Results from the
2014 - 2015
Manufacturing Survey

Survey Authors
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The Bureau of Business and Economic Research at The University of Montana started an annual survey of Montana’s largest manufacturers in 1999. The surveys are conducted each year during November and December, and query manufacturers on a variety of business issues pertaining to both the year just completed and the outlook for the coming year.

The results shown here are from the survey completed in December 2014. A total of 233 firms were contacted for this year's survey, including Montana’s largest manufacturing facilities (as measured by the number of people employed), as well as smaller firms representative of their sectors. Of the firms contacted, 76 percent responded to the survey.

The information collected through the manufacturers survey is featured in the Bureau’s annual Montana Economic Outlook Seminar, where it is used in forecasting conditions for the manufacturing sector for the upcoming year. While partial information is published in the Outlook booklet and in BBER’s Montana Business Quarterly, this publication provides a more detailed description and analysis of the survey results. Additional information and forecasts for Montana’s economy, economic conditions throughout Montana, and major economic sectors in the state can be found on the Bureau’s website, www.bber.umt.edu.

An Overview of Manufacturing in Montana

The Montana manufacturing sector includes more than 3,000 entities ranging from large industrial facilities such as oil refineries, to a broad array of lighter production activities, including the assembly of sophisticated high-technology equipment to small cottage industries.

Overall, the state’s manufacturing sector in 2014:

• produced approximately $15 billion in product output,
• directly employed 23,429 workers (including the self-employed) who earned more than $1.17 billion in earnings,
• accounted for roughly 22 percent of Montana’s economic base.

Manufacturing industries in the state pay relatively high wages, with employees averaging over $50,000 per year (compared to an average $40,000 per year for all Montana nonfarm workers)

The Year 2014 in Review

Manufacturing in Montana has experienced four years in a row of improvements, with 2011, 2012, 2013, and 2014 each outpacing the prior year in employment, worker earnings, and output. Total manufacturing employment in Montana was 19,802 in 2010, and was estimated to have increased about 18 percent to 23,429 workers for 2014 (Table 1). Earnings of manufacturing employees were $1.09 billion during 2013 (most recent available data), with five Montana counties showing more than $50 million in manufacturing employee earnings (Table 2). Statewide manufacturing earnings grew 7 percent, topping $1.17 billion for 2014. Annual sales from Montana manufacturers in 2014 were estimated at $15 billion, about 7 percent higher than 2013.

Manufacturing continued to be an important piece of Montana’s overall economy, providing jobs with higher than average wages. During 2014, average earnings of manufacturing workers were 25 percent higher than the average across all sectors in the state.

The BBER survey of Montana manufacturers indicated that 2014 was as good as or better for their firm than 2013. Over 52 percent of firms indicated increased sales during 2014, with just 19 percent reporting a decline in sales from the previous year—this continued the trend since 2011 of more firms reporting increased sales and profit, and fewer
Although the manufacturing industry consists of hundreds of highly specific categories, for the purposes of this report, it has been divided into five segments:

### Wood products
Facilities that harvest and/or process timber into products like lumber, plywood, log homes, MDF, particleboard, and posts and poles, as well as facilities that further process primary wood products into products such as furniture, laminated beams, trusses, window and door frames, and wood carvings.

### Chemicals/Petroleum/Refining
Includes a wide range of facilities, such as those manufacturing products by transforming organic and inorganic raw materials by a chemical process (chemical manufacturing) or by transforming mined or quarried nonmetallic minerals such as sand, gravel, stone, or clay (nonmetallic mineral product manufacturing), as well as facilities engaged in the transformation of crude petroleum and coal into usable products (petroleum and coal products manufacturing), and facilities engaged in smelting and refining ferrous and nonferrous metals (primary metal manufacturing).

### Food/Beverages
Facilities that manufacture food and beverages, including primary processors of Montana’s crops and livestock, as well as those producing for retail sale. Examples include sugar beet plants, flour mills, bakeries, and dairies.

### Machinery/Equipment
Facilities engaged in manufacturing machinery, equipment, or instruments. Included here are industrial and commercial machinery, computer equipment, electrical equipment, transportation equipment, and fabricated metals.

### All Others
Facilities engaged in mostly light manufacturing such as plastic products, sporting goods, games and toys, apparel, and jewelry, as well as those engaged in printing or performing services for the printing trade such as bookbinding.

