MINNESOTA ECONOMIC

TRENDS

MINNESOTA'S CRAFT BEER RENAISSANCE

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Department of Employment and Economic Development

Skol, Minnesota

Minnesota has a rich beer-making tradition, with the state at one time being home to more than 120 breweries. Pummeled by Prohibition, the Great Depression, industry consolidations and competition from national brands, the state's breweries had declined to four by the 1980s.

Thanks to the emergence of today's craft brewers, though, the industry is making a major comeback in Minnesota. Jan Saxhaug's cover story in this issue of Trends puts the latest count of state brewers at 65, including operations with hard-to-forget names like Bent Paddle Brewing in Duluth, Junkyard Brewing in Moorhead and Pour Decisions Brewing in Roseville.

As Saxhaug puts it, long gone are the days when companies like Hamm's, Grain Belt and Schmidt ruled the Minnesota brewing scene. Nowadays, craft beer is king, and the economic impact of the craft brewing industry is growing larger by the year.

How big? Well, beer production in the state has grown 83 percent in the last decade, climbing from 218,691 barrels in 2003 to 390,962 barrels in 2012. While the beer-brewing business can't be considered a major employer in the state, the number of people working in the industry has doubled in recent years, growing from 250 in 2004 to about 500 last year. Many people, like Summit Brewing founder Mark Stutrud, think there's room for even more growth.

It's an intriguing story and the first time, I'm guessing, that Trends has featured a glass of beer on its cover.

This issue also includes stories on the latest Hiring Difficulties Survey (this time on manufacturing), the evolving job mix in Minnesota, employment in the state's 25 largest cities, and the number of jobs and types of industries that would be affected by raising the minimum wage.

There's a little bit of something for everybody in this issue. We hope you enjoy it.

Monte Hanson
Editor

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Jan Saxhaug

Roll Out the Barrels

Minnesota's burgeoning craft beer industry produced nearly 391,000 barrels last year — an 83 percent increase in the past decade.

Earlier this year, Duluth Mayor Don Ness proclaimed the city to be the "Craft Beer Capital" of Minnesota. While somewhat tongue in cheek, the proclamation was grounded in the reality that Duluth, along with the rest of the state and country, is undergoing a craft beer renaissance.

In fact, 2,538 breweries are operating nationwide — the most in the United States since 1887. Sixty-five of those breweries are in Minnesota, and a wider audience is starting to take notice. In a 2011 story headlined "A Midwest Beer Tour to Cure the Winter Blues," the New York Times highlighted the explosion of new breweries along the western tip of Lake Superior, likening the Northland's brewery scene to a "north woods Napa Valley for the beer tourist."

PHOTO: DARIN BAINTER

Lake Superior Brewing's Don Hoag says competition is increasing awareness of locally made beers.

One Minnesotan who is not surprised about the craft beer boom is Don Hoag. Hoag is founder and co-owner of Lake Superior Brewing Co., a Duluth microbrewery that opened its doors back in 1994. According to Hoag, while Minnesota is home to a strong brewing tradition dating back to the 19th century with companies such as Schmidt, Grain Belt and Hamm's, the craft brewing industry of today is built on the trend to consume locally.

"There's just a growing sense of pride about things that are made locally," Hoag said. "When you are traveling, you want to try the local beer; that's the real opportunity for all the local breweries in Minnesota."

Brewers are taking advantage of local resources as well. Hoag said that's why Duluth is such a great beer town: "We have the fabulous confluence of great water [from Lake Superior] and access to supplies; our barley is grown right here in the Midwest."

Hoag had nothing but good things to say about the added competition that comes with each new brewery. "People have been asking us all year how we're doing with the increased competition," he said, "but 2012 was our best year yet in terms of sales, and so far in 2013 we're well ahead of that pace."

And why is that? Well, each new brewery that opens its doors increases awareness of locally made beer, and that outweighs the challenges that come with increased competition in the marketplace, according to Hoag.

The brewing boom is not just anecdotal. Craft breweries are slowly gaining market share in an industry that has traditionally been dominated by beer-making conglomerates Anheuser-Busch InBev and

MillerCoors. According to the Brewers Association, American craft brewers sold 13.24 million barrels of beer (6.5 percent of all beer sales in the country) in 2012.[1] That was up 15 percent from 2011.

The impact of the craft beer explosion goes beyond manufacturing. The increased demand for locally brewed craft beer has had a noticeable impact on the wholesale and retail sectors as well. Additionally, the Minnesota Legislature's passage of the so-called "Surly Bill," named after the Minneapolis brewery that spearheaded the legislation, changed the law to allow breweries to maintain tap rooms for sampling their beers. This significant change has led to the evolution of breweries from strictly production facilities to destinations in and of themselves. In fact, clusters of breweries in the Twin Cities and Duluth are leading to the emergence of a beer tourism scene where people hop from brewery to brewery on their own or as part of an organized tour.

Craft Brew Defined

So, what exactly is a craft brewery? The Brewers Association states that to be classified as craft, brewers must satisfy three conditions: They must be small, independent and traditional.

A brewery qualifies as "small" if it brews fewer than 6 million barrels of beer a year and "independent" if no less than 75 percent of the business is owned by a craft brewing company. A craft brewery is considered "traditional" if it has an all-malt flagship beer or if 50 percent of its total volume is in all-malt beers.[2]

Increased market share for craft breweries has forced the large brewers to take action. MillerCoors and Anheuser-Busch Inbev have begun buying up stock in craft beer companies, such as Goose Island in Chicago and Red Hook in Seattle, in addition to releasing their own "craft style" beers such as Blue Moon and Shock Top. While not classified as craft beer according to the Brewers Association, these beers are the establishment's reaction to a changing beer culture.

Minnesota Brewed

Long gone are the days when companies like Hamm's, Grain Belt and Schmidt ruled the Minnesota brewing scene. Nowadays, craft beer is king, and the economic impact of the craft brewing industry is growing larger by the year.

An unofficial count shows 65 regional brewing companies operating in Minnesota.

PHOTO: JUDY PARKER

According to Alcohol and Tobacco Tax and Trade Bureau statistics, in 2012 there were 57 active brewery permits in the state, up from 26 in 2004. The amount of beer produced by the state's breweries has increased 83 percent over the past 10 years, growing from 218,691 barrels in 2003 to 390,962 barrels in 2012. More than half of the state's production comes from its two regional breweries, Summit Brewing Co. in St. Paul and Schell's Brewing Co. in New Ulm. The remaining production comes from a variety of smaller microbreweries, brewpubs and contract brewing companies (see

Brewery Glossary

Microbrewery: A brewery that produces fewer than 15,000 barrels of beer annually, with 75 percent or more of its beer sold off-site. Microbreweries sell to the public by one or more of the following methods: the traditional three-tier system (brewer to wholesaler to retailer to consumer); the two-tier system (brewer acting as wholesaler to retailer to consumer); and directly to the consumer through carry-outs or on-site taproom or restaurant sales.

Brewpub: A restaurant-brewery that sells 25 percent or more of its beer on site. The beer is brewed primarily for sale in the restaurant and bar. The beer is often dispensed directly from the brewery's storage tanks. Where allowed by law, brewpubs often sell beer "to go" or distribute to off-site accounts. Note: The Brewers Association re-categorizes a company as a microbrewery if its off-site (distributed) beer sales exceed 75 percent.

Contract Brewing Company: A business that hires another brewery to produce its beer. It can also be a brewery that hires another brewery to produce additional beer. The contract brewing company handles marketing, sales and distribution of its beer, while generally leaving the brewing and packaging to its producer-brewery (which, confusingly, is also sometimes referred to as a contract brewery).

Regional Brewery: A brewery with annual beer production of between 15,000 and 6 million barrels.

Regional Craft Brewery: An independent regional brewery that has either an all-malt flagship or has at least 50 percent of its volume in either all-malt beers or in beers that use adjuncts to enhance rather than lighten flavor.

Large Brewery: A brewery with annual beer production of more than 6 million barrels.

Source: Brewers Association

sidebar for definitions) spread throughout the state, with notable concentrations in the Twin Cities and Duluth.

According to the Minnesota Department of Employment and Economic Development's (DEED) Quarterly Census of Employment and Wages (QCEW) data, employment in the brewing sector has grown by 104 percent since the third quarter of 2004 (when 250 people were employed at six breweries) to the first quarter of 2013 (when 512 people were employed at 24 breweries).[3] Other than two years of decline due to the recession in 2008 and 2009, the industry has posted positive employment growth every year since 2004, the first year industry statistics are available.

The Bureau of Labor Statistics classifies all occupations under a set of Standard Occupational Codes (SOC), with brewers classified under SOC 50-9012, Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders. According to DEED's Occupational Employment Statistics (OES) data, in the second quarter of 2013 there were 730 workers with this occupational code working in Minnesota's manufacturing sector, earning a median wage of $17.71 per hour. In 2013 workers employed at breweries earned $5.32 million in total wages, up from $2.45 million in 2004, according to QCEW data. That's a significant economic impact from wages alone.

