinois for manufacturing workers. Relying on a multi-year examination of state data covering employment projections, worker credentials, job openings, wages, and hours worked, this briefing paper refutes the skills gap contention. Instead, the main problem facing the Illinois economy remains weak aggregate demand. The primary public policy focus should thus be accelerating economic growth, promoting high-quality job growth, and raising worker wages. Scarce public resources should not be diverted away from these aims and spent on solving a problem that does not exist.

## **1. Employment Projections**

### **Deteriorating Job Prospects for Manufacturing Workers**

Data from the 2011 American Community Survey report that there are roughly 6 million workers in Illinois. The manufacturing industry employs 742,023, or 12.5 percent, of these workers. Relative to the United States economy as a whole, of which 10.4 percent of jobs are in manufacturing, Illinois specializes in manufacturing. In Illinois, manufacturing firms have access to large and integrated markets, raw materials, and a highly educated workforce. Illinois is also the only location in the Western Hemisphere that maintains access to all six transcontinental freight rail lines.

Unfortunately, the number of production workers in Illinois is expected to decline by 0.8 percent by 2020, with the largest losses experienced by workers in the printing industry, first-line supervisors, and cutting and press machine setters/operators (Table 1). Manufacturing occupations expected to grow during this time period include team assemblers, computer-controlled machinery tool operators, welders, and helpers. The trend toward a shrinking manufacturing sector in Illinois suggests that expanding production firms will have a pool of displaced workers who are experienced in manufacturing from which to hire new workers. It is also noteworthy that the average 2012 wage of the five fastest-growing manufacturing occupations is just \$16.07 compared to \$19.71 for the five most-shrinking jobs.

Table 1: Projected Job Growth in Illinois' Manufacturing Sector, 2010-2020

<b>Manufacturing Occupations by Projected Job Growth in Illinois, 2010-2020</b>			
<b>Occupation</b>	<b>New Jobs</b>	<b>Percentage Growth</b>	<b>2012 Wage</b>
Team Assemblers	1,461	2.3%	\$14.40
Computer-Controlled Machinery Tool Operators	1,128	14.4%	\$18.03
Welders	867	6.1%	\$18.19
Production Helpers	833	3.8%	\$12.16
Inspectors, Testers, Sorters, Samplers, & Weighers	539	3.0%	\$17.58
Prepress Technicians and Workers	-812	-33.9%	\$21.33
Cutting and Press Machine Setters/Operators	-853	-5.4%	\$14.56
First-line Supervisors & Managers	-937	-3.6%	\$28.01
Print Binding & Finishing Workers	-939	-26.1%	\$16.74
Printing Press Operators	-2,520	-22.1%	\$17.89
<i>All Production Occupations</i>	<i>-4,644</i>	<i>-0.8%</i>	<i>\$16.86</i>

Source: The Illinois Department of Employment Security, *Employment Projections for 2010-2020*.

During the next decade, job opportunities are expected to be most prevalent in Illinois in the service sector (Table 2). Job growth is projected to be highest for food and beverage serving workers, school teachers, health diagnosing and treating practitioners, computer specialists, and business operations specialists. If to some extent a skills gap does exist, it may be that the cause is simply due to rational decision-making by Illinois workers. A rational high-skilled individual may choose to pursue a career in or degree related to for example, the computer specialist, business operations specialist, information and record clerk, construction trades, or health technologist and technician occupations. Each of those jobs, respectively, is projected to expand faster compared to the manufacturing industry as a whole. Moreover, each is compensated at a higher level than both the average production worker (\$16.86) and the fast-growing manufacturing jobs such as computer-controlled machinery tool operators (\$18.03), welders (18.19) and inspectors, testers, sorters, samples, and weighers (\$17.58). Proponents of a skills gap are therefore confronted with the following question: why would a rational, high-skilled individual seek employment in manufacturing when both job opportunities and his or her wage are likely to be smaller?

Table 2: Projected Illinois Job Growth, 2010-2020

<b>Top 15 Occupations by Projected Job Growth in Illinois, 2010-2020</b>			
<b>Occupation</b>	<b>New Jobs</b>	<b>Percentage Growth</b>	<b>2012 Wage</b>
Food & Beverage Serving Workers	42,209	17.8%	\$10.36
School Teachers	39,229	18.9%	\$28.50
Health Diagnosing & Treating Practitioners	31,097	14.5%	\$41.52
Computer Specialists	25,867	19.8%	\$31.79
Business Operations Specialists	23,813	11.3%	\$32.76
Nursing, Psychiatric, & Home Health Aides	19,065	19.7%	\$11.61
Retail Sales Workers	17,372	5.0%	\$12.19
Financial Specialists	15,730	14.2%	\$35.95
Cooks & Food Preparation Workers	15,480	13.2%	\$10.29
Information & Record Clerks	15,436	7.4%	\$17.92
Personal Care & Service Workers	15,346	15.9%	\$12.18
Building Cleaning & Pest Control Workers	14,522	9.4%	\$12.81
Construction Trades Workers	13,893	7.2%	\$19.09
Health Technologists & Technicians	12,605	11.3%	\$21.44
Financial Clerks	11,958	9.1%	\$18.93
<i>All Occupations</i>	<i>517,102</i>	<i>8.6%</i>	<i>\$22.68</i>

Source: The Illinois Department of Employment Security, *Employment Projections for 2010-2020*.

