



The Continuing Economic Impact of Craft Brewing in Montana

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Prepared by:

Bureau of Business and Economic Research
University of Montana
Missoula, Montana 59812

Prepared for:

The Montana Brewers Association



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For more information, contact:

Bureau of Business and Economic Research
Gallagher Business Building, Suite 231
Missoula, MT 59812
(406) 243-5113
www.bber.umt.edu



TABLE OF CONTENTS

Executive Summary 4

Survey Findings 6

Policy Analysis with the REMI Model 9

The Economic Impact of Craft Brewing 11

 Impacts Summary 11

 Employment Impacts 11

 Gross Sales Impacts 12

 Compensation Impacts 13

 Population Impacts 13

Craft Breweries in Your Community 14

Summary and Conclusion 15

References 16

EXECUTIVE SUMMARY

Craft brewing represents a sizable, grass-roots industry to the Montana economy. It provides local jobs and incomes, completes purchases from regional merchants, as well as producing a made in Montana product. Craft breweries are playing an increasingly important role within the state, invigorating neighborhoods and bringing communities together over a beverage. Furthermore, brewpubs often appear in historically industrial neighborhoods, reinvigorating and reimagining properties left vacant by passing industry. This study builds on previous work completed in 2012 and 2014, separately, to further the public's understanding of the scope of craft brewing's contributions to the Montana economy. In total, beer production has increased 87 percent from 2010, or at roughly at 13 percent per year. The industry does not seem to be slowing down either – we find production to have grown



by 15 percent in 2015, with seven additional breweries in development yet to start production.

In this study we survey Montana craft brewers to ascertain their production, revenues, employment, payroll and other information. This survey is unique in that we collect data only on Montana based craft brewers, while federal statistics lump all brewing into a single category. The survey results from this study indicate rapid and continuing growth in Montana's brewing sector. From 2010 to 2015, Montana craft beer production increased by 87 percent, while sales have increased by 111 percent and employment by 204 percent. Expenditures increased by 140 percent and payrolls by 154 percent.

These, of course, are just the direct benefits of craft brewing. When we consider all up and downstream effects the footprint of the industry is much larger and we find that because of Montana craft brewing, the state's economy is larger, more prosperous and more populous. The operations of brewers result in a number of economic benefits to the state. Specifically, we find the following additional economic benefits due to brewer operations:

- 1,044 additional permanent, year-round jobs exist in the Montana economy.
- More than \$33 million in personal income is received by Montana households.
- Sales from businesses and organizations based in Montana are more than \$103 million higher.
- The state's population increases by roughly 280 people.

In terms of employment, the majority of impacts are concentrated in the manufacturing sector, which includes brewing, but several other sectors are supported by brewers, including construction, state and local government, and retail trade. The spending of workers employed by breweries, as well as vendor purchases made by the industry, are the drivers that support additional jobs outside of the manufacturing sector.

The Economic Contribution of Craft Brewing in Montana
Impacts Summary

Category	Units	Total
Total Employment	Jobs	1,044
Personal Income	\$ Millions	33.8
Disposable Pers. Income	\$ Millions	28.8
Output	\$ Millions	103.2
Population	People	278

The Bureau of Business and Economic Research was commissioned by the Montana Brewers Association to conduct a study on the economic contribution of craft brewing in the state. This project entailed: (i) working with the MBA to gather information on sales, employment, and employee compensation, as well as other operational information for calendar years 2014 and 2015, (ii) using the policy analysis model (REMI) to present an alternative projection of the state economy in which the craft brewing industry's contributions are absent, and (iii) comparing this projection with the baseline projection to estimate the ultimate impact of the industry. The details of this study are included in this report. BBER worked closely with the MBA to establish an exhaustive list of Montana craft brewers. In total, 61 of 71 breweries responded to our survey for a response rate of 86 percent. Therefore, the results presented in this study may slightly under-represent the impacts of the industry, although we note all of Montana's larger craft breweries provided data.