Founded in 1986, Summit Brewing Co. in St. Paul not only pioneered the craft beer industry in the state, but in the nation as well. Because of that, Summit founder Mark Stutrud has a unique perspective on where the business has been and where it's going.

"Our goal was to survive," Stutrud said. "We started a brewery in a point of context with no other examples to go by; we were ahead of the curve."

At that time, Summit was a small operation brewing around 1,500 barrels a year. Today, Summit is a successful regional brewery producing well over 100,000 barrels of beer and recording annual revenues of around $25 million.

When the company bought its current property from the city of St. Paul for $1 in 1996, it came with a pledge to create livable wage jobs, a commitment Stutrud takes very seriously. Today Summit employs 62 people, 50 of whom are full-time workers.

"Our compensation is very strong," Stutrud said. "People who are working 30 hours a week are considered full time, and they are eligible for full benefits."

When it comes to the craft brew sector in Minnesota, Stutrud believes there is still room for growth. Like Hoag, Stutrud is aware that Minnesotans have been drinking Minnesota-made beer for a long time.

"There was a time when as an aggregate [Minnesota-brewed beers] had a majority of the market share in the state," he said.

These days, the majority of Americans are drinking American light lagers from companies like Budweiser and Miller, but if you ask Stutrud, that's good news because there is plenty of room to expand.

"One thing about this whole craft brewing segment is that it is still only about 6.5 percent of the market," he said. "For this segment to grow, it's going to come at the expense of the bigger brewers. And that is going to take some work."

That plays right into what Stutrud believes is the key

FIGURE 1

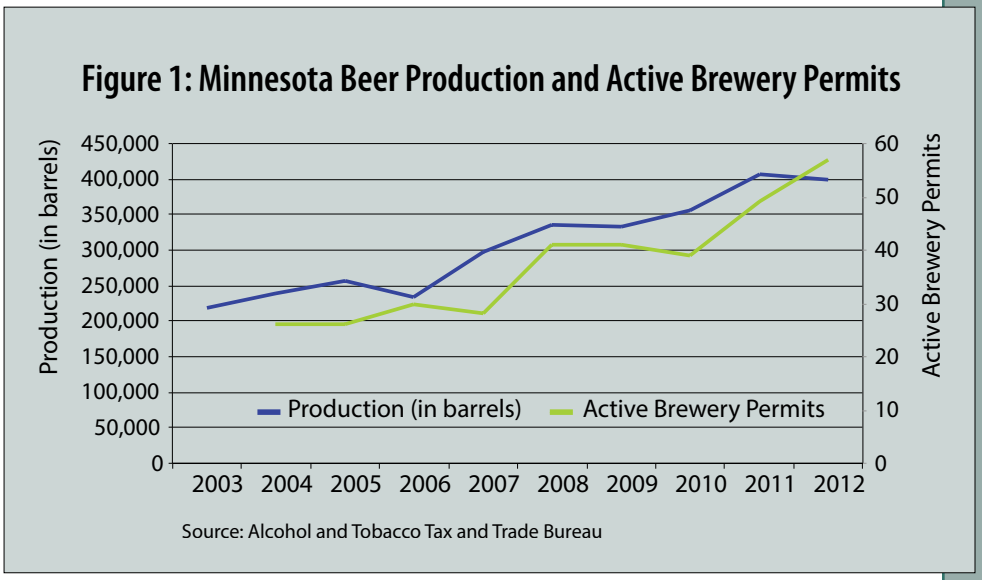


PHOTO: JUDY PARKER

Summit's Mark Stutrud says there's room for growth in the craft beer sector.

component of the emerging brewery scene in Minnesota. "I'm a firm believer in regionalism," he said. "The appetite for the consumer today, they are not only learning about beer and beer styles, they also want to learn about where it is produced and where it's coming from."

Like Hoag, Stutrud believes this will give locally brewed beers an advantage in the coming years.

Wholesale Improvement

Growth in the craft brewing sector has also spawned an increase in the Beer and Ale Merchant Wholesalers sector. This industry — responsible for the distribution of the full range of fermented malt beverages to liquor stores, bars and restaurants — has seen employment jump by 18 percent from 1,390 jobs in 2000 to 1,639 jobs in 2012.

Total wages paid also saw a large jump during the same period, growing from $53.11 million in 2000 to $83.47 million in 2012. Continued growth in the craft beer sector should mean continued growth on the wholesale end as well. In fact, according to DEED's employment projections, employment in the Alcoholic Beverage Merchant Wholesalers sector is projected to grow by 22.3 percent by 2020.

Gary Barby is the director of emerging beer brands for Bernick's Beverages and Vending in St. Cloud. Throughout his career in the beer wholesale industry, Barby has observed two major waves of craft beer growth. The first was back in the late 1980s and early 1990s when companies like Summit, Sam Adams and Sierra Nevada came onto the scene. This initial wave was characterized by rapid growth and an equally rapid decline.

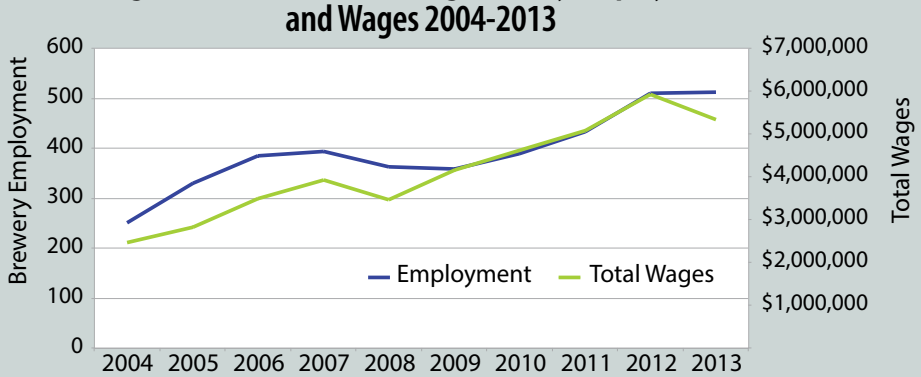
The decline happened for two main reasons. First, according to Barby, was the widespread use of inferior equipment. "Some of the breweries that came on-line didn't have good enough equipment to make the beer they ought to make, and consumers got wary," he said.

The second major reason was simply the nature of the business at the time. According to Barby, television advertising was king, and "the big guys [Budweiser, Miller, etc.] could really take advantage of this and really overwhelmed the smaller guys."

Eventually this combination of an inferior product and an inability to compete with the large brewers meant many of the smaller companies went out of business. Companies like Summit, Sam Adams, New Belgium, Dogfish Head and Sierra Nevada survived with innovative marketing and by making a quality product. Today these companies make up the successful ranks of large regional craft brewers that have paved the way for a new generation that has had the benefit of learning from their predecessors' successes and failures.

According to Barby, the big difference between then and now is, again, the equipment. "For

FIGURE 2



Note: This graph displays fourth quarter data for 2004 through 2012. Data from 2013 is for the first quarter.

the new guys, the equipment has really changed, and they are all making really good beer."

As far as the advertising and marketing goes, Barby explained that social media have allowed the smaller companies to spread the word about their product much easier than they could in the 1990s. "Social media has made a big change; the big guys can't just put out TV ads [and dominate the market]," he said.

Barby is optimistic about the direction of the craft brew sector. He pointed out the success that craft beer is having in other markets.

"If you look at the Portland market, 40 percent of the beer they sell out there is craft. In Colorado, it is 20 percent. It really depends on the area you live and if the population is willing to consume that [craft beer]," he said.

Barby said beer drinkers in Minnesota are a little more conservative: "We're at about a 5 share," he pointed out, "but [craft beer] could possibly grow out another 5 to 10 percent of the market yet."

While the growth potential is great, it is the quality and innovation that really excite Barby. "What's really great about this is it brings a lot of excitement to the beer business. You can make something for everybody, and that's exciting."

Beer State

There is a limit to how much beer Minnesota can produce and distribute, but the state has yet to hit that point. While Minnesotans are increasingly shifting to locally produced brews, local craft brewers are looking to grow their markets inside and outside of the state. As a result, locals and outsiders alike are being introduced to Minnesota-brewed beer. These new customers will, in turn, be drawn to Minnesota's emerging beer brewing clusters in the Twin Cities, Twin Ports and everywhere in between as part of the state's burgeoning beer tourism movement.

We may never be Napa Valley, but then again we're Minnesota, home of Hamm's, Grain Belt, Schell's, Summit and Surly. We're a beer state, and we're proud of it. T

PHOTO: JUDY PARKER

PHOTO: JUDY PARKER

[1]One barrel of beer equals 31 gallons.

[2]According to the Brewers Association, all-malt beers are beers made entirely from mashed barley malt, without the addition of adjuncts, sugars or additional fermentables.

