

**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

About the MMIS

Because of Montana's large size and sparse population, Montana manufacturers are often unaware of other manufacturers within the state, leading to missed business opportunities. The primary goal of the Montana Manufacturers Information System (MMIS) is to eliminate this situation by providing one place where detailed and up-to-date information about Montana manufacturers and service providers can be found. A second goal is to provide additional exposure to Montana manufacturers' products and capabilities. A third goal is to collect and report accurate information about manufacturing in Montana, helping people make informed decisions.

MMIS is located at The University of Montana's Bureau of Business and Economic Research (BBER), and was developed in cooperation with Montana State University's Montana Manufacturing Extension Center (MMEC), the Montana Department of Commerce, and the Bitterroot Economic Development District (BREDD). The system allows for the inclusion of detailed information regarding products, processes, equipment, certifications, and licenses. MMIS currently contains data on over 1,200 facilities, and firms listed in the MMIS can enter the system through a password-protected program to update their profiles.

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

Table 1
Employment in Montana Manufacturing Sectors, 2010 and 2014

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

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

Table 2
Montana Manufacturing Earnings by County, 2010 and 2013

County	2010 Manufacturing Worker Earnings (Millions of 2013\$)	Percent of Total	2013 Manufacturing Worker Earnings (Millions of 2013\$)	Percent of Total	Percent of Change, 2010 to 2013
Yellowstone	265	26%	282	26%	6%
Flathead	149	15%	173	16%	17%
Gallatin	123	12%	138	13%	12%
Missoula	111	11%	100	9%	-10%
Cascade	62	6%	64	6%	4%
Silver Bow	43	4%	45	4%	5%
Lewis and Clark	38	4%	45	4%	19%
Ravalli	39	4%	39	4%	-1%
Lake	21	2%	22	2%	3%
Park	17	2%	19	2%	10%
Lincoln	8	1%	9	1%	12%
Other counties	130	13%	154	14%	18%
Montana total	1,006	100%	1,090	100%	8%

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

reporting decreases in these key measures of overall operating conditions.

Other signs of ongoing improvements among Montana manufacturers included: 46 percent of those surveyed reported making major capital expenditures in 2014, 27 percent reported introducing new product lines, and 96 percent reported that they did not eliminate any capacity.

Manufacturing Categories

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.