The Economic Contribution of Craft Brewing in Montana
Employment Summary

Category	Units	Total
Manufacturing	Jobs	718
Construction	Jobs	94
Retail Trade	Jobs	44
State and Local Government	Jobs	40
Health Care and Social Assistance	Jobs	25
Professional, Scientific, and Technical Services	Jobs	20
Accommodation and Food Services	Jobs	20
Other Services, except Public Administration	Jobs	19
Administrative and Waste Management Services	Jobs	11
Real Estate and Rental and Leasing	Jobs	10
Wholesale Trade	Jobs	9
Transportation and Warehousing	Jobs	5
Other	Jobs	29
Total		1,044

SURVEY FINDINGS

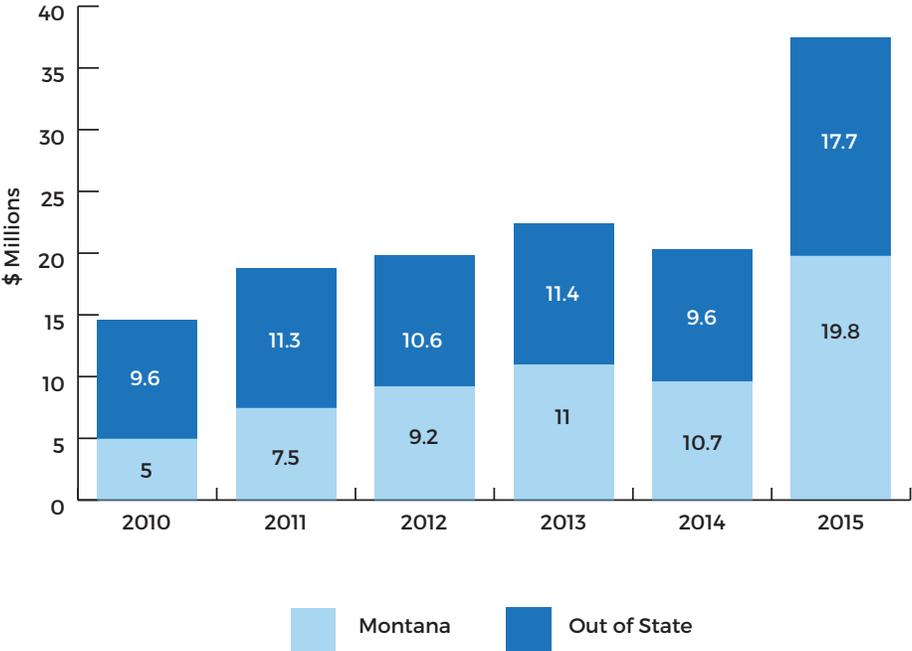
This study builds on the information gathered from two previous surveys completed in 2012 and 2014 which generated data spanning 2010-2013. Data was collected via an online survey administered to a thorough list of Montana craft breweries compiled by the Montana Brewers Association. In total, 61 of 71 breweries contacted supplied information, resulting in a response rate of 86 percent. Of the completed surveys, seven come from breweries in planning and development in 2014 and 2015, and therefore have no production but did submit capital expenditures, payroll, and other information as applicable.

Table 1.1. Survey Data Summary.

Category	2010	2011	2012	2013	2014	2015	2010-15 % Change
Production (bbl)	87,442	102,925	114,340	130,121	142,516	163,217	87%
Sales (\$ Mil.)	21.8	26.1	29.4	33.9	38.8	45.9	111%
Employment	231	320	388	486	569	702	204%
Compensation (\$ Mil.)	5.2	6.4	7.9	9.5	11.2	13.2	154%
Expenditures (\$ Mil.)	15.6	18.8	19.8	22.5	20.3	37.5	140%