[3]As stated earlier, the actual number of breweries operating in the state is closer to 65. Since many of these establishments, however, are operated as sole proprietorships, they are not included in the data.

Dave Senf

Minnesota's Evolving Labor Market

A record number of Minnesotans are working, but their occupations and how much they are paid are changing as the state transitions to a knowledge-based economy.

In case you haven't been paying attention lately, more Minnesotans than ever before are getting up each day and heading off to work. Both of Minnesota's monthly employment gauges have recently recorded all-time monthly highs on a seasonally adjusted basis. Minnesota's nonfarm wage and salary employment reached a record high of 2.79 million in August, while household employment reached a record high 2.83 million in May.[1] New monthly highs for both employment series should become more common now that pre-recession peaks have been topped and job growth is on pace toward a 13-year high in 2013.

You may be wondering why the variation in employment estimates in those two measures. The big difference is that household employment includes self-employment, while wage and salary employment excludes the self-employed. There is also the place of residency versus place of employment divergence, the differing treatment for holding multiple jobs, and the farm versus nonfarm difference.[2] By either measure, however, employment has recovered from the Great Recession. Household employment has climbed 128,000 from its August 2009 low, while wage and salary employment has increased 165,000 since bottoming out in September 2009.

Job growth during the recovery, however, hasn't been an exact mirror image of job loss during the recession. While employment levels are a little above or slightly below pre-recession levels for most Minnesota sectors, payroll numbers are way below pre-recession levels in manufacturing and construction and significantly above pre-recession levels in health care and social assistance, private education services and management of companies. Manufacturing and construction jobs are down by double-digit percentages since 2007, while health care and social assistance, private education services and management of companies jobs are up by double-digit percentages since 2007.

As Minnesota's industrial mix of employment shifts, the state's occupational mix also shifts. Jobs in occupations concentrated in expanding industries increase while jobs in occupations concentrated in shrinking industries decrease. Roughly half of all Minnesota manufacturing employment is in production occupations, while construction occupations account for 64 percent of construction sector employment. Education, training and library occupations make up 52 percent of private education jobs, while 50 percent of jobs in the health care and social assistance sector are in either health care practitioners or health care support occupations.

Minnesota's occupational mix has obviously shifted some over the last four years, reflecting the industry mix shift that occurred during and after the recession. Shifting occupational mix, however, is not breaking news. The state's occupational mix is continuously shifting with the economy. Both the Minnesota and national economies are undergoing a long-running

structural transformation from industry-based to knowledge-based economies. The Great Recession accelerated the transformation that has been ongoing over the last three decades.

Tracking shifts in Minnesota's occupational mix, especially relative to the U.S. occupational mix, is a handy tool for gauging Minnesota's success in transitioning into a knowledge-based economy. Occupational employment in Minnesota is available from two surveys, the Occupational Employment Statistics (OES) survey and the American Community Survey (ACS).[3] One key difference between the two surveys is that OES collects occupational data from employers, while occupational data in ACS is collected from workers. The other key difference is that OES excludes the self-employed, while ACS includes the self-employed.

Minnesota's occupational employment for 2012 as reported by the two surveys is shown in Table 1, with the 800 occupations in Minnesota aggregated into 22 major occupational groups. The third and fourth columns measure how Minnesota's occupational mix compares with the national mix based on the relative employment shares of each occupational group. Management occupations in OES accounted for 6.1 percent

TABLE 1

Minnesota's Occupational Mix Relative to U.S. Occupational Mix - 2012

	OES - 2012 Employment	ACS - 2012 Employment	OES - 2012 Relative to U.S.	ACS - 2012 Relative to U.S.	OES - 2012 Annual Median Wage	ACS - 2012 Median Annual Earnings	Wage Category
Total Employment	**2,641,110**	**2,786,812**			**37,593**	**35,789**	
Management	161,560	296,708	25	11	96,104	62,491	Very High
Legal	17,750	26,611	-14	-18	78,929	62,332	Very High
Health Care Practitioners and Technical	153,280	162,474	-1	3	65,123	52,256	Very High
Computer and Mathematical	83,090	85,693	15	19	76,594	69,589	Very High
Business and Financial Operations	143,980	158,421	11	20	61,194	54,331	Very High
Architecture and Engineering	50,850	54,619	6	8	70,487	68,565	Very High
Protective Service	41,870	37,710	-36	-39	38,621	41,406	High
Life, Physical and Social Science	23,600	27,639	5	14	60,484	50,231	High
Installation, Maintenance and Repair	89,390	84,152	-13	-8	44,176	41,638	High
Education, Training and Library	153,110	165,940	-10	-2	45,333	35,519	High
Construction and Extraction	81,230	120,116	-20	-14	49,853	39,571	High
Community and Social Service	49,930	55,763	31	22	41,223	38,225	High
Arts, Design, Entertainment, Sports and Media	38,400	55,024	8	3	43,548	34,560	High
Transportation and Material Moving	161,020	162,744	-9	-5	32,440	29,546	Low
Production	214,480	199,499	23	19	33,989	31,607	Low
Office and Administrative Support	400,220	369,232	-8	-2	34,954	30,740	Low
Health Care Support	93,160	67,802	17	-5	26,973	21,362	Low
Farming, Fishing and Forestry	3,220	18,721	-63	-5	28,415	22,691	Low
Sales and Related	271,500	289,207	-3	-5	26,608	30,606	Very Low
Personal Care and Service	105,200	109,808	36	7	22,850	16,240	Very Low
Food Preparation and Serving Related	223,370	144,952	-5	-10	19,001	11,207	Very Low
Building and Grounds Cleaning and Maintenance	80,910	93,977	-6	-17	24,129	17,204	Very Low

Source: Occupational Employment Statistics (OES) and American Community Survey (ACS)

of all employment in Minnesota, compared with 4.9 percent nationally. Minnesota has a 25 percent higher concentration of management occupations than the U.S.

Meanwhile, legal occupations as a percent of total employment are lower in Minnesota (0.7 percent) than nationally (0.8 percent). Minnesota's lower share translates into the state having 14 percent fewer legal occupation jobs than the country as a whole. Minnesota has a higher concentration of jobs in 10 occupational groups than the U.S. and a lower concentration in 12 occupational groups.

Are the 10 occupational groups in Minnesota with higher employment concentrations the right kind of jobs that offer better pay and stronger growth outlooks than nationally?

Insight into what kind of jobs are being created in Minnesota compared with the U.S. is provided by sorting occupational groups into four wage levels — very high, high, low and very low — based on 2012 median annual earnings and tracking employment of the four wage groups over time relative to national growth. The wage group assignment for each occupational group is listed in the last column in Table 1.

Minnesota's share of national employment as measured by the two surveys has been on the upswing over the last few years after tailing off a bit during the middle of the last decade (see Figure 1). The state's share of national employment was 2.03 percent for OES employment and 1.95 percent for ACS employment in 2012. Minnesota's lower share of ACS employment compared with the OES share suggests self-employed jobs account for a smaller share of employment in Minnesota than nationally. Put another way, wage and salary jobs in Minnesota account for a larger share of employment than nationally.

Minnesota's share of very-high-wage jobs has tailed off since 2006 based on OES data, but has climbed sharply since 2010 based on ACS data. Minnesota's share of very-high-wage occupations is higher than its share of total employment. The opposite holds for high-wage occupations, with Minnesota's share of high-wage employment below the state's share of total employment.

OES data show Minnesota's share of high-wage occupations declining over the last decade. The ACS showed similar declines three years ago but increasing shares over the last few years. The conflicting

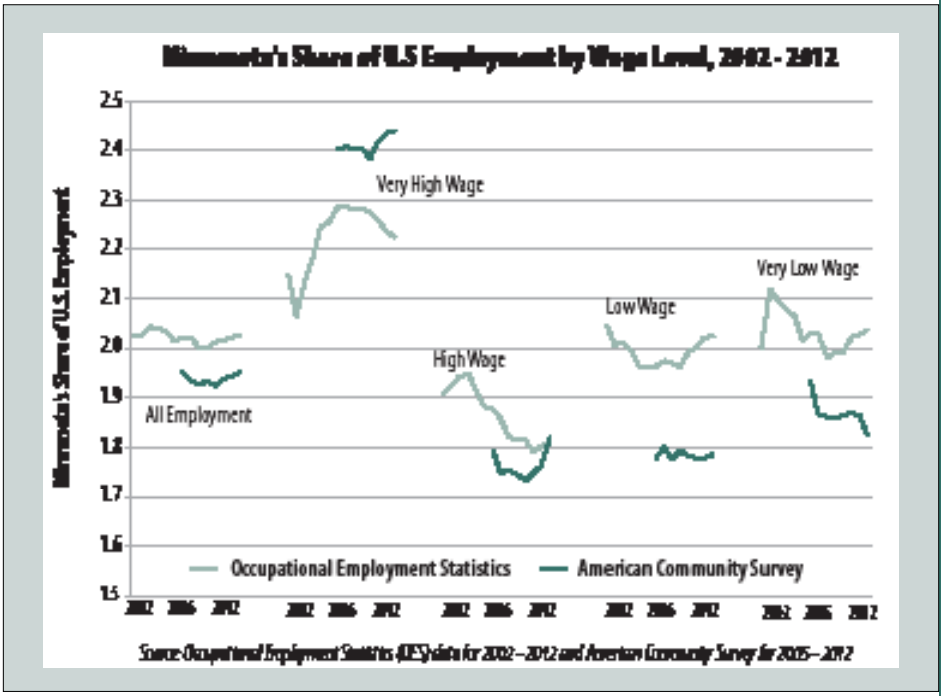
stories presented by the two occupational surveys are likely due to the two big ways that the surveys differ. Remember, OES excludes self-employed and most agriculture-related employment, while ACS includes self-employed and agriculture-related employment.