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

Figure 1
Overall Outlook for 2015

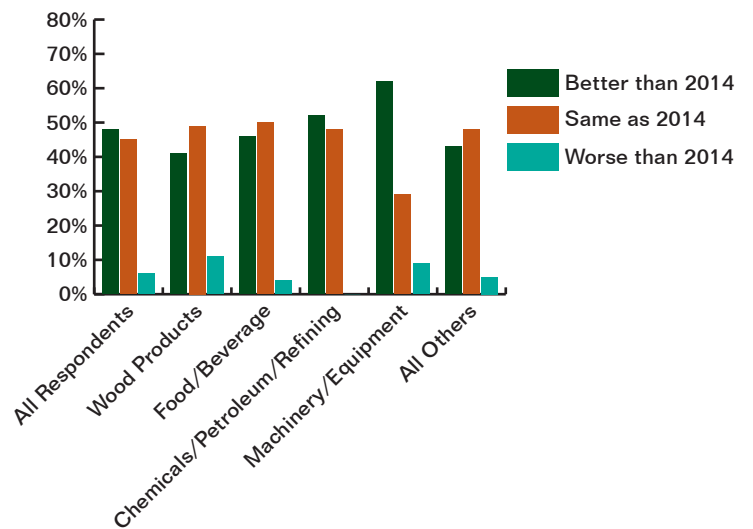
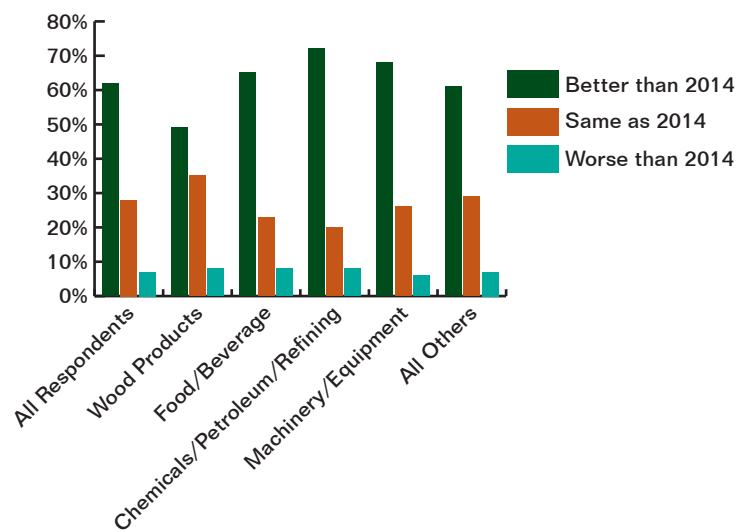
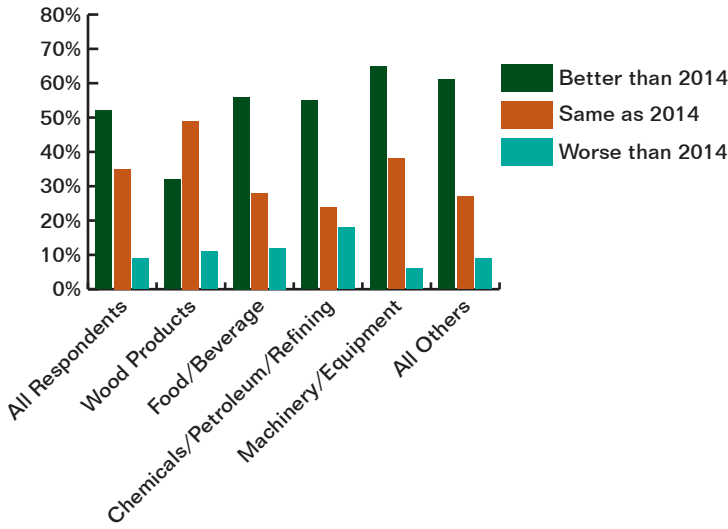


Figure 2
Sales Outlook for 2015

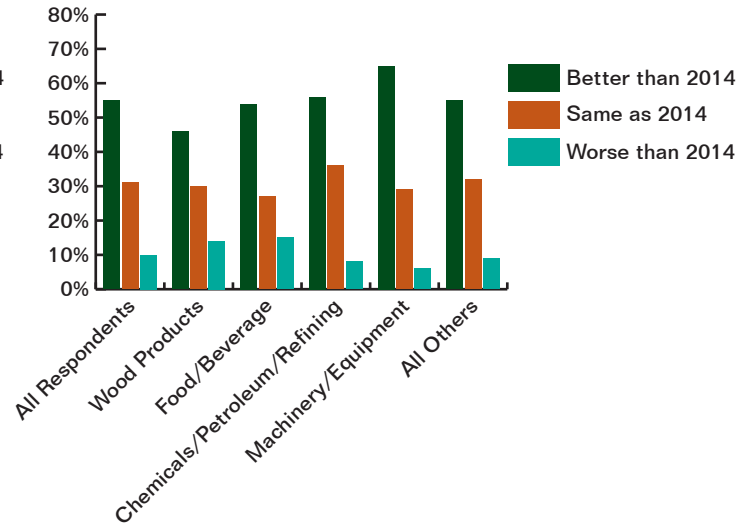


machinery/equipment manufacturers were most optimistic in terms of production and profit, with 65 percent expecting those measures to exceed their 2014 levels. Food/beverage manufacturers were again optimistic regarding the upcoming year, with 65 percent expecting increased sales and 56 percent expecting 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.