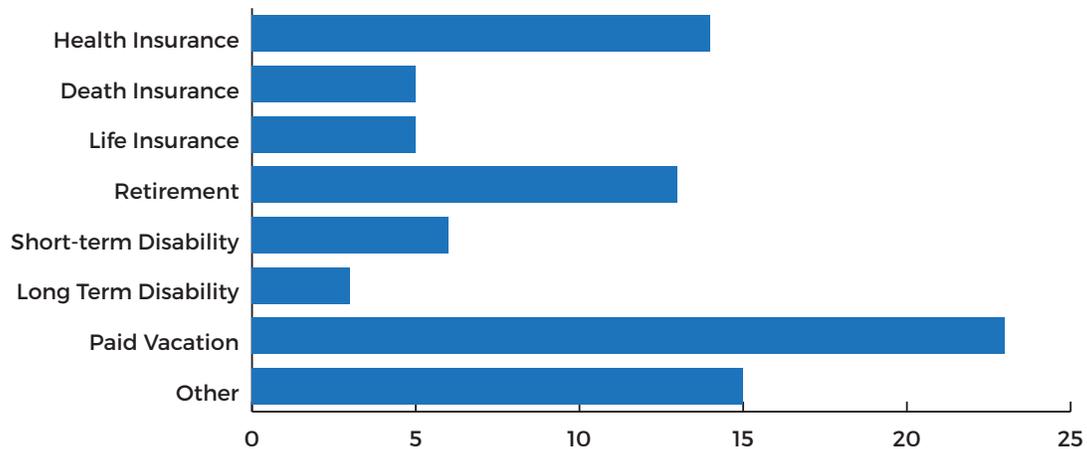
The statewide data collected for this analysis showed that in 2015 Montana brewers directly accounted for nearly \$46 million in gross sales, 702 jobs and \$13.2 million in employee compensation, including benefits. They produced over 163 thousand barrels of beer. As Table 1.1 makes clear, craft brewing is a

Figure 1.2. Montana Brewery Expenditures.



growing industry. Growth has been remarkably steady and the industry shows no signs of slowing down. Beer production was up 15 percent in 2015, contributing to an overall increase of 87 percent from 2010. Measured by other metrics, the growth in brewing is even larger as sales, employment, compensation and expenditures have all more than doubled since 2010.

Figure 1.3. Montana Brewery Employee Benefits.



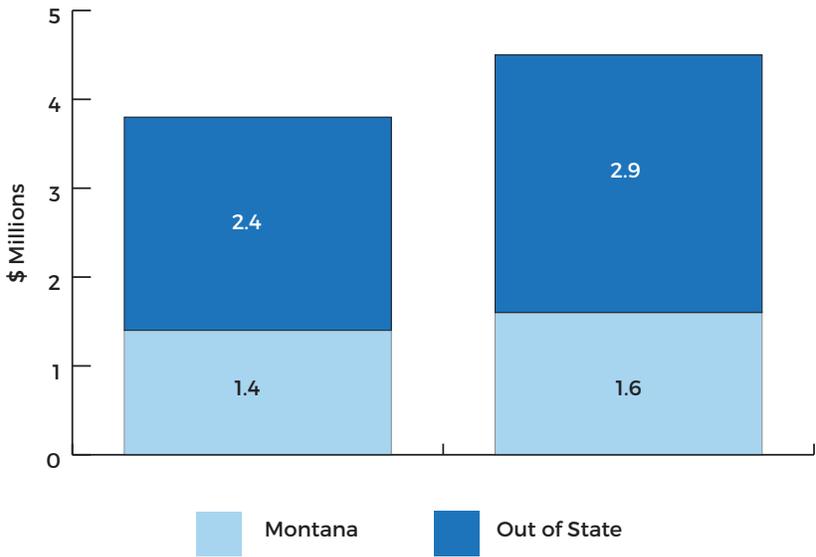
Montana craft breweries are a truly local industry – their customers are often the communities in which they are located. Not only is their demand local, but their suppliers tend to be as well. The expenditures of Montana breweries therefore impact other industries in the state, and the data show a trend toward a larger proportion of the brewery vendor purchases being made from within the state (Figure 1.2). In 2010 38 percent of vendor purchases came from within Montana. By 2013 that grew to 49 percent and in 2015 totaled 53 percent of expenditure, totaling \$19.8 million in spending directly to Montana businesses.

Many Montana breweries provide a variety of benefits to employees (Figure 1.3). Paid vacation and health insurance are the most commonly offered benefits. The ‘other’ benefits offered include a variety of perks, such as health savings account contributions, discounts on merchandise and food, gym memberships, housing assistance and of course, free beer.

A new question was added to the survey in 2015 to better understand the agricultural purchases made by Montana brewers. The process of brewing beer demands hops, yeast, barley, among other agricultural products. Some specialty beers can even include fruits, honey or other products. In 2014 and 2015 roughly 36 percent of those purchases came from agricultural producers within the state of Montana, totaling \$1.4 and \$1.6 million in expenditures in 2014 and 2015, respectively.

