



2018 MONTANA MANUFACTURERS SURVEY

June 2018

Prepared by:

Paul E. Polzin, Director Emeritus
Bureau of Business and Economic Research
University of Montana
Missoula, Montana 59812

Prepared for:

Montana Manufacturing Extension Center
Montana State University
Bozeman, Montana 59717



**BUREAU OF BUSINESS AND
ECONOMIC RESEARCH**
UNIVERSITY OF MONTANA



UNIVERSITY OF
MONTANA



MONTANA
MANUFACTURING
EXTENSION CENTER

TABLE OF CONTENTS

Introduction	3
About the Montana Manufacturing Information System	3
An Overview of Montana Manufacturing	4
Trends in Manufacturing	4
Manufacturing Categories	5
The Year 2017 in Review	6
Forecasts for 2018	9

INTRODUCTION

This report presents the findings of the 2018 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 plants economic performance in 2017 and their outlook for 2018.

The 19th annual survey was conducted in early 2018. As in past years, the pool of potential respondents was chosen from the Montana Manufacturing Information System (MMIS), which includes Montana's largest manufacturers as measured by employment, as well as a sample of smaller establishments representing a wide variety of sectors. Of all establishments contacted, 133 or 59 percent responded to the survey. This project was delayed from late 2017 to early 2018, which may have contributed to a lower response rate.

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 BBER's 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 MANUFACTURING 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 University of Montana's Bureau of Business and Economic Research. 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

The traditional image of a factory with a smokestack no longer applies to Montana manufacturing. In fact, manufacturing in Montana is dominated by small businesses. The U.S. government reports almost 3,000 entities conducting manufacturing activities. Of these, about 1,250 have employees. The average size of a manufacturing establishment with employees is 18 workers. About one-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 24,500 workers, including the self-employed.
- Accounted for roughly 16 percent of Montana’s economic base.
- Paid about \$51,900 per year in earnings, well above the statewide average of \$44,000.
- The value of shipments was about \$9.4 billion.

TRENDS IN MANUFACTURING

Manufacturing has provided fewer and fewer jobs in both the U.S. and Montana over the past several decades. But increase labor productivity has led to continued growth in manufactured goods at about the same rate as the other sectors of the economy.

Since the trough of the Great Recession in 2009, U.S. manufacturing employment has increased about 5 percent. In Montana, employment has risen 13 percent during the same period. If the wood products industry is excluded, employment in the remaining sectors of Montana manufacturing grew almost 23 percent. In other words, the most recent data show employment growth in manufacturing in both the U.S. and Montana, with much faster growth in Montana.

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 found that almost three-fourths of manufacturing plants reported that they had a shortage of workers in 2017. In addition, this percentage more than doubled from 2016 to 2017, from 31 percent to 71 percent. Worker shortages were reported in all sectors of Montana manufacturing.

Table 1. Did your plant have a shortage of workers?

	Yes in 2016	Yes in 2017
Total manufacturing	31%	71%
Wood products	29%	81%
Chemical/refining/metallic products	39%	67%
Food and beverage	30%	84%
Machinery/equipment	20%	70%
All other manufacturing	41%	63%

MANUFACTURING CATEGORIES

The U.S. government provides 22 general and more than a thousand detailed sub-categories 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 2017 IN REVIEW

Montana manufacturers were asked to report on their plants' performance in 2017. Survey respondents were queried about a number of indicators and whether it increased, decreased, or stayed the same during 2017. Table 2 through 5 summarize the responses. The tables have the same format. The percentage of respondents who said the indicator was unchanged or increased in 2017 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 2016 to 2017.

Montana manufacturers reported that 2017 was a moderately positive year. Far more respondents reported unchanged or increased in the economic indicators. The respondents also said that 2017 was about the same or better than 2016. Health insurance costs and worker availability were cited as major issues facing manufacturers in 2017.

Table 2. What happened to your plant's gross sales?

About 52 percent of establishments said their gross sales increased, while 29 percent said they were unchanged in 2017. The sectors with the greatest reported increase were food and beverage and machinery/equipment manufacturers with 58 percent reporting increased sales. The growth in food and beverage perhaps reflects new breweries, wineries and distilleries. The year 2017 was better than 2016 in terms of the percentage of firms reporting increased gross sales. This was true of each of the manufacturing categories.

	Unchanged in 2017	Increased in 2017	Increased in 2016
Total manufacturing	29%	52%	37%
Wood products	33%	38%	36%
Chemical/refining/metallic products	35%	50%	37%
Food and beverage	37%	58%	44%
Machinery/equipment	21%	58%	33%
All other manufacturing	27%	53%	41%

Table 3. What happened to your plant's production?