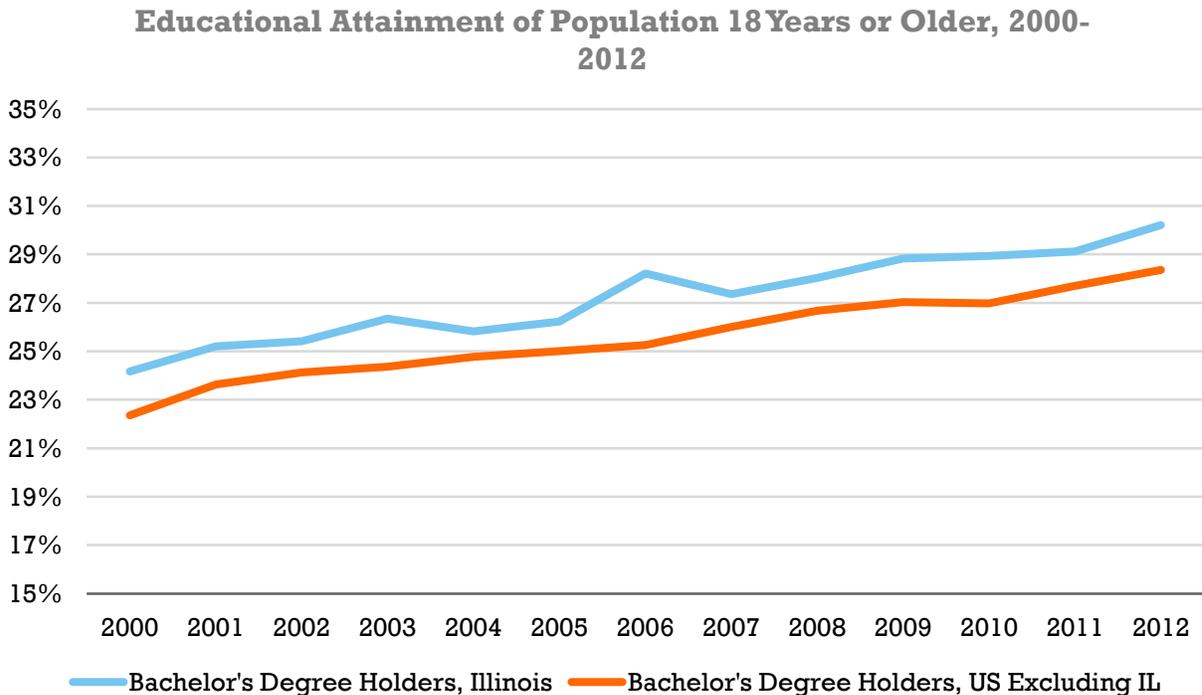
## 2. Worker Credentials

### Human Capital is Constantly Increasing in Illinois

A skills gap could conceivably exist if the working-age population is becoming less educated over time, particularly in comparison to the average manufacturing worker. For the state of Illinois, however, this is not the case (Figure 1). Since 2000, the percentage of the Illinois population 18 years or older with at least a high school degree has steadily increased by 5.2 percentage points, from 82.0 percent to 87.2 percent. A similar increase has occurred in the rest of the United States, from 81.9 percent in 2000 to 86.4 percent in 2012. The fraction of the population 18 years or older in 2000 who held a bachelor's degree or more was 24.2 percent compared to 22.4 percent in the rest of the United States excluding Illinois. But twelve years later, with state school tuition rising above inflation and public spending on higher education falling, those numbers have risen to 30.2 percent and 28.4 percent,

respectively. Illinois workers are increasingly becoming more highly educated and remain more highly educated than the rest of the American population.