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### Table 1
**Employment in Montana Manufacturing Sectors, 2010 and 2014**

<table>
<thead>
<tr>
<th>Manufacturing Sector</th>
<th>2010</th>
<th>2014</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood, paper &amp; furniture</td>
<td>4,216</td>
<td>4,548</td>
<td>8%</td>
</tr>
<tr>
<td>Food &amp; beverage</td>
<td>3,545</td>
<td>4,214</td>
<td>19%</td>
</tr>
<tr>
<td>Primary &amp; fabricated metals</td>
<td>2,063</td>
<td>3,159</td>
<td>53%</td>
</tr>
<tr>
<td>Chemicals, petroleum &amp; coal</td>
<td>2,085</td>
<td>2,162</td>
<td>4%</td>
</tr>
<tr>
<td>Machinery</td>
<td>1,168</td>
<td>1,232</td>
<td>5%</td>
</tr>
<tr>
<td>Nonmetallic minerals</td>
<td>938</td>
<td>1,471</td>
<td>57%</td>
</tr>
<tr>
<td>Textiles, clothing &amp; leather goods</td>
<td>784</td>
<td>767</td>
<td>-2%</td>
</tr>
<tr>
<td>Computers, electronics &amp; appliances</td>
<td>641</td>
<td>831</td>
<td>30%</td>
</tr>
<tr>
<td>All other manufacturing</td>
<td>4,362</td>
<td>5,045</td>
<td>16%</td>
</tr>
<tr>
<td>Total</td>
<td>19,802</td>
<td>23,429</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: Bureau of Economic Analysis, US Department of Commerce.

### Table 2
**Montana Manufacturing Earnings by County, 2010 and 2013**

<table>
<thead>
<tr>
<th>County</th>
<th>2010 Manufacturing Worker Earnings (Millions of 2013$)</th>
<th>2013 Manufacturing Worker Earnings (Millions of 2013$)</th>
<th>Percent of Total</th>
<th>Percent Change, 2010 to 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellowstone</td>
<td>265</td>
<td>282</td>
<td>26%</td>
<td>6%</td>
</tr>
<tr>
<td>Flathead</td>
<td>149</td>
<td>173</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>Gallatin</td>
<td>123</td>
<td>138</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Missoula</td>
<td>111</td>
<td>100</td>
<td>11%</td>
<td>-10%</td>
</tr>
<tr>
<td>Cascade</td>
<td>62</td>
<td>64</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Silver Bow</td>
<td>43</td>
<td>45</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Lewis and Clark</td>
<td>38</td>
<td>45</td>
<td>4%</td>
<td>19%</td>
</tr>
<tr>
<td>Ravalli</td>
<td>39</td>
<td>39</td>
<td>4%</td>
<td>-1%</td>
</tr>
<tr>
<td>Lake</td>
<td>21</td>
<td>22</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Park</td>
<td>17</td>
<td>19</td>
<td>2%</td>
<td>10%</td>
</tr>
<tr>
<td>Lincoln</td>
<td>8</td>
<td>9</td>
<td>1%</td>
<td>12%</td>
</tr>
<tr>
<td>Other counties</td>
<td>130</td>
<td>154</td>
<td>13%</td>
<td>18%</td>
</tr>
<tr>
<td>Montana total</td>
<td>1,006</td>
<td>1,090</td>
<td>100%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Source: Bureau of Economic Analysis, US Department of Commerce.
While 37 percent indicated a shortage of workers during
the year—compared to 18 percent the previous year—just
15 percent of the firms surveyed indicated they temporarily
curtailed production during 2014. Healthcare and insurance
costs, a lack of qualified workers, cost and availability of raw
materials, worker compensation rates, and uncertainty related
to federal policy changes were frequently identified as major
issues that affected respondents’ businesses during 2014.

General Outlook for 2015

Forecasters have predicted moderate growth in the U.S.
economy during 2015. New home starts and existing home
sales in the U.S. are expected to increase modestly, and
unemployment is expected to continue its downward trend. However, uncertainty lingers in regard to federal policies
impacting interest rates, inflation, and health insurance costs.
Low energy prices are expected to boost some sectors of U.S.
manufacturing, though other sectors such as energy industry
vendors could be impacted negatively.

The 2015 manufacturing outlook for Montana was
quite positive, with expectations of higher sales, increased
production levels, and greater profits among most of the
state’s manufacturing sectors. Many manufacturers are also predicting increased employment in 2015.

The manufacturers who responded to the BBER’s
annual survey continued to express strong optimism in
their outlook for 2015. More than 47 percent expected
improved conditions during 2014, and 48 percent expect
better conditions for 2015, compared to just 6 percent
that expect 2015 to be worse than 2014 (Figure 1). The
most optimistic sectors were in the machinery/equipment
and chemicals/petroleum/refining sectors, with 62 and
52 percent, respectively, expecting a better year in 2015.
However, as the survey was conducted prior to the dramatic
price declines experienced in oil and gas, this optimism may
have subsequently waned for Montana manufacturers that are
directly linked to energy and natural resource extraction.

Sales, Production, Profits

Sixty-two percent of manufacturers anticipated 2015 sales
would increase over 2014 (Figure 2), with 52 percent expecting
increased production (Figure 3) and 55 percent anticipating
increased profits for 2014 (Figure 4). This is very similar
to 2014 when 49 to 62 percent of manufacturers expected
increased sales, production, and profits.