One possible theory on why Minnesota is capturing higher shares of very-high-wage and high-wage employment in the ACS data and not in the OES data is that Minnesota's 1099 (freelance, independent contract) economy is expanding at a faster clip than nationally. Minnesota's self-employment in occupations such as management, life sciences, architecture and engineering, education, construction and installation may be increasing faster than nationally, thereby generating Minnesota's increasing share of very-high-wage and high-wage employment in the ACS data. There has been a lot of anecdotal talk of the 1099 economy but little evidence of it in employment data. Perhaps the divergence in the ACS and OES data is hard evidence of expanding 1099 activity.

The two sources of occupational data are also telling divergent stories about Minnesota's low-wage and very-low-wage occupations relative to the nation. The OES data show Minnesota's share of low-wage and very-low-wage occupations increasing since the recession. ACS data show the state's share as flat for low-wage occupations and decreasing for very-low-wage occupations.

Since OES and ACS are survey-based, both datasets inherently have some noise attached. The noise may be the source of the differing trends, or the differing trends displayed by the two occupational datasets may be providing useful information on how Minnesota's labor market is evolving. T

FIGURE 1



[1]Nonfarm wage and salary employment is also known as payroll, establishment or CES employment and is available at http://mn.gov/deed/ces. Household employment is also called LAUS (Local Area Unemployment Statistics) employment and is available at http://mn.gov/deed/laus.

[2]More information comparing Minnesota employment data is available at http://mn.gov/deed/data/data-tools/.

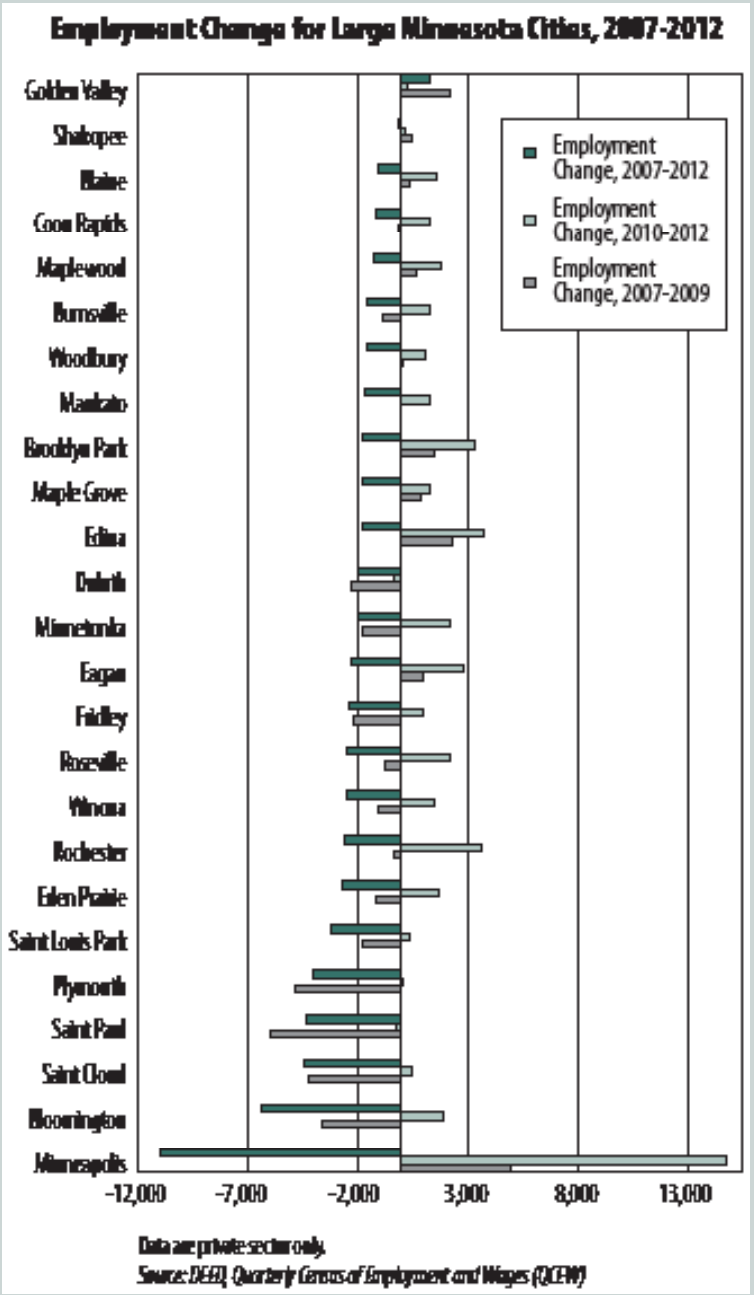
[3]For more details on the two surveys, see "A Look at Occupational Data," Minnesota Economic Trends, March 2013, http://mn.gov/deed/newscenter/publications/trends/march-2013/occupational-data.jsp.

Rachel Vilsack

Employment in Minnesota's Top

While Minnesota has recovered all the jobs that were lost in the recession, many of the state's largest cities remain below their pre-recessionary employment levels.

FIGURE 1



Four years after the end of the Great Recession, Minnesota has regained all the private-sector jobs that were lost in the recession. But while the broad numbers are positive, the state's largest cities have fared differently. Some cities have recovered all their jobs, while others haven't.

Figure 1 displays private-sector employment changes for 25 Minnesota cities with the largest employment. Only one city (Golden Valley) suffered no job losses during the recession between 2007 and 2009. In fact, employment in Golden Valley increased each year between 2007 and 2011, before seeing a 1.3 percent decline in employment between 2011 and 2012.

Of the 24 large Minnesota cities that experienced job losses during the recession, nine have fully recovered, pushing their annual average employment in 2012 to above their 2007 levels. Most notable is Minneapolis, which lost 10,955 private-sector jobs (a decline of 4.4 percent) between 2007 and 2009, only to regain 14,713 jobs between 2010 and 2012. In total, private employment levels in Minneapolis in 2012 exceeded the city's 2007 employment level by 4,938 jobs.

25 Cities

One trend may separate the post-recessionary success of large Minnesota cities from other small- to mid-sized cities: growth in the years immediately following the recession. Only two cities (Duluth and St. Paul) had continued employment declines between 2010 and 2012.

But for those cities that gained employment between 2010 and 2012, it may not have been enough to get back to pre-recessionary employment levels. Table 1 shows the job losses during the recession and subsequent gains by cities with 2012 employment averages above their 2007 employment levels. All of these cities are within the seven-county Twin Cities region.

Of cities in Greater Minnesota, Mankato had only 22 fewer private-sector jobs in 2012 than in 2007. Jobs in Rochester (-354), Winona (-1,096), Duluth (-2,161), and St. Cloud (-4,238) were also off from their higher 2007 employment levels. It's St. Paul, however, that has the most ground to make up, needing to gain back 5,989 jobs before reaching pre-recessionary employment levels.

Recovery is still underway in more than half of Minnesota's largest cities, which hadn't recovered from their recessionary job losses by 2012.

A Tale of Two Cities

The central cities of Minneapolis and St. Paul deserve their own attention, as their recessionary and post-recessionary trends have deviated. Both cities witnessed job loss between 2007 and 2009. Minneapolis lost a larger number of jobs and a larger share of private-sector employment than St. Paul, which lost 4,332 jobs, a decline of 3 percent.

While employment in St. Paul continued to decline in 2010, increased slightly in 2011 and declined again in 2012, employment in Minneapolis increased each since 2009. T

TABLE 1

Cities With Job Growth Between 2007 and 2012

	Job Loss 2007-2009	Job Gains 2010-2012	Job Gains 2007-2012
Minneapolis	-10,995	14,713	4,938
Edina	-1,817	3,728	2,308
Golden Valley	1,297	295	2,195
Brooklyn Park	-1,790	3,304	1,532
Eagan	-2,304	2,781	958
Maple Grove	-1,806	1,279	858
Maplewood	-1,258	1,771	626
Shakopee	-164	188	480
Blaine	-1,011	1,624	362
Woodbury	-1,585	1,128	44

Data are private sector only.