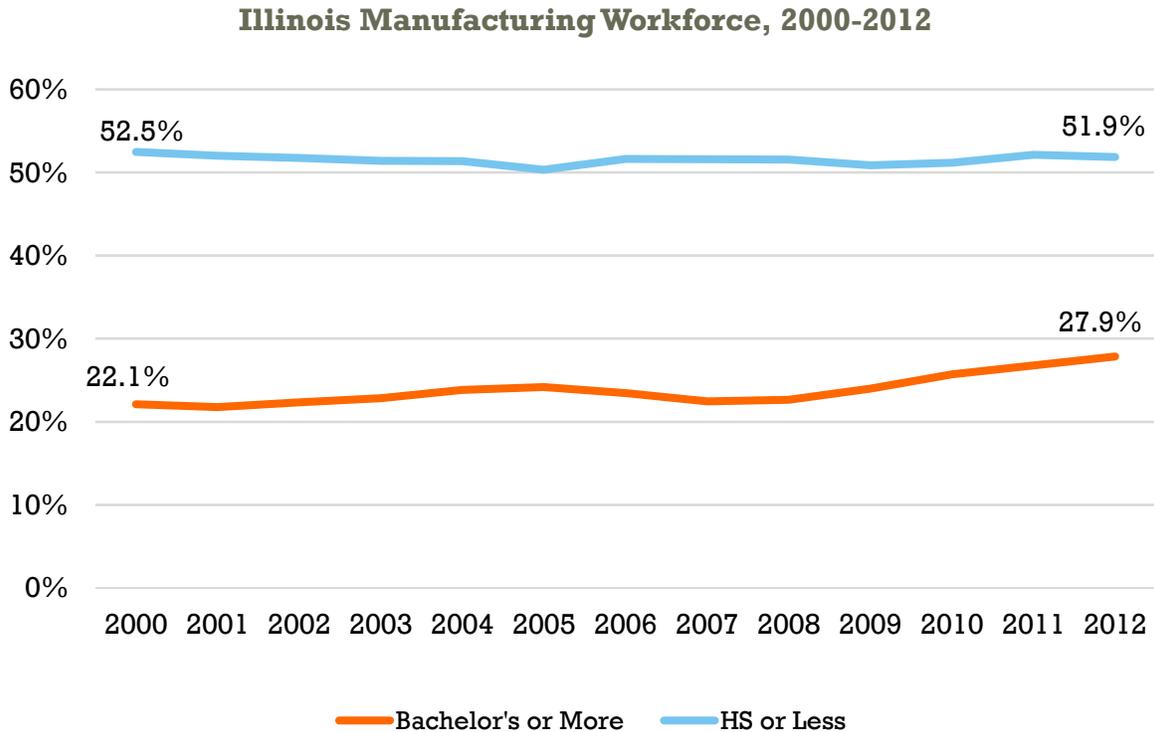
Figure 1: The Increasing Educational Attainment of the Illinois and US Population



Source: Author's analysis of Integrated Public Use Microdata Series – CPS (Census) for 1995-2012, one-year data for the Illinois sample. Data include 87,826 total observations. The data also include 4,345 observations of manufacturing workers in Illinois since 2003.

The share of the manufacturing workforce with a bachelor's degree or more has also risen since 2000, from 22.1 percent to 27.9 percent last year (Figure 2). However, the fraction of manufacturing workers with at least a bachelor's degree is smaller than the comparable fraction of all Illinois residents (30.2 percent). Additionally, the percentage of manufacturing industry workers with a high school degree or less has remained constant, from 52.5 percent to 51.9 percent over the same time. This change is not statistically significant, and indicates that much manufacturing work remains reserved for low-skilled employees. Each of these findings suggests that a skills gap is unlikely, as the manufacturing workforce in Illinois is slightly less-educated than the larger working-age Illinois population. All data point to constantly increasing human capital in Illinois, a state with higher educational attainment than 38 other states (National Center for Education Statistics, 2011). In short, there is no evidence that Illinois is at a competitive disadvantage in terms of human capital compared to other states.

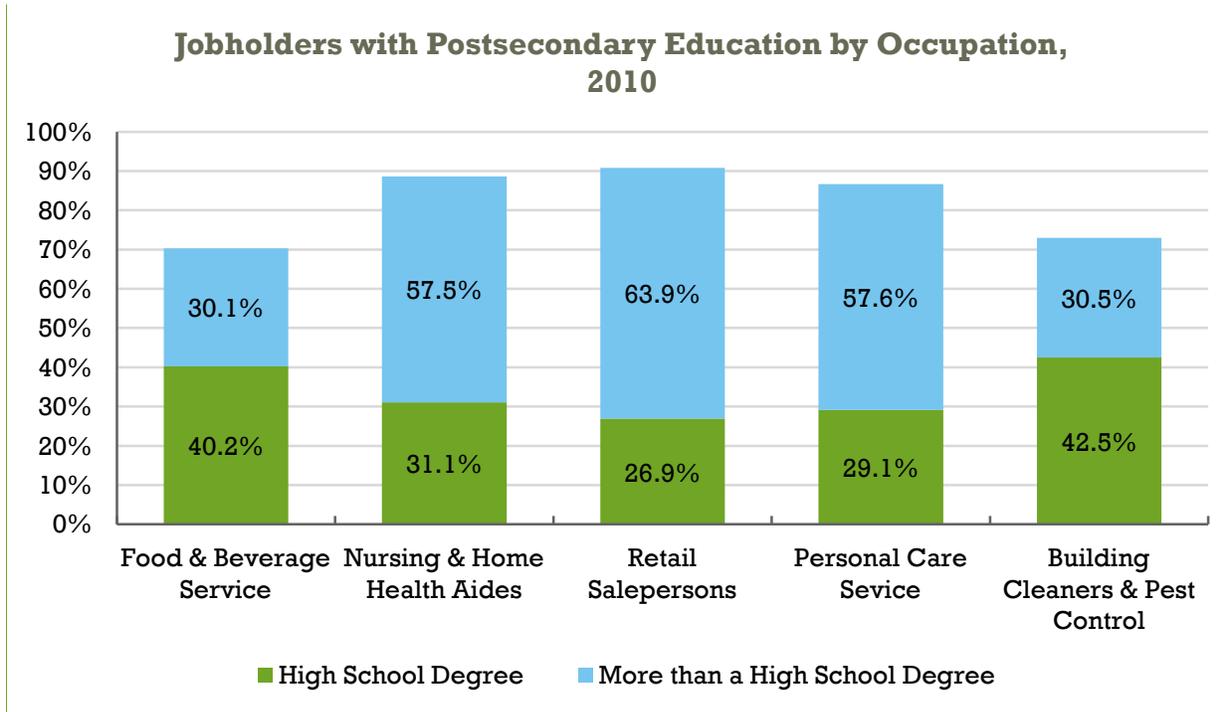
Figure 2: Illinois Manufacturing Workers by Educational Over Time