Production was up during 2017 at 46 percent of the manufacturing plants and 33 percent reported no change. Slightly more than one-half of the food and beverage and machinery/equipment plants reported increases in 2017. Overall, the year 2017 saw slightly more plants reporting increases in production compared to 2016. The trends were mixed in the detailed industries – about half reported increases and half reported decreases between 2016 and 2017.

	Unchanged in 2017	Increased in 2017	Increased in 2016
Total manufacturing	33%	46%	40%
Wood products	29%	38%	36%
Chemical/refining/metallic products	44%	36%	43%
Food and beverage	37%	53%	41%
Machinery/equipment	25%	53%	32%
All other manufacturing	32%	50%	54%

Table 4. What happened to your plant's profits?

About 41 percent of the respondents said that profits increased in 2017. Another 31 percent said they were unchanged. The largest percentage of respondents saying that profits increased in 2017 were in other manufacturing, while the fewest were in wood products. Overall, about the same percentage of respondents said profits increased in 2017 as in 2016.

	Unchanged in 2017	Increased in 2017	Increased in 2016
Total manufacturing	31%	41%	39%
Wood products	29%	33%	29%
Chemical/refining/metallic products	35%	42%	42%
Food and beverage	44%	39%	41%
Machinery/equipment	19%	44%	40%
All other manufacturing	33%	46%	42%

Table 5. What happened to your plant's employment?

Approximately 24 percent of the respondents said employment increased at their plant, while about 63 percent said employment was unchanged in 2017. In general, there were few differences among the components of manufacturing in terms of reported increases in employment in 2017 and between 2016 and 2017.

	Unchanged in 2017	Increased in 2017	Increased in 2016
Total manufacturing	63%	24%	28%
Wood products	76%	19%	25%
Chemical/refining/metallic products	70%	15%	16%
Food and beverage	74%	16%	26%
Machinery/equipment	74%	30%	39%
All other manufacturing	74%	35%	30%

Table 6. Important issues faced by Montana manufactures in 2017.

The two most important issues facing manufacturers in 2017 were health insurance costs and the availability of qualified workers. Several of the other concerns received relatively low overall rankings, but were very important for certain sectors of manufacturing. For example, energy costs were very important to most manufacturers except those in chemical/refining/metallic products and machinery/equipment categories. In addition, raw material availability was very important to most manufacturers, except those in the machinery/equipment category.

Rank	Issue	Percent of respondents saying "very important."
1	Health insurance costs	76%
2	Qualified workers availability	73%
3	Workmen's comp rates	57%
4	Raw material availability	50%
5	Workmen's comp rules	41%
6	Cost of energy	37%
7	Workforce development costs	27%
8	Foreign competition	14%

Table 7. Respondents' comments concerning important issues.

Respondents were given an additional opportunity to identify important issues in an open-ended question. The first three quotes are examples of the comments that repeated the concerns about health insurance and worker availability. The remaining quotes are examples of comments addressing an additional concern about regulation in general.

"Finding good help."

"Trying to hire and keep qualified employees."

"Cost of health insurance is a major issue."

"Insurance costs, mostly health."

"New and hopefully rescinded overtime rules."

"Government regulation both Federal and state."

"Regulation."

FORECASTS FOR 2018

Montana manufacturers' outlook for 2018 is summarized in Tables 8 through 14. As in the previous section, the percentage of respondents saying their outlook for 2018 was improved or unchanged from 2017 is reported. In addition, the percentage of optimistic respondents for 2017 is also reported. This provides an indicator of whether the respondents are more or less optimistic about 2018 as compared to 2017.

Table 8. What will happen to your plant's production?

About 62 percent of the manufacturing plants said that their production would increase in 2018 over that of 2017 and an additional 32 percent said they will remain unchanged. The overall optimism of manufacturers about 2018 was approximately the same as last year (60 percent vs. 62 percent). Machinery/equipment producers were the most optimistic about 2018 production and they were also among the most optimistic during the previous year. The greatest improvement in their outlook was among food and beverage producers, where those expecting an increase in 2018 was 68 percent compared to 34 percent the previous year.

	Unchanged in 2018	Increased in 2018	Increased in 2017
Total manufacturing	32%	62%	60%
Wood products	38%	57%	61%
Chemical/refining/metallic products	37%	52%	53%
Food and beverage	32%	68%	35%
Machinery/equipment	20%	77%	68%
All other manufacturing	37%	54%	72%

Table 9. What will happen to prices for your plant's products?