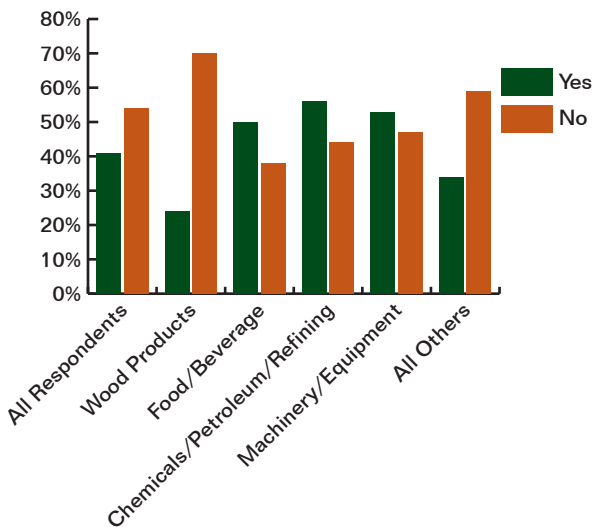
**Figure 3
Production Outlook for 2015**



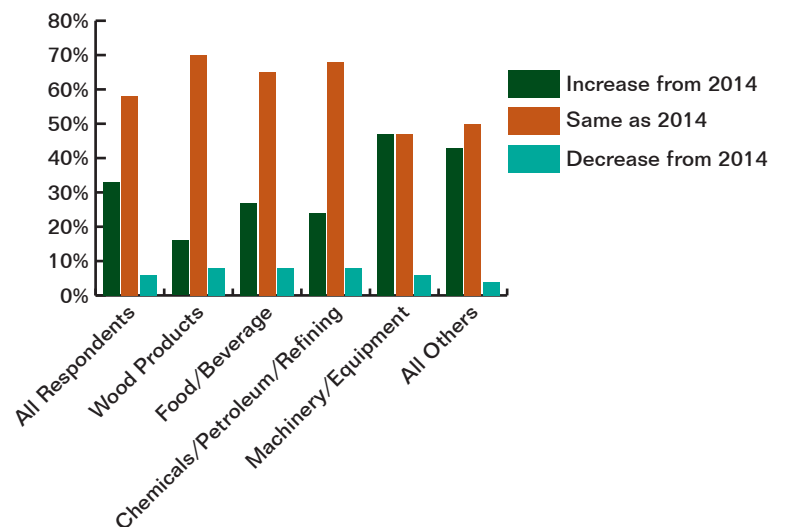
**Figure 4
Profit Outlook for 2015**



**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

Figure 7
Significant Worker Shortage during 2014

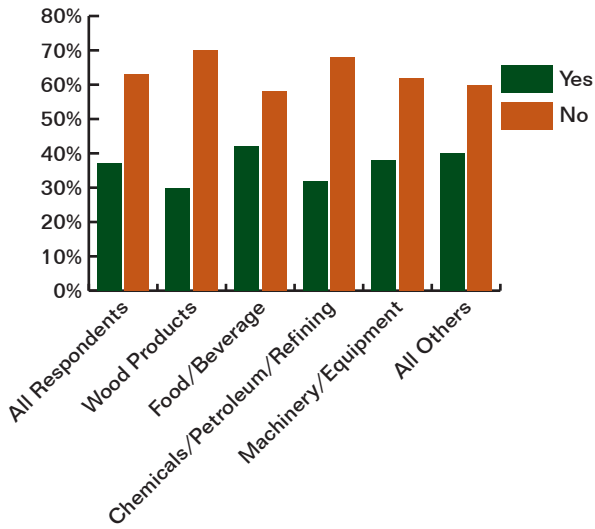


Figure 8
Other Business Related Issues