Source: Author's analysis of Integrated Public Use Microdata Series – CPS (Census) for 1995-2012, one-year data for the Illinois sample. Data include 87,826 total observations. The data also include 4,345 observations of manufacturing workers in Illinois since 2003.

Rhetoric that there is a talent shortage in Illinois is also inconsistent with the realities of the state labor market (Figure 3). Claims that there are too few college graduates are contradictory to the large numbers of *underemployed* workers in Illinois with college degrees. In five of the fastest-growing occupations throughout the state which require a high school degree or less, large fractions of the workers have a college degree. At the national level, 20.0 million out of 41.7 million (47.9 percent) working college graduates are actually employed in jobs which require less than a bachelor's degree (Vedder et al., 2013). These numbers illustrate that the problem is not a skills problem, but rather a weak job creation problem, as highly-educated workers would not choose to work in low-skill, low-pay occupations if there were an abundance of available high-skill manufacturing jobs.

Figure 3: Underemployment of Illinois Workers in Select Occupations



Source: 2010 American Community Survey 5-Year Estimates with EEO Tabulations for Illinois.

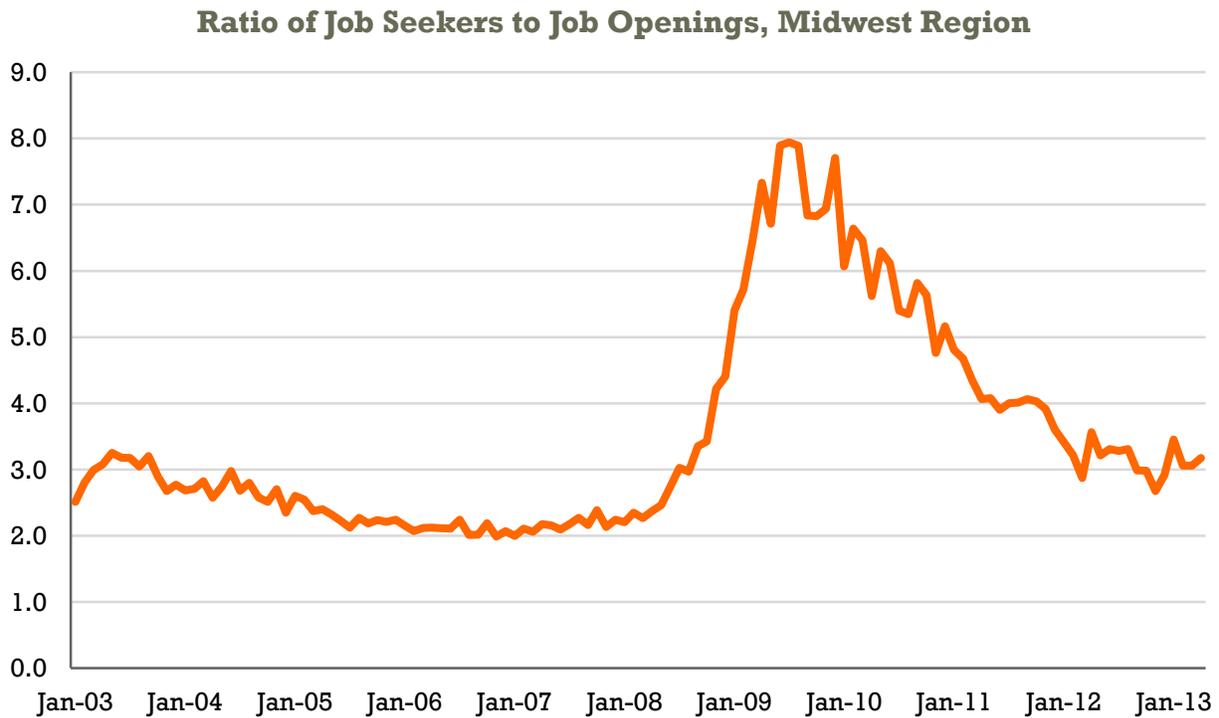
### 3. Job Openings

#### The Slack Labor Market is the Problem

As noted earlier, a 2011 paper by the Manufacturing Institute and Deloitte reported that there are about 600,000 unfilled job openings in manufacturing across the nation (Morrison et al., 2011). Manufacturers point to this estimate to claim a severe shortage of skilled workers. But even if this claim is true, there are still far more qualified unemployed Americans representing a large pool of potential workers from which manufacturing employers can recruit. For the Midwest region, in April of 2013, there were 3.2 job seekers for each job opening, across all industries (Figure 4).<sup>1</sup> From 2004 to 2007, during good economic times, the average monthly ratio of unemployed workers to job openings for the Midwest was 2.3. That ratio jumped up to an average of 7.0 in 2009, peaking as high as 7.9 in July of that year. The metric has slowly declined since its peak, but, at 3.2, remains above pre-recession levels.

<sup>1</sup> The Midwest region, as defined by the Bureau of Labor Statistics, includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

Figure 4: Weak Aggregate Demand for Labor in Midwest States



*Source: Author's analysis of United States Department of Labor Bureau of Labor Statistics data. Data include monthly estimates from the Job Openings and Labor Turnover Survey and on unemployment persons, in the Midwest. Estimates of both job openings and unemployed persons are seasonally-adjusted.*