Source: DEED, Quarterly Census of Employment and Wages (QCEW)

Alessia Leibert

Hiring Difficulties in the Manufacturing Sector

With two-third of manufacturing vacancies in the state classified as hard to fill, employers are getting creative in their search for workers, including training new hires internally.

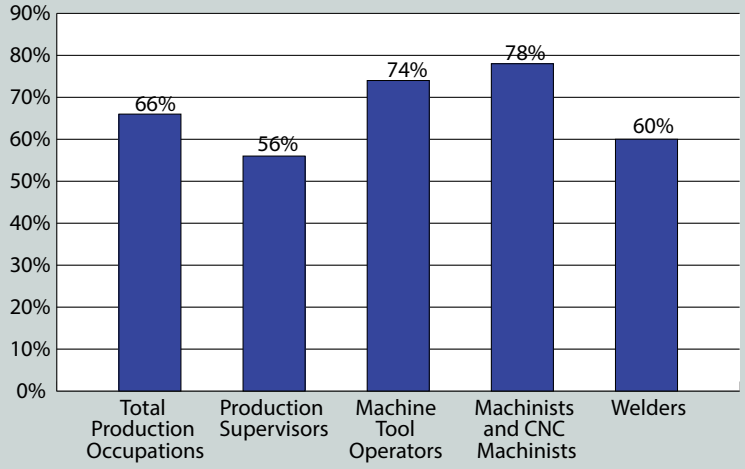
Hiring difficulties persist in the manufacturing sector. Based on results from the spring 2013 round of the Minnesota Hiring Difficulties Survey, two-thirds of the industry's positions were hard to fill, virtually unchanged from the 68 percent reported in spring 2012. Machinist jobs were the hardest positions to fill at 78 percent, followed by machine tool operators (see Figure 1).

Turnover is one reason for persistent hiring difficulties: 84 percent of production vacancies experienced turnover during the last two years for reasons unrelated to retirements or internal job transfers. Supervisors had the lowest turnover at 54 percent, while machinists had the highest at 100 percent.

Most hiring difficulties were only temporary. In fact, 68 percent of hard-to-fill positions were filled within four months of the posting date. When employers were asked how satisfied they were with the qualifications of the people they hired, the response was "very satisfied" in 65 percent of the cases, "somewhat satisfied" in 20 percent of the cases, and "not satisfied" in only 15 percent of the cases.

FIGURE 1

Figure 1: Share of Vacancies Reported as "Difficult to Fill" by Occupation, Spring 2013



Source: Minnesota Hiring Difficulties Survey, spring 2013

Employer Perceptions About Skills Gaps

Hiring difficulties are not synonymous with skills gaps. When employers were asked to identify the causes of their hiring difficulties, only 14 percent of cases were attributed exclusively to the lack of skilled applicants for current vacancies. The majority of hiring difficulties (31 percent) were caused by a mix of skills mismatches and other reasons (see Figure 2). Demand conditions alone accounted for 26 percent of hiring difficulties, while 28 percent were attributed exclusively to candidates' lack of work ethic or interest in a manufacturing career. Lack of work ethic and motivation are not skills gaps, but they can make a candidate unattractive in a setting where everyone is expected to arrive on time and work as a team.[1]

Another problem was not enough applicants: 70 percent of hard-to-fill positions attracted fewer than 10 applicants. Employers said low supply is a result of declining interest in skilled production as a career track. The following quotes from employers illustrate this point:

"Interest in welding has gone down. And we can train people on the job only if they have the interest in pursuing welding as a career."

"Not as many people choose this career. And it takes a while to become a qualified machinist, so even if you complete the right vocational degree, then you have got to come in as an apprentice somewhere and you've got to be willing to stay in the field and get educated."

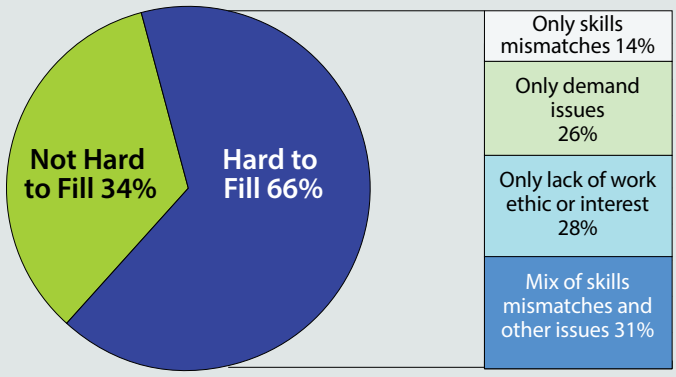
"The colleges are just responding to demand from high school, and with no demand for machining, programming or setups, there is no incentive for the colleges to offer those classes."

Hiring Difficulties Survey Quick Facts

- Data collection methods: In-depth phone interviews with employers who reported vacancies in production occupations as part of the Minnesota Job Vacancy Survey Spring 2013.
- 59 establishments responded for a 78.7 percent response rate.

FIGURE 2

Figure 2: Causes of Hiring Difficulties



Source: Minnesota Hiring Difficulties Survey, spring 2013

The lack of long-term commitment in new hires discourages firms from offering on-the-job training and post-secondary institutions from offering more classes in these fields. It also leads to fierce competition among manufacturers for qualified candidates and some reluctance to invest in internal skills formation for fear of losing skilled workers to competitors.

When demand factors were cited as primary barriers in recruiting, undesirable geographic location topped the list followed by uncompetitive wages and inconvenient work shifts. These factors are often interrelated as qualified candidates are unwilling to work for firms located in low-wage regions, especially if working hours are long and inflexible. Here is how respondents described these challenges:

"It's a combination of location and compensation, because to induce a candidate to relocate you've got to offer them comparable wages to what they are making in their current location. Often they are in the Twin Cities, and we can't bring them in that high without offsetting our own compensation program."

"We are not competitive [in terms of wage]."

"The job is not that specialized. It's more about the work ethic, the willingness to work from 10 to 14 hours a day, the willingness to live in a small town and the low pay."

Failing to account for these factors may lead employers and policymakers to misdiagnose the problem of hiring difficulties as a lack of qualifications alone — skills gaps — and to prescribe policy responses that address the *symptoms* rather than the real *causes* of hiring difficulties.

When skills mismatches were cited as a problem alone or together with demand factors, the reasons mentioned were consistent with survey responses collected in 2012. Applicants have either inadequate hands-on training or inadequate experience. These gaps are best filled through employer-provided training, as the following quote illustrates:

"We are looking for a mixed skills set: good mechanical aptitude, physical energy, and the ability to set up and operate a multi-axis lathe. You can't come out of school and be able to run these machines. It's a skill usually built through mentorship programs in companies that stay current with technology. Some people can pick it up after three to five years, others after a decade."

TABLE 1

Comparison of Hard-to-Fill and Not-Hard-to-Fill Vacancies by Firm and Job Characteristics

Factor	Categories	% Hard to fill
Firm Location	Metro Area	35%
	Greater Minnesota	79%
Firm Size	Small: Less than 50 employees	76%
	Medium: 50-249 employees	68%
	Large: 250 or more employees	41%
Experience Requirements	No experience required	64%
	Experience of less than three years	58%
	More than three years of experience	79%
Education Requirements	High School	69%
	Associate or Vocational	64%
	Bachelor's	35%
Training Indicator	Yes, the firm offered training	61%
	No, the firm did not offer training	82%

*Training is defined as any of the following: structured on-the-job training, apprenticeship or internship, off-the-job training and tuition reimbursement for classroom training.

The model was able to correctly predict the presence (or absence) of a hiring difficulty in 89 percent of cases, with a Nagelkerke R Square of .602. The following variables were included in the model: region (metro versus Greater Minnesota), firm size, educational level, experience level, occupation, and an indicator of whether the firm offered structured training to new hires or incumbent workers over the last 12 months.

Source: Minnesota Hiring Difficulties Survey, spring 2013

Firm and Job Characteristics Drive Hiring Difficulties

The previous section looked at employer perceptions of the causes of hiring difficulties. In this section we analyze the impact of firm and job characteristics on hiring difficulties. Factors such as firm location, firm size and educational requirement of the vacancy have the strongest influence on the probability of a vacancy being hard to fill (see Table 1).

The influence of each factor is explained below.

Firm location: Seventy-nine percent of production vacancies in Greater Minnesota were hard to fill compared with 35 percent in the Twin Cities. Distance from the metro area and rural/urban divide alone do not explain this difference. As shown in Figure 3, central Minnesota — densely populated and closest to the Twin Cities — experienced significantly more hiring difficulties (90 percent) compared with remote northwestern Minnesota (52 percent). The explanation is probably that firms in central Minnesota experience competition from both local and Twin Cities manufacturers.

