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2019 MONTANA MANUFACTURERS SURVEY

EXECUTIVE SUMMARY

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BUREAU OF BUSINESS AND ECONOMIC RESEARCH
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Contents

Introduction

This report presents the findings of the 2019 Montana Manufacturers Survey. The initial Montana Manufacturers Survey was conducted in 1999. Since then, the Bureau of Business and Economic Research (BBER) at the University of Montana has conducted the survey each year. The purpose of the survey is to learn the manufactures' assessment of their plant's economic performance in 2018 and their outlook for 2019.

The 20th annual survey was conducted from April 15th through May 13th 2019. The survey was administered by telephone. In order to increase the validity of the survey this year, BBER supplemented its list of manufacturers taken from the Montana Manufacturing Information System (MMIS). In addition to the MMIS, BBER added manufacturers randomly selected from the Montana Department of Labor and Industry's list of firms that have one or more employees. BBER sampled a total of 641 manufacturing firms, of which 348 (57 percent) completed the telephone interview. The 348 completions obtained by BBER this year is more than double the number of completions (133) obtained in 2018. This much larger number of completions significantly bolsters the accuracy of the estimates presented in this report.

The findings of the surveys are a crucial input for evaluating Montana's manufacturing industry. While some of the information is usually presented at the Montana Economic Outlook Seminar and the Montana Business Quarterly, this publication provides a detailed and comprehensive presentation of the survey findings. Additional information and analyses of the Montana economy, economic conditions throughout the state and major sectors of the state's economy can be found in the Montana Business Quarterly and on the bureau's website www.bber.umt.edu.

About the Montana Manfuacturing Information System

The Montana Manufacturing Information System (MMIS) was created to improve Montana manufacturers' knowledge of other manufacturers in the state with whom they may engage in profitable business arrangements. Montana is a large state with a small population, making it difficult to know who is doing what. Some Montana manufacturers may be unaware of other manufacturers in the state leading to missed business opportunities. The primary goal of the Montana Manufacturers Information System is to provide in one place detailed and up-to-date information about manufacturers in Montana. A second goal is to provide additional exposure to Montana manufacturers' products and capabilities. The third goal is to improve decision-making by collecting and reporting accurate information about manufacturing in Montana.

MMIS resides at the Bureau of Business and Economic Research at the University of Montana. It has been developed jointly by BBER, Montana State University's Montana Manufacturing Extension Center and the Montana Department of Commerce. Detailed information about products, processes, equipment, certifications and licenses are contained in this information system. There are data for over 1,200 establishments and MMIS members can enter the system through a password protected program to update their information.

An Overview of Montana Manufacturing

Manufacturing in Montana is predominantly performed by small businesses. The U.S. government reports 1,634 entities conducting manufacturing activities. The average size of a manufacturing establishment with employees is 18 workers. More than half of these establishments have less than five workers. Montana has no manufacturers with 500 or more workers.

Some quick facts about Montana manufacturing:

- Employed about 25,100 workers, including the self-employed.
- Accounted for roughly 17 percent of Montana's economic base.
- Paid about $52,500 per year in earnings, well above the statewide average of $44,000.

Trends in Manufacturing

Over the last few decades, manufacturing has provided fewer jobs in both the U.S. and Montana. But increased labor productivity has led to continued growth in manufactured goods at about the same rate as the other sectors of the economy.

Earnings in the manufacturing sector in Montana have grown more rapidly than both total income and state GSP since the end of the Great Recession in 2012. This growth in earnings has not been uniformly distributed across all sectors of manufacturing, with sectors like beverages and tobacco experiencing rapid growth while other sectors such as wood products manufacturing are in decline.

The U.S. economy has been in the recovery phase of a business cycle since 2009. Although growth has been slow and volatile, the U.S. unemployment rate is now approaching the full employment level of 4 percent. One of the consequences for Montana manufacturers is reported in Table 1. The survey of manufacturers in 2016 found that almost one-third of manufacturing plants reported that they had a shortage of workers, while that number increased to almost three-fourths in 2017. In 2018, the number of manufacturers reporting significant worker shortage was back down to roughly one-quarter. While this is a marked improvement over last year, finding and keeping competent workers remains a top concern for most manufacturers in the state.