Unfortunately, the unemployment rate is higher in Illinois than in neighboring states (Manzo & Bruno, 2013), and the ratio of job seekers to job openings in the state is thus likely larger than the rest of the Midwest region. Table 3 reports the respective shares of the unemployment pool and manufacturing workforce by level of education over the course of the recession and recovery. Assuming that the breakdown of the unemployment pool by educational attainment in April of 2013 relatively matched that of the past few years, an estimated 138,873 unemployed individuals have a college degree in Illinois, out of about 601,500 unemployed residents. Assuming also that in April of 2013 the educational requirements of new manufacturing job openings aligned with that of the extant manufacturing workforce, an estimated 3,330 out of about 10,600 job openings required a college degree. In Illinois, there are dozens of college-educated potential job seekers per manufacturing job opening (Table 3).

**Table 3: Unemployment Pool and Manufacturing Job Openings by Education**

Educational Degree	2008-2012 Share of the Unemployed	Estimate of the Unemployed, April 2013	2008-2012 Manufacturing Workforce	Manufacturing Job Openings Estimate, April 2013	Total Seekers to Manufacturing Openings
Less than high school	21.8%	131,269	14.7%	1,556	<b>84.4</b>
High school	34.7%	208,910	36.8%	3,903	<b>53.5</b>
Some college	20.4%	122,464	17.0%	1,806	<b>67.8</b>
Associate's	7.1%	42,422	6.0%	639	<b>66.4</b>
Bachelor's	11.0%	66,435	17.1%	1,811	<b>36.7</b>
Advanced	5.0%	30,016	8.3%	880	<b>34.1</b>

*Source: Author's analysis of United States Department of Labor Bureau of Labor Statistics data on the "Illinois Economy at a Glance" from 2007 to 2013. Estimates on the share of those who are unemployed and those who work in manufacturing by education are the author's analysis of Integrated Public Use Microdata Series – CPS (Census) for 1995-2012, one-year data for the Illinois sample. The estimates are imputations based on both datasets.*

Of course, not all job seekers are looking to work in manufacturing. College graduates with degrees varying from education to art to kinesiology are likely not looking to work in the manufacturing industry. But manufacturing jobs make up 12.5 percent of the total employed workforce in Illinois. If we estimate that 12.5 percent, plus or minus 3.0 percent, of the unemployed are *interested* in working in a manufacturing job, the high ratio of job seekers per manufacturing job opening does not support the notion of a skills shortage. Table 4 reports these estimates. While it is evident that as the degree required for the job becomes more advanced, the number of seekers per opening declines, at a minimum, using very conservative assumptions, there are at least 3.2 seekers per manufacturing job opening in Illinois today (Table 4). The underlying labor market problem clearly remains low aggregate demand in the state economy, and claims of a skills gap appear to be exaggerated. The demand for skilled labor does not exceed the supply of highly-educated workers.

Table 4: Estimated Job Seekers Per Manufacturing Job Opening in 2013

<b>Educational Degree</b>	<b>Job Seekers Per Manufacturing Job Opening</b>
Less than high school	8.0 - 12.7
High school	5.1 - 8.0
Some college	6.4 - 10.2
Associate's	6.3 - 10.0
Bachelor's	3.5 - 5.5
Advanced	3.2 - 5.1