Chemicals/petroleum/refining was the most optimistic
manufacturing subsector in terms of sales, with 72
percent expecting 2015 sales to be higher than 2014, while
machinery/equipment manufacturers were most optimistic
in terms of production and profit, with 65 percent expecting
those measures to exceed their 2014 levels. Food/beverage
manufacturers were again optimistic regarding the upcoming
year, with 65 percent expecting increased sales and 56
percent expecting increased production in 2015. While their
expectations have been improving for the last few years,
wood products firms remained the least optimistic of the
subsectors in their outlook for 2015. Just over 40 percent of
wood products manufacturers expected better conditions
in 2015. However, this compares to just 11 percent that
expected better conditions in 2012, 32 percent for 2013, and
37 percent for 2014.
Results from the 2014-2015 Manufacturing Survey

Figure 3
Production Outlook for 2015

Figure 4
Profit Outlook for 2015

Figure 5
Outlook for Major Capital Expenditures in 2015

Figure 6
Employment Outlook for 2015

Planned Capital Expenditures

The proportion of firms planning major capital expenditures increased slightly between the 2014 and 2015 surveys, with 41 percent of responding firms planning major capital spending in 2015 (Figure 5) compared with 40 percent in the previous year’s survey. Chemicals/petroleum/refining facilities reported the highest rate of planned capital expenditures with 56 percent planning major capital expenditures, while only 24 percent of wood products manufacturers planned such expenditures.

Employment and Worker Availability

The outlook for employment in manufacturing increased, with 33 percent expecting increased employment in 2015 and only 6 percent expecting decreases (Figure 6). Last year, 25 percent of manufacturers expected increased employment in 2014 and 7 percent expected decreases. In comparison, the 2010 outlook from Montana manufacturers had 28 percent of respondents expecting decreases in employment while only 11 percent expected to increase employment. Improving economic conditions have contributed to increasing demand for workers, with 37 percent of respondents reporting that they had “significant worker shortages” during 2014 (Figure 7), up from just 18 percent for 2013. While the proportion of
respondents reporting worker shortages has increased, this measure is still less than the 69 percent of firms that reported significant worker shortages for 2006.

**Business-Related Issues**

Survey recipients were given a list of eight business-related issues and were asked to rate each in terms of its importance to their business. There was no specified time frame, indicating the general and enduring nature of these issues.

Once again, health insurance cost was the number one issue, and 78 percent of respondents rated it very important, very similar to last year. Workers’ compensation rates were very important to 57 percent of responding firms, with workers’ compensation rules rated as very important to 51 percent. Energy costs were somewhat less important to respondents with 50 percent rating them as very important, the same share as last year. Raw material availability was rated very important by 56 percent of respondent firms.
Foreign competition was ranked the least important of the eight issues, with 52 percent of respondents rating it as very unimportant and just 15 percent rating it as very important (Figure 8).

In keeping with the 2015 Economic Outlook Seminar’s theme of energy, several questions were posed to survey participants this year. Responses from Montana manufacturers were divided on the question of how energy development in Montana has impacted their businesses. About 60 percent of respondents indicated that the impacts of energy development on their firms were unknown, small, or none. The remaining responses were split evenly between positive and negative. The most common positive responses were from firms that indicated selling products directly or indirectly to the energy sector or its employees, and thus having increased sales and more business activity. The negative responses were from firms that noted increased costs of labor, shortages of workers, and increased energy and transportation costs. Clearly, energy development activity in Montana is not impacting Montana manufacturers uniformly, and most manufacturers are not noticing much impact on their businesses.

In separate questions, two-thirds of BBER’s survey respondents indicated that their firm’s energy costs have increased over the past three years (Figure 9), and almost 60 percent expected their energy costs to increase in 2015 (Figure 10). These results are similar to those from BBER’s 2012 Outlook survey, when 58 percent of firms indicated their energy costs increased from 2010 to 2011, and 55 percent expected energy costs to increase in 2012. Whether energy costs nationally are declining in real terms or not, there is a consistently strong perception among Montana manufacturers that their energy costs are increasing, with fewer than 10 percent of firms surveyed in 2011 and 2014 indicating a decline in past or future energy costs.

When asked if they had a formal energy audit or other assessment of energy use and efficiency in the past three years, 40 percent of firms in the 2015 Outlook survey said that they had. These results are also similar to what was found in the 2012 Outlook survey, when 42 percent of all Montana manufacturers indicated having an energy audit in the previous five years. Although most manufacturers in Montana indicate experiencing increasing energy costs, less than half are taking part in formal energy audits or other assessments of energy use and efficiency. Perhaps this is an area where improvements can be made, helping manufacturers to become more energy efficient and gain more control of their own energy costs.