Table 1. *Did your plant have a significant shortage of workers at any time during 2018?*

	Yes in 2017	Yes in 2018
Total manufacturing	71%	23%
Wood products	81%	26%
Chemical/refining/metallic products	67%	14%
Food and beverage	84%	20%
Machinery/equipment	70%	18%
All other manufacturing	63%	27%

Manufacturing Categories

The U.S. government provides 22 general categories and more than a thousand detailed subcategories for manufacturing. For this report, these categories have been combined into five. This smaller list enables a manageable analysis of general trends while protecting the identity of individual respondents. For many of the detailed manufacturing categories and several of the general categories, there are only a few firms or even just a single firm. In these cases, the identity and characteristics of the respondent could be easily inferred.

Wood Products

Establishments that harvest and/or process timber into products, such as lumber, plywood, log homes, medium density fiberboard, particleboard, post and polls, as well as establishments that further process primary wood products into items, such as furniture, laminated beams, trusses, window and door frames, and wood carvings.

Chemicals/Petroleum Refining/Metallic and Nonmetallic Products

Establishments that transform organic and inorganic raw materials by a chemical process or by transforming mined or nonmetallic minerals, as well as establishments engaged in the refining of crude petroleum, and establishments engaged in smelting and refining ferrous and nonferrous metals. Examples include oil refineries, high-tech silicon production and personal care products.

Food and Beverage

Establishments 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, bakeries, dairies, breweries, wineries and distilleries.

Machinery/Equipment

Establishments engaged in manufacturing machinery, equipment or instruments. Included are industrial and commercial machinery, computer and electrical equipment, transportation equipment and fabricated metals. Examples include high-tech measurement equipment, truck campers, and welded and stamped products.

All Other Manufacturing

Establishments engage in light manufacturing, including 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.

The Year 2018 in Review

Montana manufacturers were asked to report on their plants' performance in 2018. Survey respondents were queried about a number of indicators and whether it increased, decreased or stayed the same during 2018. Tables 2 through 5 summarize their responses. The tables have the same format. The percentage of respondents who said the indicator was unchanged or increased in 2018 are shown in the table. The figure for decreased is not reported but can be calculated. Also reported is the percentage of respondents who reported increased for the same question in the previous year's survey, which provides a measure of the trend from 2017 to 2018.

Montana manufacturers reported that 2018 was a moderately positive year. Far more respondents reported unchanged or increased in the economic indicators. The respondents also said that 2018 was about the same or better than 2017. Worker availability was cited as the major issues facing manufacturers in 2018.

Table 2. *For calendar year 2018, did your plant's gross sales increase, stay about the same, or decrease from 2017?*

About 51 percent of establishments said their gross sales increased, while 30 percent said they were unchanged in 2018. The sector with the greatest reported increase was machinery/equipment manufacturers with 56 percent reporting increased sales. The year 2018 was quite similar 2017 in terms of the percentage of firms reporting increased gross sales. This was true of each of the manufacturing categories.

	Unchanged in 2018	Increased in 2018	Increased in 2017
Total manufacturing	30%	51%	52%
Wood products	45%	45%	38%
Chemical/refining/metallic products	25%	53%	50%
Food and beverage	33%	50%	58%
Machinery/equipment	25%	56%	58%
All other manufacturing	28%	52%	53%

Table 3. *For calendar year 2018, did your plant's production increase, stay about the same or decrease from 2017?*

Production was up during 2018 at 54 percent of the manufacturing plants and 26 percent reported no change. For the seconds straight year, 2018 saw more plants reporting increases in production compared to the previous survey. Also, these trends were strongly positive across the detailed industries – with the majority of plants in all industries reporting increases between 2017 and 2018.