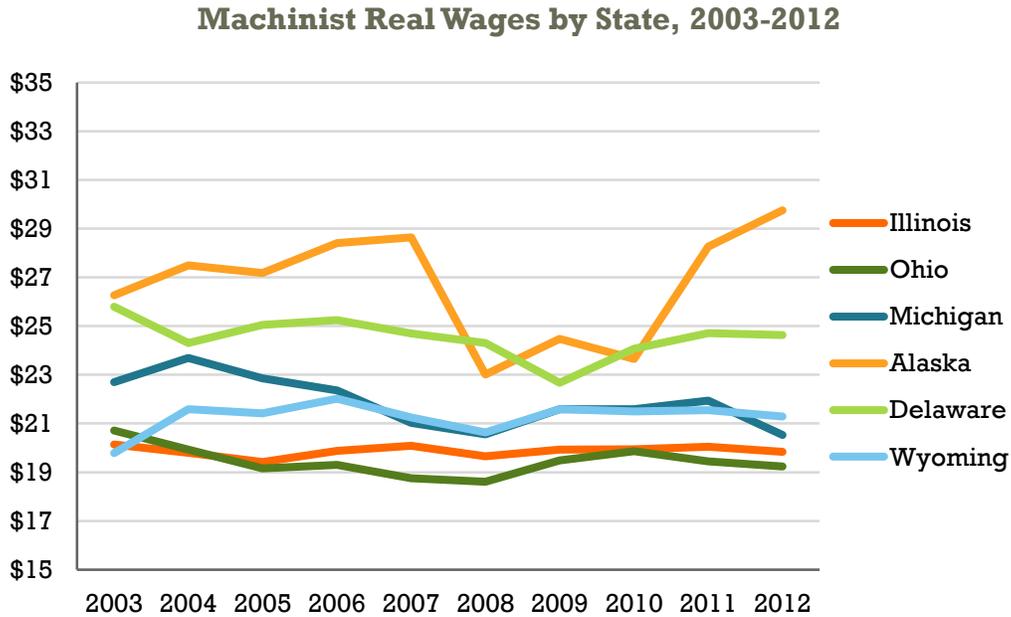
Source: Author's analysis of United States Department of Labor Bureau of Labor Statistics data on the "Illinois Economy at a Glance" from 2007 to 2013 and the Integrated Public Use Microdata Series – CPS (Census) for 1995-2012, one-year data for the Illinois sample.

## 4. Wages

### Declining Wages Undermine Skills Gap Logic

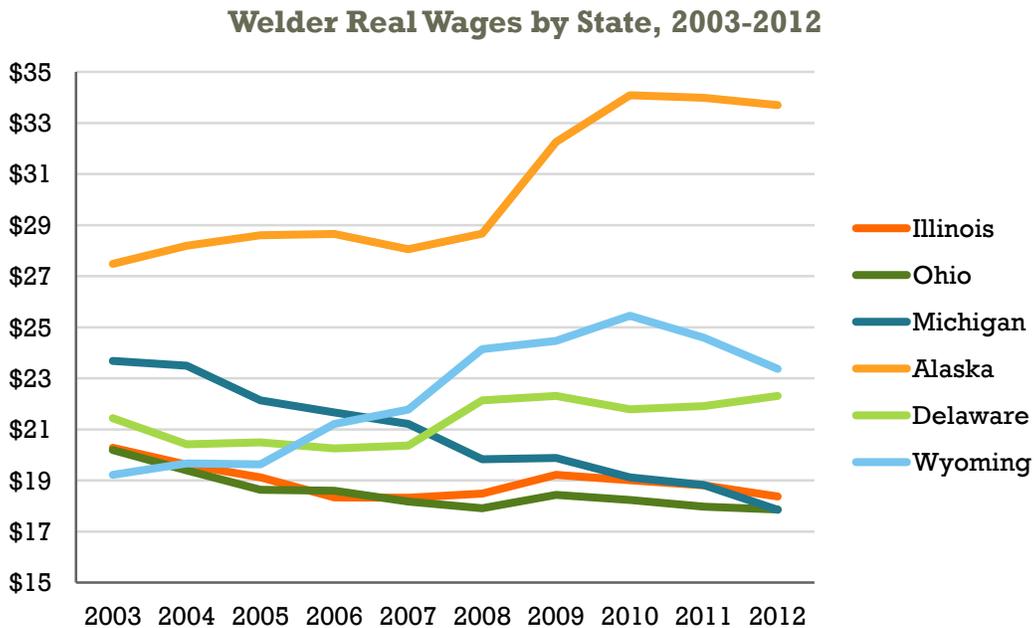
If there is an increasing skills gap in Illinois, the demand for skilled workers would exceed the available supply in Illinois and the mismatch would be growing. Economics predicts that a labor market operating under those conditions will result in rising wages. In Illinois, real wages (i.e., adjusted for 2013 dollars by the consumer price index) have been stagnant or declining for manufacturing occupations. In 2003, the real wages of machinists and welders were respectively \$20.14 and \$20.28 in Illinois (Figure 5 and Figure 6). In 2012, they had fallen to \$19.84 for machinists and \$18.37 for welders. A similar trend has occurred for Ohio manufacturing workers, with a more noticeable decline in real wages for Michigan employees. However in states such as Alaska, Delaware, and Wyoming, where manufacturing is growing and unemployment is low relative to Illinois and the greater Midwest, machinist and welder wages, which in general were already higher in 2003 than in Illinois, have risen. Thus, a skills gap story would potentially be more believable in these states, but is unconvincing for Illinois.