About 62 percent of the respondents said they expected the prices of their products to increase in 2018. This is a significant improvement over the 40 percent that said product prices would increase in 2017. Once again, the great improvement was among food and beverage producers where the percentage saying product prices would rise went from 27 percent to 67 percent. All of the manufacturing categories reported an improvement in optimism for 2018 as compared to 2017.

	Unchanged in 2018	Increased in 2018	Increased in 2017
Total manufacturing	36%	62%	40%
Wood products	33%	62%	33%
Chemical/refining/metallic products	23%	73%	50%
Food and beverage	33%	67%	27%
Machinery/equipment	38%	62%	44%
All other manufacturing	49%	51%	37%

Table 10. What will happen to your plant's gross sales?

Roughly 64 percent of the manufacturing respondents said that they expected gross sales to increase in 2018 and another 31 percent thought they would remain unchanged. The most optimistic about 2018 were the machinery/equipment producers where 81 percent thought that 2018 gross sales would increase. Among all manufacturers, the level of optimism was unchanged, with 64 percent also expecting increased sales in 2017. The greatest improvement was among food and beverages producers, where the level of optimism almost doubled from last year. The change in optimism was mixed in the other manufacturing categories.

	Unchanged in 2018	Increased in 2018	Increased in 2017
Total manufacturing	31%	64%	64%
Wood products	38%	57%	64%
Chemical/refining/metallic products	37%	59%	64%
Food and beverage	26%	69%	35%
Machinery/equipment	19%	81%	73%
All other manufacturing	33%	55%	72%

Table 11. What will happen to your plant's profits?

Montana manufacturers are generally optimistic about profits in 2018. About 59 percent said they expect their plant to have increased profits in 2018. Approximately 32 percent said they expected profits to remain unchanged. The machinery/equipment manufacturers were the most optimistic – about 84 percent expect higher profits in 2018. The biggest improvement in profit expectations was in the food and beverage category; the percent of respondents expecting profits to increase rose from 35 percent in 2017 to 59 percent in 2018.

	Unchanged in 2018	Increased in 2018	Increased in 2017
Total manufacturing	32%	59%	61%
Wood products	45%	46%	57%
Chemical/refining/metallic products	33%	52%	64%
Food and beverage	35%	59%	35%
Machinery/equipment	16%	84%	70%
All other manufacturing	35%	50%	69%

Table 12. What will happen to your plant's employment?

Montana manufacturers are not very positive about employment growth. Approximately 50 percent of the respondents said they expected their plant's employment would be unchanged in 2018, while 42 percent said there would be more workers at their plant. The most optimistic about employment growth were the machinery/equipment respondents (69 percent), while the least optimistic were those in the wood products industry (14 percent.) There was little change between 2017 and 2018 in the overall optimism of manufacturers concerning employment growth. Food and beverage manufacturers reported the largest increase in optimism between 2017 and 2018.

	Unchanged in 2018	Increased in 2018	Increased in 2017
Total manufacturing	50%	42%	39%
Wood products	77%	14%	22%
Chemical/refining/metallic products	56%	37%	32%
Food and beverage	53%	42%	22%
Machinery/equipment	28%	69%	56%
All other manufacturing	49%	36%	47%

Table 13. What will happen to your input costs?

Almost 58 percent of the respondents said they thought input costs would rise in 2018, while another 41 percent said they would remain unchanged. The responses across the components of manufacturing were relative uniform. The greatest increase in input costs between 2017 and 2018 was expected by food and beverage producers.

	Unchanged in 2018	Increased in 2018	Increased in 2017
Total manufacturing	41%	58%	44%
Wood products	41%	59%	48%
Chemical/refining/metallic products	37%	59%	44%
Food and beverage	39%	61%	35%
Machinery/equipment	38%	62%	42%
All other manufacturing	47%	50%	51%

Table 14. What is your overall outlook for your plant?

Montana manufacturers were optimistic about 2018. About 65 percent said they expected 2018 to be better with roughly 30 percent saying they expected no change. The most optimistic were the machinery/equipment manufacturers followed by the chemical/refining/metallic products firms. There was modest overall improvement with the percent of respondents believing their outlook would improve, rising from 55 percent in 2017 to 65 percent in 2018. The greatest improvement in outlook was in the machinery/equipment, food and beverage and chemical/refining/metallic products respondents.

	Unchanged in 2018	Better in 2018	Better in 2017
Total manufacturing	30%	65%	55%
Wood products	50%	50%	57%
Chemical/refining/metallic products	19%	69%	51%
Food and beverage	37%	63%	44%
Machinery/equipment	16%	84%	64%
All other manufacturing	35%	53%	54%