	Unchanged in 2018	Increased in 2018	Increased in 2017
Total manufacturing	26%	54%	46%
Wood products	41%	50%	38%
Chemical/refining/metallic products	22%	58%	36%
Food and beverage	24%	52%	53%
Machinery/equipment	25%	56%	53%
All other manufacturing	25%	55%	50%

Table 4. *For calendar year 2018, did your plant's profits increase, stay about the same or decrease from 2017?*

Half of the respondents said that profits increased in 2018. Another 27 percent said they were unchanged. The largest percentage of respondents saying that profits increased in 2018 were in food and beverage manufacturing, while the fewest were in machinery and equipment. Overall, a significantly higher percentage of respondents said profits increased in 2018 over 2017.

	Unchanged in 2018	Increased in 2018	Increased in 2017
Total manufacturing	27%	50%	41%
Wood products	32%	44%	33%
Chemical/refining/metallic products	23%	51%	42%
Food and beverage	28%	54%	39%
Machinery/equipment	25%	31%	44%
All other manufacturing	26%	51%	46%

Table 5. *By the end of 2018, did your plant make any major capital expenditure in facilities or equipment during the year?*

Among manufacturers from all sectors, 42 percent reported making major capital expenditures in facilities or equipment in 2018. Machinery and equipment manufacturers had the highest proportion of affirmative responses to this question at 59 percent, while the lowest affirmative response rate in this category was among wood products manufacturers.

	Yes in 2018
Total manufacturing	42%
Wood products	32%
Chemical/refining/metallic products	43%
Food and beverage	48%
Machinery/equipment	59%
All other manufacturing	40%

Table 6. *By the end of 2018, did your plant introduce any major new product lines?*

The majority of manufacturers did not introduce new product lines in 2018, though there was some variation across manufacturing sectors. Food and beverage manufacturers had the highest rates of new product lines, with 28 percent reporting in the affirmative, while wood products and chemical/refining/metallic producers had the lowest rates of new product introduction in 2018.

	Yes in 2018
Total manufacturing	21%
Wood products	15%
Chemical/refining/metallic products	16%
Food and beverage	28%
Machinery/equipment	24%
All other manufacturing	22%

Table 7. *By the end of 2018, did your plant permanently eliminate production capacity during the year?*

As seen in table 7, very few manufacturers reported permanently eliminating production capacity during 2018. Out of respondents across all sectors, only 3 percent of manufacturers eliminated production capacity. Chemical/refining/metallic producers had no reported production elimination, while the highest rate of production elimination was only the 6 percent of machinery/equipment manufacturers who responded to the survey.

	Yes in 2018
Total manufacturing	3%
Wood products	3%
Chemical/refining/metallic products	0%
Food and beverage	3%
Machinery/equipment	6%
All other manufacturing	5%

Table 8. *By the end of 2018, was your plant forced to temporarily curtail production for reasons other than normal maintenance or downtime?*

While very few manufacturers permanently reduced production capacity in 2018 (as seen in Table 7), a slightly higher percentage of manufacturers reported temporary production reductions. Across all sectors of manufacturing respondents, 11 percent reported temporarily curtailing production, with the largest proportion occurring in the wood products sector, and the smallest proportion occurring among food and beverage manufacturers.

	Yes in 2018
Total manufacturing	11%
Wood products	21%
Chemical/refining/metallic products	11%
Food and beverage	6%
Machinery/equipment	12%
All other manufacturing	12%

Table 9. *What happened to your plant's number of employees?*

Approximately 32 percent of the respondents said employment increased at their plant, while about 56 percent said employment was unchanged in 2018. The increased proportion of respondents reporting increased employment in their plants may explain some of the results found in Table 1, where significantly less respondents reported worker shortages relative to the previous year's survey.

	Unchanged in 2018	Increased in 2018	Increased in 2017
Total manufacturing	56%	32%	24%
Wood products	62%	21%	19%
Chemical/refining/metallic products	58%	35%	15%
Food and beverage	58%	35%	16%
Machinery/equipment	62%	31%	30%
All other manufacturing	53%	32%	35%

Table 10. *What were the major issues that affected your plant in 2018?*

The number one major issue affecting manufacturers across all sectors in 2018 was the availability of workers or employee turnover. The fourth highest response was the availability of skilled or qualified workers. This is clearly the most important issue faced by manufacturers in 2018. Several other issues received multiple responses, and are shown in Table 6.