Figure 5: Stagnant Real Wages of Illinois Machinists



Source: Author's analysis of United States Department of Labor Bureau of Labor Statistics data on Occupational Employment Statistics. Wages are in constant 2013 dollars after being adjusted by the Consumer Price Index.

Figure 6: Declining Real Wages of Illinois Welders



Source: Author's analysis of United States Department of Labor Bureau of Labor Statistics data on Occupational Employment Statistics. Wages are in constant 2013 dollars after being adjusted by the Consumer Price Index.

## 5. Hours

### Shorter Workweeks Refute the Skills Shortage

If a skills gap exists, average hours worked by manufacturing employees should increase substantially. If manufacturers cannot find qualified employees to fill job openings, economic thought predicts that firms would extract more hours from their current skilled workers. While the average workweek for manufacturing workers in Illinois is increasing, it still remains shorter than before the recession began (Figure 7). In 2007, the usual number of hours worked per week was 41.4 for manufacturing employees. In 2012 that figure was just 38.9 hours.

Figure 7: The Average Workweek for Manufacturing Workers in Illinois, 2003-2012



Source: Author's analysis of Integrated Public Use Microdata Series – CPS (Census) for 1995-2012, one-year data for the Illinois sample.

## Why Are Employers Claiming a Skills Gap?

The evidence for a mismatch in the skills that job seekers have and the skills firms demand for new positions is unconvincing in the Illinois case. Why, then, did *The Illinois Manufacturer* report that Illinois has “a skills shortage, as evidenced by the... jobs that are open today” in its Spring 2012 issue? (Harris, 2012). There are four reasons that manufacturing executives might be projecting that there is a skills crisis in their industry.

**1. The Diversion Story:** Suggesting that the cause of inequality and joblessness is deficiencies in worker skillsets diverts blame from those responsible onto workers. Narayana Kocherlakota, president of the Federal Reserve Bank of Minneapolis, explained that the skills gap story “is very comfortable reasoning for the very comfortable class. It identifies ‘failing’ schools and dumb workers for the economic calamity actually caused by a deregulated financial sector following a massive redistribution of income and wealth” (Mishel, 2011). In this explanation, the upper class is acting in its own interests by transferring blame onto workers.

**2. The Groupthink Story:** Illinois manufacturers may also be yielding to a degree of groupthink. It could be true that a skills gap does exist in other states where unemployment is lower, the fraction of the population with a college degree is lower, and wages are lower. Illinois manufacturers may be parroting the concerns of their counterparts in the few states where there is a skills shortage. On both a national scale and in the state of Illinois, however, there are still hundreds of thousands of skilled individuals who are out of work or have been displaced from their manufacturing job.

**3. Increased Supply Lowers Labor Costs:** Manufacturers have an incentive to declare a skills shortage to increase the supply of workers, providing access to a continuous pool of skilled workers. An enlargement in the number of high-skilled workers improves job match and worker productivity. But while employers want to increase their workforce’s skills, they also want to reduce labor costs. An increase in the supply of skilled workers without significant industry job growth achieves this aim, lowering average wages and commodifying labor. It should be noted that investing in Illinois workers is not a bad thing. When doing so, however, comes at the cost of diverting money away from job growth, public officials must make reasoned cost-benefit policy decisions.

**4. Transfer of Training Costs:** The final reason that manufacturing executives would report in surveys that there is a skills gap is that they have an incentive to lie. In propagating a skills gap myth and claiming unemployment is structural, employers are asking the federal, state, and local governments to fund more training programs and enroll more workers in manufacturing-specific programs. Manufacturers are lobbying to socialize the costs of training workers for their industry. Instead of

hiring workers with the right educational qualifications and building a worker's skillset privately, employers are looking to expand taxpayer-supported programs such as the Employer Training Investment Program, the Manufacturers Education Initiative, and various other tax credits. Such expansions redirect scarce public funds away from solving the gravest labor market issue in Illinois today, the jobs crisis, to a fabricated problem which benefits a private industry at society's expense.

## **Conclusion and Opportunities for Future Research**

In Illinois today, the evidence overwhelmingly points to skepticism about the alleged "skills gap." While the state's economy has improved and a skills gap may arise as the unemployment pool shrinks to normal levels, labor market outcomes in Illinois remain in worse condition than before the Great Recession. Certainly the state needs more highly-skilled and highly-educated workers over the long-term. But it is unreasonable and disingenuous to suggest that 10,000 to 20,000 manufacturing job openings are going unfilled in Illinois because none of the state's 601,500 unemployed residents or millions of underemployed workers has the skillset to perform the work. Right now, the problem remains weak aggregate demand. Public policies should thus focus on accelerating economic growth, promoting high-quality job creation, and raising worker wages rather than serving the interests of a particular private industry at the expense of the taxpayers.