Firm size: Vacancies were much more likely to be hard-to-fill in small and medium-sized firms (fewer than 250 employees) compared with large firms (250 and over). Small manufacturing firms are clearly at a disadvantage compared with large firms when recruiting.

Delivery of training: Eighty-two percent of firms that did not offer structured training had difficulties filling production vacancies compared with 61 percent that did offer training. A possible explanation is that firms that lack the capacity to deliver training to new hires probably also lack the flexibility to hire inexperienced candidates.

Education and experience level: Hiring difficulties were much more common in vacancies requiring a high school degree (69 percent hard to fill) compared with those requiring post-secondary education. Only

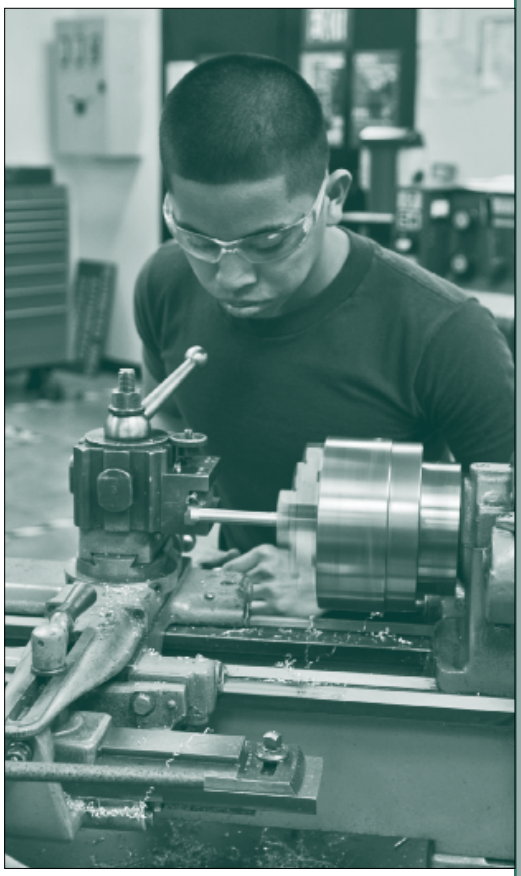
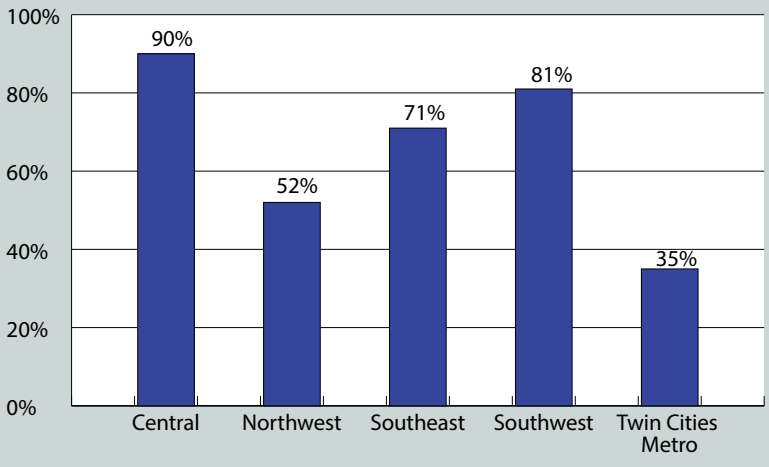


PHOTO COURTESY U.S. NAVY

FIGURE 3



29 percent of the high-school vacancies, however, were truly entry-level, requiring neither education nor experience (see Figure 4), while 71 percent required more than one year of related work experience at a minimum.

Expecting high-school educated external candidates to bring a mid-level skill set clearly presents a challenge for employers, especially after the disappearance of machine shop classes from K-12. This is one reason some firms are going back to a strategy of building skills and promoting from within as an alternative to hiring for mid-level skills. The decision to develop skills internally or buy from outside through new hires is often dictated by the tightness of the labor market.

Employer Responses to Hiring Difficulties

Figure 5 illustrates the actions taken by employers who reported difficulties filling production vacancies.

The most popular response, adopted in 64 percent of the cases, is changing advertising or recruiting methods, which is low cost and effective in the short term. The most remarkable survey finding is the high share of firms (40 percent) that increased training for new hires. As the labor market tightens and competition among firms for qualified workers increases, employers are clearly more willing to hire inexperienced candidates and address their skills gaps through training, indicating a shift from a "buying" to a "making" approach to skills.

Internal training often requires a change in roles and work practices that does not come without resistance. As one HR professional said:

"I am trying to convince the plant manager to train the supervisors better. They have the bad habit of providing some cursory training and throwing them out there. Sometimes training by 'trial by fire' is the way to go, but not necessarily. The supervisors become frustrated early because they don't know what they're doing and aren't sure how to get the help, and occasionally they'll leave. They also should not expect a recently promoted supervisor to supervise 100 people perfectly. We should give them tools they need to do their job well: classes, schooling, whatever."

In 30 percent of the cases, employers attempted to make their vacancy more attractive by raising the wage or improving benefits. This is indicative of employer awareness of the role demand factors play in causing hiring difficulties. In another 17 percent of cases, employers partnered with schools for curriculum development, internships or sponsorship programs to help students pay for schooling.

According to respondents, strategies that combine internal training and partnerships with colleges are particularly effective because they facilitate the transition from school to work and help build the future pipeline of qualified workers. The following are three of the many success stories that employers shared during the interviews:

"We have a successful internship program whereby we pay a generous portion of tuition for students, and they can work here part time and also go to school. Many of them end up working full time after they graduate, and that's how we get most of our machining positions filled."

"Last year this company had 120 percent turnover over the summer.

This year we are at 35 percent thanks to better hiring standards followed by better training for new hires. We're one of the few companies willing to lower the experience requirements and train new hires as machine operators. We created an apprenticeship program through the local technical college. Students complete the two-year degree over four years while working for us full time and we pay for everything including their books."

"We partner with schools offering programs in machining and welding. Local manufacturers hold regular meetings to offer feedback on curriculum design."

In these and other cases, Minnesota employers and schools are developing innovative partnerships that are helping to strengthen the entire manufacturing sector.[2]

Training

Thirty percent of firms reported no training needs for incumbent workers. Of the 70 percent that identified gaps in their current workforces, work-related experience was most often cited, consistent with the types of gaps cited in job candidates. Interestingly, respondents also emphasized the need for more cross-training rather than occupation-specific training. While post-secondary educational institutions have a role to play by providing multidisciplinary training, on-the-job training is the main path for developing a workforce that fits the needs of individual manufacturers.

FIGURE 4

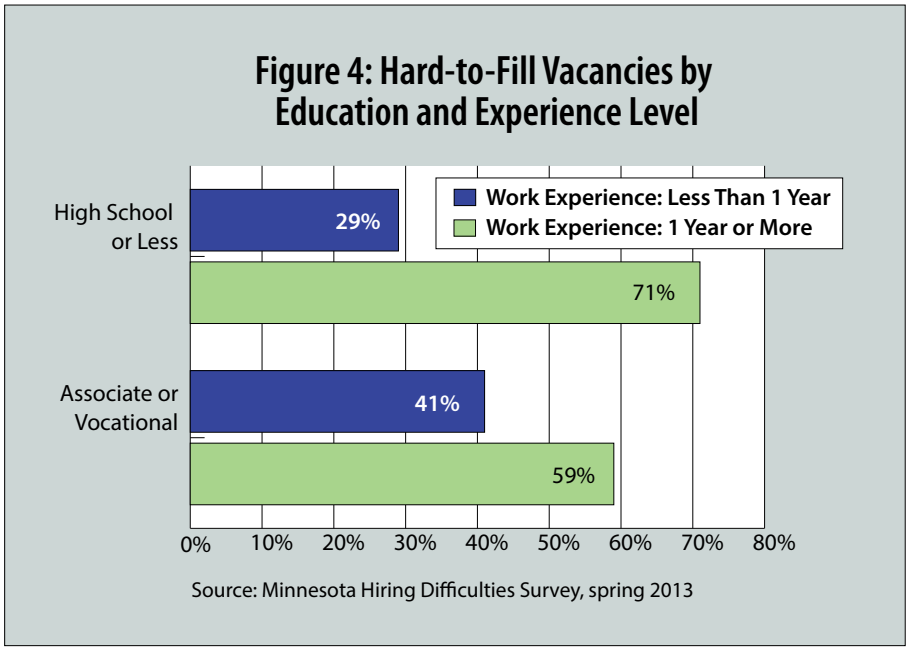
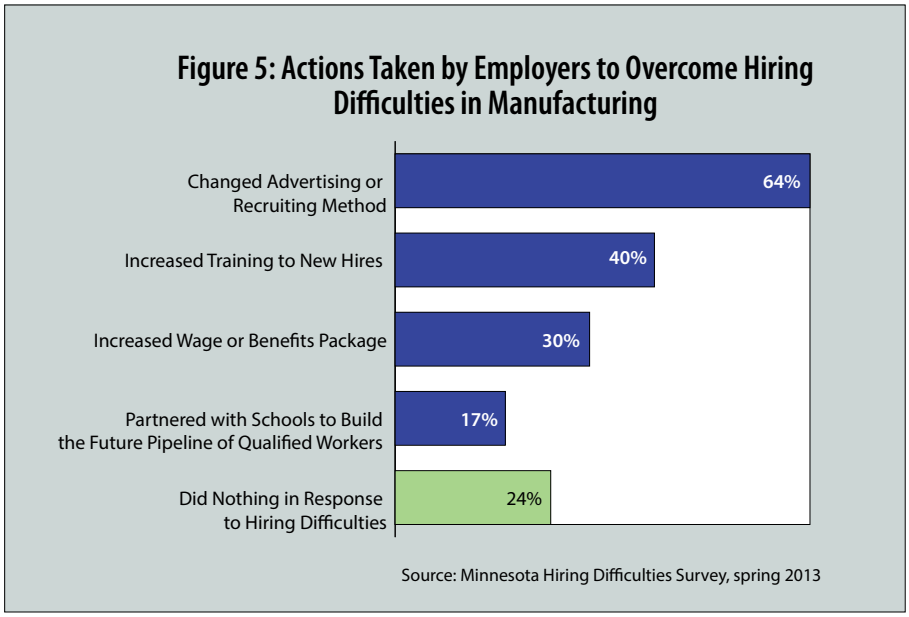