Rank	Issue	Number of respondents
1	Availability of workers/employee turnover	67
2	Availability or cost of raw materials	22
3	Less demand/loss of contract/loss of customers/need more customers	21
4	Availability of skilled or qualified workers	20
5	Increased demand/more work than can be done	13
6	Ownership change/location change	10
7	Competition	10

Forecasts for 2019

Montana manufacturers' outlook for 2019 is summarized in Tables 8 through 14. As in the previous section, the percentage of respondents saying their outlook for 2019 was improved or unchanged from 2018 is reported. In addition, the percentage of optimistic respondents for 2018 is also reported. This provides and indicator of whether the respondents are more or less optimistic about 2019 as compared to 2018.

Table 11. *Looking ahead to calendar year 2019, what do you anticipate will happen to your plant's production in 2019?*

About 61 percent of the manufacturing plants said that their production would increase in 2018 over that of 2017 and an additional 33 percent said they will remain unchanged. The overall optimism of manufacturers about 2019 was approximately the same as last year (62 percent versus 61 percent). Food and beverage producers were the most optimistic about 2019 production and they were also among the most optimistic during the previous year.

	Be about the same as 2018	Increase over 2018	Increase over 2017
Total manufacturing	33%	61%	62%
Wood products	52%	45%	57%
Chemical/refining/metallic products	41%	54%	52%
Food and beverage	26%	66%	68%
Machinery/equipment	35%	59%	77%
All other manufacturing	29%	64%	54%

Table 12. *What do you anticipate will happen to the prices you receive for your plant's products in 2019?*

About 49 percent of the respondents said they expected the prices of their products to increase in 2019. This is a significant reduction over the 62 percent that said product prices would increase in 2018. The largest reduction in sentiment was among chemical/refining/metallic producers where the percentage saying product prices would rise went from 73 percent to 43 percent. Most of the manufacturing categories reported a reduction in optimism for 2019 as compared to 2018, with the exception being machinery/equipment producers.

	Be about the same as 2018	Increase over 2018	Increase over 2017
Total manufacturing	47%	49%	62%
Wood products	41%	50%	62%
Chemical/refining/metallic products	54%	43%	73%
Food and beverage	53%	45%	67%
Machinery/equipment	29%	65%	62%
All other manufacturing	46%	51%	51%

Table 13. *What do you anticipate will happen to your plant's gross sales in 2019?*

Roughly 65 percent of the manufacturing respondents said that they expected gross sales to increase in 2019 and another 28 percent thought they would remain unchanged. The most optimistic about 2019 were the machinery/equipment producers where 76 percent thought that 2019 gross sales would increase. Among all manufacturers, the level of optimism was largely unchanged, with 64 percent expecting increased sales in 2018. The greatest improvement was among other manufacturing, where the level of optimism increased by 10 percentage points over last year. The change in optimism was mixed across the primary manufacturing categories.

	Be about the same as 2018	Increase over 2018	Increase over 2017
Total manufacturing	28%	65%	64%
Wood products	45%	45%	57%
Chemical/refining/metallic products	30%	65%	59%
Food and beverage	24%	71%	69%
Machinery/equipment	24%	76%	81%
All other manufacturing	27%	65%	55%

Table 14. *What do you anticipate will happen to your plant's profits in 2019?*

Montana manufacturers are generally optimistic about profits in 2019. About 61 percent said they expect their plant to have increased profits in 2019. Approximately 30 percent said they expected profits to remain unchanged. The machinery/equipment and food/beverage manufacturers were the most optimistic – about 65 percent in each sector expect higher profits in 2019. The biggest improvement in profit expectations was in the "other" category; the percent of respondents expecting profits to increase rose from 50 percent in 2018 to 63 percent in 2019.

	Be about the same as 2018	Increase over 2018	Increase over 2017
Total manufacturing	30%	61%	59%
Wood products	38%	47%	46%
Chemical/refining/metallic products	37%	57%	52%
Food and beverage	25%	65%	59%
Machinery/equipment	35%	65%	84%
All other manufacturing	27%	63%	50%

Table 15. *What do you anticipate will happen to the number of employees in your plant in 2019?*

Montana manufacturers are not very positive about employment growth. Approximately 59 percent of the respondents said they expected their plant's employment would be unchanged in 2019, while 38 percent said there would be more workers at their plant. The most optimistic about employment growth were the machinery/equipment respondents (53 percent). And while the least optimistic by comparison were those in the wood products industry (29 percent), this level of optimism is almost double that of last year in the same industry. Overall, there was little change between 2018 and 2019 in the optimism of manufacturers concerning employment growth.