This LEP briefing paper draws on extant research pertaining to the skills gap and develops conclusions for the Illinois manufacturing industry. As manufacturing remains vital to Illinois, further research on this topic could explore a number of related factors impacting the state's economy. This research includes, but is not limited to: the effect of union density and the right to collectively bargain on worker formation of human capital skills, changes in firm spending on worker training over time, increases or decreases in public subsidies of workforce development activities, and the declining share of education dollars spent on vocational and technical programs.

## Sources

- Harris, Mark. (2012). "Solving the Manufacturing Skills Shortage." *The Illinois Manufacturer*. Mr. Harris is Deputy Chief of Staff, Office of Illinois Governor Pat Quinn, at <http://www.ima-net.org/storage/Spring%202012%20issue.pdf>.
- Levine, Marc. (February 2013) *The Skills Gap and Unemployment in Wisconsin: Separating Fact from Fiction*. The University of Wisconsin-Milwaukee Center for Economic Development, at [http://www4.uwm.edu/ced/publications/skillsgap\\_2013-2.pdf](http://www4.uwm.edu/ced/publications/skillsgap_2013-2.pdf).
- Manzo IV, Frank and Robert Bruno. (9 July 2013). *The State of Working Illinois 2013: Labor In the Land of Lincoln*. The University of Illinois School of Labor and Employment Relations Labor Education Program, at [http://www.ler.illinois.edu/labor/images/State%20of%20Working%20Illinois\\_Final%20LEP%20Version.pdf](http://www.ler.illinois.edu/labor/images/State%20of%20Working%20Illinois_Final%20LEP%20Version.pdf).
- Mishel, Lawrence. (7 February 2011). "The Overselling of Education." *The American Prospect*, at <http://prospect.org/article/overselling-education-0>.
- Morrison, Tom, et al. (2011). *Boiling Point?: The Skills Gap in U.S. Manufacturing*. Deloitte and the Manufacturing Institute, at <http://www.themanufacturinginstitute.org/~media/A07730B2A798437D98501E798C2E13AA.ashx>.
- National Center for Education Statistics. (2011) "Table 12. Percentage of persons age 25 and over with high school completion or higher and a bachelor's or higher degree, by race/ethnicity and state: 2007-09." *Digest of Education Statistics*, at [http://nces.ed.gov/programs/digest/d11/tables/dt11\\_012.asp](http://nces.ed.gov/programs/digest/d11/tables/dt11_012.asp).
- Soberman, Jessica. (7 March 2013). "Skills Gap to Widen as Job Training Programs Face Drastic Cuts." *Medill Reports – Chicago*. Northwestern University, at <http://news.medill.northwestern.edu/chicago/news.aspx?id=218043>.
- Vedder, Richard, Christopher Denhart, and Jonathan Robe. (24 January 2011). *Why Are Recent College Graduates Underemployed?: University Enrollments and Labor Market Realities*. Center for College Affordability and Productivity, at <http://centerforcollegeaffordability.org/uploads/Underemployed%20Report%202.pdf>.

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## Data Appendix

Integrated Public Use Microdata Series (IPUMS) of the Current Population Survey (CPS). Miriam King, Steven Ruggles, J. Trent Alexander, Sarah Flood, Katie Genadek, Matthew B. Schroeder, Brandon Trampe, and Rebecca Vick. Integrated Public Use Microdata Series, Current Population Survey: Version 3.0. Minneapolis: University of

Minnesota, 2010, at <http://cps.ipums.org/cps/>. The CPS is a monthly U.S. household survey conducted jointly by the U.S. Census Bureau and the Bureau of Labor Statistics. All data analyzed using STATA Data Analysis and Statistical Software.

2011 American Community Survey by the United States Census Bureau. Data are three-year estimates and were obtained through the American Factfinder database at <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>.

2010 American Community Survey by the United States Census Bureau were used for the data on Illinois underemployment. Data are five-year (2006-2010) estimates and were obtained through the American Factfinder database at <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>. 2006-2010, and are cross-tabulated with Equal Employment Opportunity (EEO) tabulations at <http://www.census.gov/people/eetabulation/data/eetables20062010.html>.

2010-2020 Employment Projections for the State of Illinois. Estimates by the Illinois Department of Employment Security obtained in June 2013 from <http://www.ides.illinois.gov/page.aspx?item=3528>.

Illinois Economy at a Glance. U.S. Department of Labor, Bureau of Labor Statistics. Data obtained in June 2013 were projections for April 2013 and have since been updated, but only slightly. Newest data extracted on 9 July 2013 are available at <http://www.bls.gov/eag/eag.il.htm>.

Occupational Employment Statistics for the U.S. states are May estimates from 2003 to 2012. Estimates by the U.S. Department of Labor, Bureau of Labor Statistics were obtained in June 2013 from <http://www.bls.gov/oes/#data>.

Job Openings and Labor Turnover Survey data for the Midwest from January 2003 to April 2013 are estimates by the U.S. Department of Labor, Bureau of Labor Statistics. Data are seasonally-adjusted estimates and were obtained in June 2013 from <http://www.bls.gov/jlt/>.

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