FIGURE 5

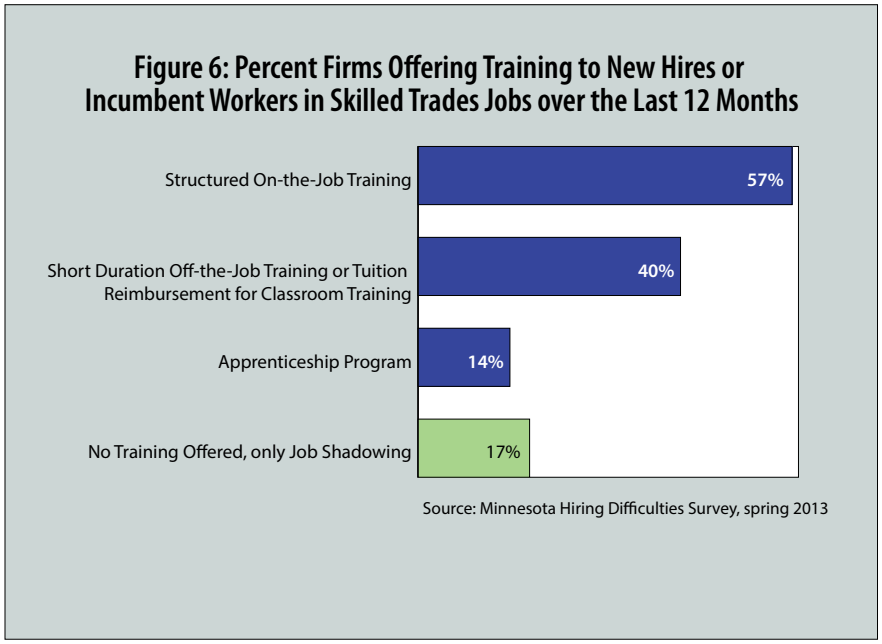


What are employers doing to train their workforces? Figure 6 shows the types of training that employers reported delivering over the last 12 months.

To put these results in context, remember that full competency in machining, CNC (computer numerical control) machining, welding and machine operations is acquired through structured on-the-job training lasting from one month to one year. With that in mind, these relatively low frequencies for job training and apprenticeships may be the result of cuts in employer training budgets during the Great Recession when skilled labor was abundant and firms could still find high school graduates with machine-shop skills. Between 2012 and 2013, almost all surveyed firms had job shadowing or buddy schemes, with 17 percent relying exclusively on job shadowing to train new hires.[3] The trend appears to be turning back toward an increase in structured on-the-job training in response to a tightening labor market.

Figure 6 also shows that 40 percent of firms offered tuition reimbursement or paid classroom training. Employers value post-secondary training, both to upgrade the skills of their workers and to attract candidates who otherwise could not afford to earn a degree.

FIGURE 6



Conclusions

Manufacturers face unprecedented challenges in filling skilled production positions, including competition from other firms, declining interest in manufacturing careers among young people, unattractive firm locations and work shifts, uncompetitive wages and skills gaps.

Minnesota employers are investing in solutions to remove some of these barriers. Demand factors are more often acknowledged and addressed, and firms are shifting from a strategy of buying skills from outside to building skills by training incumbent and new workers. Investing in internal skills, either in partnership or in-house, will pay off in the long term. Employer-driven initiatives and policies that favor business-education collaborations tailored to the unique needs of a region and industry are critical to the future competitiveness of Minnesota's manufacturers.

[1]One respondent expressed this as follows: "Younger generations seem to have a sense of entitlement. When they're asked to do something different, they expect to be paid more. But in our firm everybody, even those who are working in the office, can be pulled to the shop at some time. Everything is your job if you get compensated. That's why we ended up hiring someone older, who had none of the technical skills and qualifications required to work as a CNC operator. It's pretty much just the work ethic that got him the job."

[2]One of the pioneers is Skills Right Now, a program in machine-tool technology that leads to industry-recognized credentials through the National Institute of Metalworking Skills. It features a semester of paid internships alternating with a semester of in-class instruction.

[3]Job shadowing involves pairing the new hire with an experienced worker who is not officially tasked with training. On-the-job training is an intensive, longer-term approach that establishes a trainer-trainee relationship to build a broad set of competencies.

Oriane Casale and Mustapha Hammida

Minnesota's Low-Wage Sector

Thousands of Minnesota workers will be affected if a proposal to raise the state's minimum wage to $9.50 an hour is approved.

Last session the Minnesota Legislature debated on whether to raise the minimum wage. The session closed with the House approving a bill (HF 92) that would raise the wage to $9.50 an hour by 2015.[1] A similar bill is expected to be debated in the 2014 legislative session. In anticipation of the debate, this article presents data on jobs paying under $9.50 per hour in Minnesota.

We first estimate how many people earn $7.25 an hour and how many jobs pay at or below that wage in Minnesota. Second, we estimate how many jobs could see an increase if the minimum wage is raised to $9.50 per hour. Third, we discuss which industries and occupations would be affected the most by an increase to $9.50. Except for the first section, all of the data presented here are for jobs rather than people.

Minnesotans Earning at or Below Minimum Wage

Current Minnesota statute sets the minimum wage at $5.25 for companies with annual gross receipts below $625,000 and $6.15 for companies with receipts of $625,000 and up. Both of these fall below the federal minimum wage of $7.25 per hour, which is the minimum wage the vast majority of Minnesota businesses must pay. That is because for any business with annual gross receipts of $500,000 or more that engages in interstate commerce — for example, by taking credit cards or using out-of-state suppliers — the higher minimum wage, whether federal or state, prevails. The higher wage also prevails for any employees who engage in interstate commerce in a given week in the performance of their jobs, regardless of the employer's annual gross receipts.

The number of workers who hold minimum wage jobs has remained about steady since 1998 in Minnesota (see Chart 1). But looking just at the period since the federal minimum wage was last raised in August 2009, we see a slight downward trend in the number of people holding those jobs. Chart 1 also shows that many workers who hold