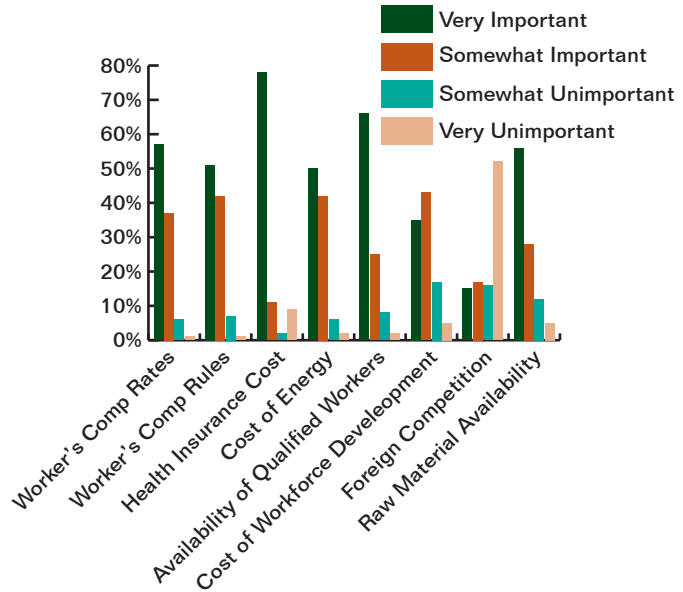


Figure 9
How Have Your Firms' Energy Costs Changed in the Last 3 Years?

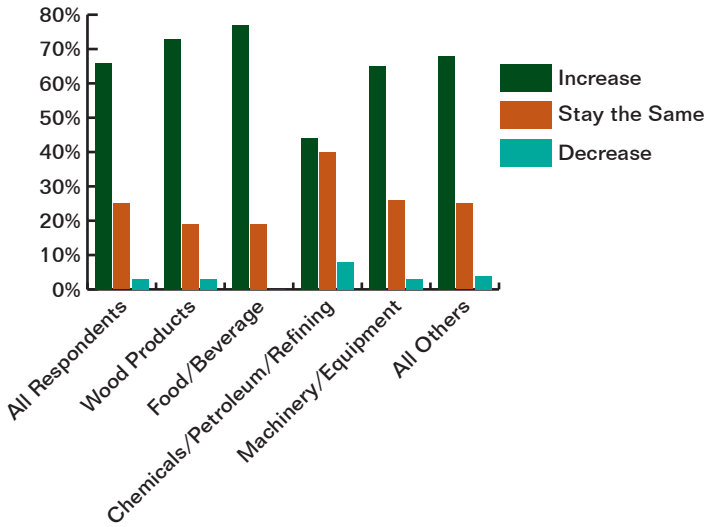
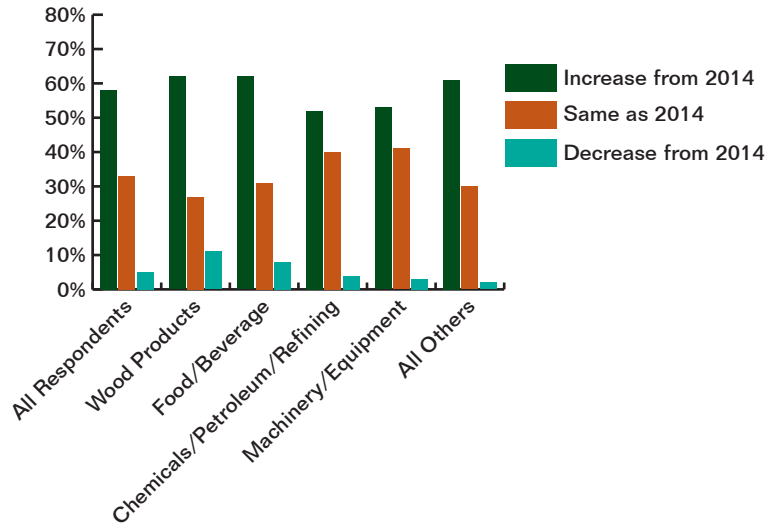


Figure 10
Energy Cost for 2015



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.

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