	Be about the same as 2018	Increase over 2018	Increase over 2017
Total manufacturing	59%	38%	42%
Wood products	68%	29%	14%
Chemical/refining/metallic products	55%	45%	37%
Food and beverage	64%	32%	42%
Machinery/equipment	41%	53%	69%
All other manufacturing	59%	38%	36%

Table 16. *What do you anticipate will happen to the costs of your major inputs in 2019?*

About 53 percent of the respondents said they thought input costs would rise in 2018, while another 43 percent said they would remain unchanged. The responses across the components of manufacturing were relative uniform. The greatest increase in input costs between 2018 and 2019 was expected by machinery/equipment producers.

	Be about the same as 2018	Increase over 2018	Increase over 2017
Total manufacturing	43%	53%	58%
Wood products	59%	38%	59%
Chemical/refining/metallic products	43%	47%	59%
Food and beverage	38%	59%	61%
Machinery/equipment	35%	65%	62%
All other manufacturing	42%	54%	50%

Table 17. *Considering all factors, how would you rate your overall outlook for your plant in 2019?*

Montana manufacturers were mildly optimistic about 2019. About 58 percent said they expected 2019 to be better with roughly 37 percent saying they expected no change. The most optimistic were the food/beverage manufacturers followed by the “all other” manufacturing firms. There was modest overall reduction in sentiment, with the percent of respondents believing their outlook would improve, falling from 65 percent in 2018 to 58 percent in 2019. The greatest reduction in optimistic outlook was in the machinery/equipment products respondents.

	Be about the same as 2018	Increase over 2018	Increase over 2017
Total Manufacturing	37%	58%	65%
Wood Products	50%	41%	50%
Chemical/refining/metallic products	43%	52%	69%
Food and beverage	32%	65%	63%
Machinery/equipment	53%	47%	84%
All other manufacturing	33%	62%	53%

Table 18. *Please list the major issues that will affect your plant in 2019.*

In Table 18 we see the issues that manufacturers anticipate confronting in 2019. As we would assume, many of the top issues anticipated by manufacturers are those issues that were experienced during 2018. We see in Table 18 that two of the top three issues relate to labor availability. This reinforces the notion that while manufacturers reported less occasions of significant worker shortage in 2018 compared to 2017, the issue of labor availability continues to be a concern for manufacturers going forward.

Rank	Issue	Number of respondents
1	Availability of workers/employee turnover	44
2	Availability or cost of raw materials	31
3	Availability of skilled or qualified workers	19
4	Increased demand/more work than can be done	17
5	Competition	16
6	Economic conditions	16
7	Ownership change/location change	12
8	Less demand/loss of contract/loss of customers/need more customers	12
9	Tariffs	11
10	Mother nature/seasonal/weather	9

Table 19. *Important issues faced by manufacturers in 2018*

The availability of qualified workers is the most important issue faced by manufacturers in Montana. While the percentage of respondents perceiving it as “very important” has reduced some, it remains a top issue. The cost of health insurance, which last year had the highest rates of “very important” responses, has reduced in importance from 76 percent to 60 percent of respondents in 2018. Another notable response to this year’s survey is that workers comp rates were evaluated by 45 percent of manufacturers to be a very important issue in 2018, compared to 57 percent in 2017. Most of the other issues faced by Montana manufacturers were given similar importance levels to 2017.

Rank	Issue	Percent of respondents saying "very important"	
		2018	2017
1	Availability of qualified workers	67%	73%
2	Health insurance cost	60%	76%
3	Raw material availability	54%	50%
4	Workers comp rates	45%	57%
5	Cost of energy	41%	37%
6	Workers comp rules	39%	41%
7	Cost of workforce development	30%	27%
8	Foreign competition	11%	14%