CHART 1

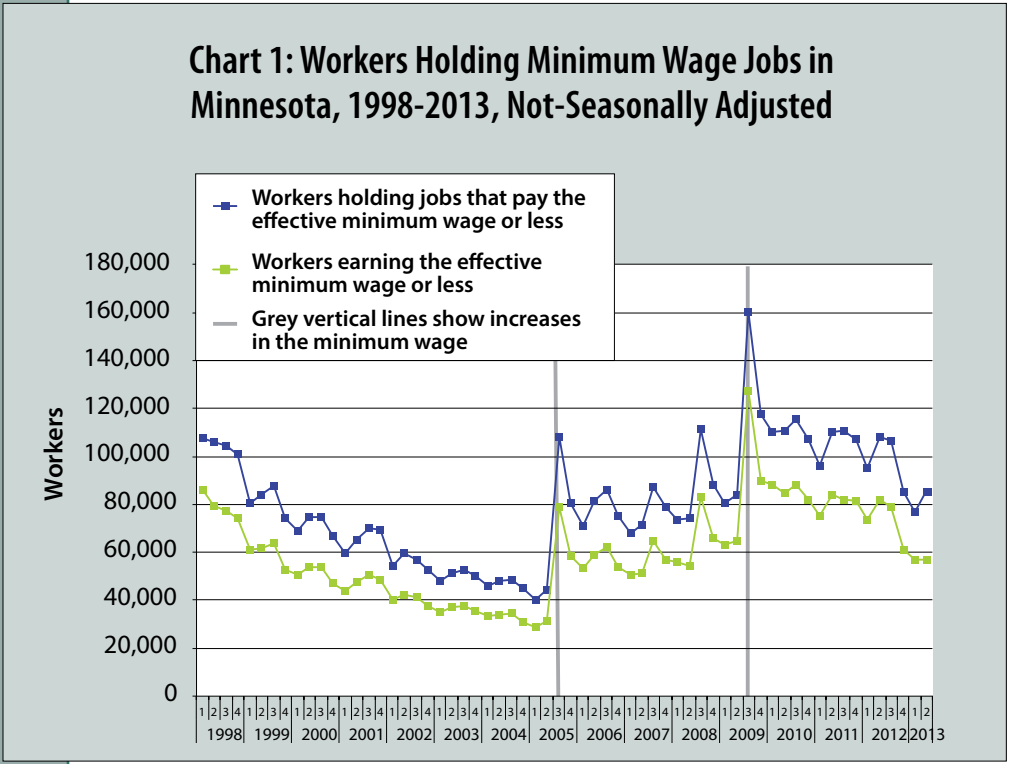


TABLE 1

Jobs paying less than $9.50 by Planning Region, Average Quarter, 2012

Planning Region	Number of Jobs	Percent of Total Jobs
Central	51,713	19.4%
Northeast	31,819	20.4%
Northwest	49,162	21.3%
Southeast	43,613	17.6%
Southwest	40,760	21.4%
Twin Cities Metro	223,927	13.5%
Information not available	20,352	16.1%
Total	**461,345**	**16.1%**

Source: Unemployment Insurance Wage Records, 2012. Employers are required to report tips and gratuities.

minimum wage jobs earn more than minimum wage on average due to other jobs that they hold simultaneously or within the same quarter. In 2012, an average of 73,900 workers per quarter in Minnesota *earned* $7.25 per hour or less, while an average of 98,800 held *at least one job that paid* $7.25 per hour or less.[2] These numbers dropped substantially just two quarters later, probably because the economy improved. During the most recent four quarters for which data are available (third quarter 2012 through second quarter 2013), those numbers dropped to 63,400 and 88,800, respectively.

Based on unemployment insurance (UI) wage records, 3.1 percent of all jobs in Minnesota (88,000) paid *below* $7.25 per hour, with more than half of those paying less than $6.15 per hour in an average quarter in 2012. During the same period, an additional 13,000 jobs paid exactly $7.25 per hour. This means that there were 101,000 jobs paying at or below $7.25 per hour, or 3.5 percent of all jobs in Minnesota in an average quarter in 2012.

How Many and Which Jobs Would be Affected?

Bills heard last year would step up the minimum wage over a three-year period to $9.50 by 2015. In this analysis, we use $9.50 as a high estimate of the impact of an increase. In an average quarter in 2012, Minnesota had 461,300 jobs (16.1 percent of the state's total) that paid less than $9.50 per hour, according to UI wage records.

The following industries have the biggest share of jobs paying less than $9.50 an hour: accommodation and food service

Data, Definitions and Methodology

Most of the analysis in this article is based on Minnesota unemployment insurance (UI) wage records. These are employer-reported records on all employees who work in jobs at any time during each quarter and are covered by unemployment insurance. In Minnesota, employers must report total wages earned by each employee, including salaries, cash wages, commissions, tips and gratuities, among other forms of compensation,[1] and hours worked per quarter by each employee. These reports allow us to calculate an hourly wage rate for each employee paid by the employer.

Wage record counts differ from those used in other studies of the minimum wage, counting jobs at or below any given wage rate held by an individual at any time during the quarter. Other studies often use estimates of the number of people working in minimum wage jobs at a specific point in time. Thus counts of jobs at any time during the quarter will exceed the count at any point in time as people move into and out of jobs throughout the quarter. Furthermore, the count of jobs will exceed the count of people holding jobs to the extent that people hold multiple jobs, a tendency that is especially pronounced at lower wage rates. Recent analysis suggests that these factors yield a significant gap between wage record counts of jobs and point-in-time estimates of employed individuals. For example, while 461,300 jobs paid less than $9.50 on average over the four quarters between July 1, 2012, and June 30, 2013, only 352,000 people, on average, held jobs that paid less than $9.50 per hour.

Also, because wage record counts are not sample-based, they provide detail on the entire population of UI covered jobs and the businesses that provide them. This means that much greater detail by wage, industry and region can be presented. There is an unknowable amount of reporting error in these data, and these errors appear to be disproportionately acute at either end of the distribution, e.g. jobs paying less than $9.50 per hour. These reporting errors likely have the overall effect, therefore, of overstating the number of jobs and workers that would fall into the wage categories presented in this article. We have attempted to correct for this problem by dropping suspect and incorrect records, but some overestimation may still occur.

[1]The full list of reportable wages is available at http://uimn.org/uimn/employers/publications/emp-hbook/reportable-wages.jsp.

(58.5 percent), retail trade (44.1 percent), arts, entertainment and recreation (41.5 percent), administrative and support and waste management and remediation[3] (30.4 percent), other services (26.8 percent), and agriculture, forestry, fishing and hunting (23.4 percent). In all other industries, fewer than 12 percent of the jobs pay less than $9.50.

Table 1 shows the number of jobs paying below $9.50 per hour by Minnesota planning region. The last column shows the percent of total jobs paying below $9.50 by region. Southwest, Northwest and Northeast have the highest share of jobs that pay less than $9.50 per hour. The Twin Cities Metro has the lowest share of jobs paying less than $9.50 per hour.

TABLE 2

Jobs Paying Under $9.50 Per Hour by Occupation Group in Minnesota, 2013					
Occupation group	Total jobs	Median Wage	Number paying <$9.50	Percent paying <$9.50	Example of non-tipped jobs and percent paying <$9.50
Food Preparation and Serving-Related	223,371	$8.99	140,545	62.9%	Combined Food Preparation and Serving Workers, Including Fast Food (82.5%)
Sales and Related	271,499	$12.59	83,582	30.8%	Cashiers (62.1%)
Building and Grounds Cleaning and Maintenance	80,905	$11.42	22,240	27.5%	Maids and Housekeepers (43.7%)
Personal Care and Service	105,200	$10.82	28,059	26.7%	Child Care Workers (40.2%)
Farming, Fishing and Forestry	3,222	$13.51	674	20.9%	Farmworkers, Farm, Ranch and Aquacultural Animals (47.9%)
Transportation and Material Moving	161,024	$15.30	25,188	15.6%	Packers and Packagers, Hand (49.9%)
Arts, Design, Entertainment, Sports and Media	38,404	$20.53	4,054	10.6%	Coaches and Scouts (42.1%)
Production	214,480	$16.06	19,099	8.9%	Helpers – Production Workers (41.2%)
Office and Administrative Support	400,225	$16.48	35,602	8.9%	Hotel, Motel and Resort Desk Clerks (46.8%)
Health Care Support	93,155	$12.77	7,582	8.1%	Pharmacy Aides (27.4%) and Home Health Aides (15.6%)
Protective Service	41,869	$18.28	3,406	8.1%	Lifeguards, Ski Patrol and Other Recreational Protective Service Workers (64.6%)
Education, Training and Library	153,114	$21.37	10,223	6.7%	Teacher Assistants (20.6%)

Source: Occupational Employment Statistics data, employment data for 2012, wage data updated to 2013. Employers are asked to report tips and gratuities.

Table 2 shows the occupational groups that will be affected the most by a raise to $9.50 and the percent of jobs in each of these occupations that pay under $9.50 per hour. The table also provides a sample of the specific occupations with the highest number of jobs that pay under $9.50 per hour.

Conclusion

Based on UI wage records, raising the minimum wage to $9.50 per hour would affect about 460,000 jobs in Minnesota. As the economy improves, however, this number is likely to decrease. This decrease can be seen, for example, in the number of jobs paying less than the current effective minimum wage. The number of jobs in that category from June 2012 to June 2013 was 10 percent lower than the jobs in that category from January 2012 to January 2013. Despite this decline, the level at which the minimum wage is set impacts different industries and occupations very differently. Based on 2012 data, more than half of fast-food workers, cashiers, and packers and packagers, for example, would be making more if the minimum wage were set at $9.50 in Minnesota.

[1]HF0092 has stepped increases up to $9.50 an hour for large employers in 2015. The Senate passed a companion bill with stepped increases up to $7.75 an hour for large employers. Those differences must be ironed out by both the House and Senate before the minimum wage can be increased.

[2]Many of these workers hold multiple jobs, which is why these numbers differ from the numbers on jobs in the next paragraph.

[3]This industry includes temp help services.

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