The direct impacts of employment, sales and purchases of products used directly in beer production made by craft brewers tend to lag behind the capital expenditures required before a single batch of beer is produced or a taproom opens its doors to the public. Additionally, existing breweries with plans to ramp up production or expand a taproom to meet increasing demand also make major capital investments before the associated jobs and output are generated. These expenditures are particularly relevant in assessing a sector that is growing as rapidly as Montana’s craft brewing industry.

Figure 1.4. Montana Brewery Agriculture Purchases.



To assess the magnitude of future investments and gauge the growth potential of the industry brewers were asked to estimate the value of planned capital investments. According to the brewers surveyed a total of \$17.6 million in capital investments is currently being planned for 2016 and 2017. This is up from an estimated \$9 million planned for 2014 and 2015, suggesting the industry remains poised for further growth.

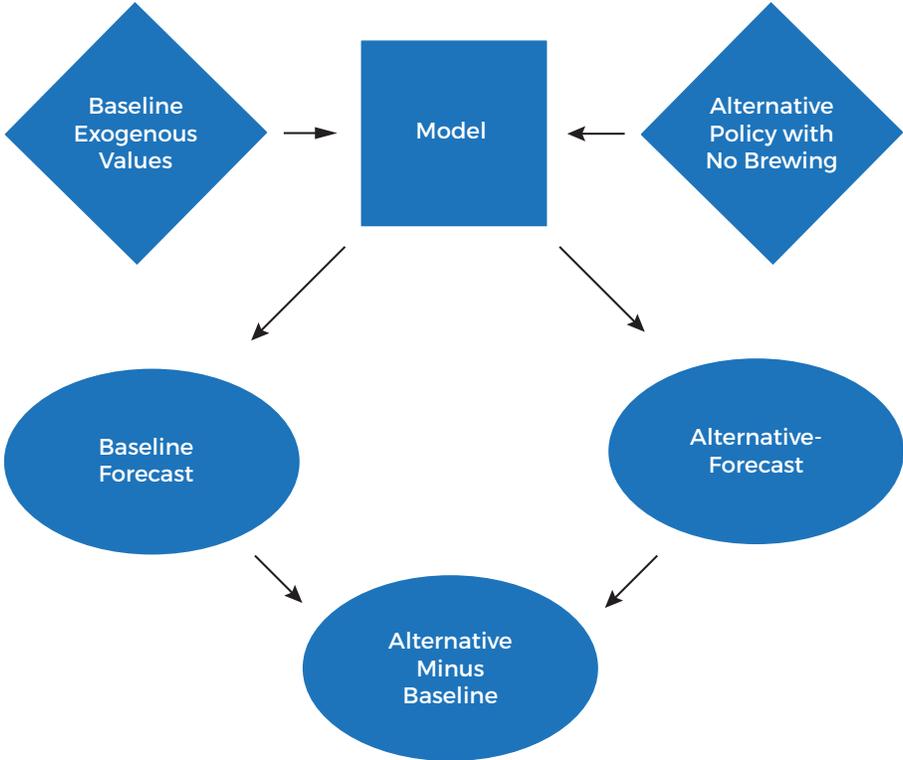
POLICY ANALYSIS WITH THE REMI MODEL

Economic impacts occur as events or activities create new expenditures. New spending that is over and above existing expenditures – and does not simply displace spending elsewhere in the region – not only adds to economic activity, but also induces further spending as the recipients of wages, sales and tax revenues spend a portion of their income in the local economy. Changes in the path of investment, migration, and prices and wages can occur due to new spending as well.

In order to quantify the economic contribution of Montana’s craft brewers, this research was designed to answer the question, “What do the activities of craft brewers contribute to the Montana economy?” To begin the analysis, it was necessary to obtain accurate data on the income flows that the industry itself produces. A brief online survey was administered to brewers to quantify the sales, employment and compensation (including benefits) directly attributable to Montana breweries.

The basic tool used in this study to assess the economic impacts of Montana craft brewing is an economic model, calibrated to represent the interactions in the Montana economy, leased from Regional Economic Models, Inc. The REMI model is one of the best known and most respected analytical tools in the policy analysis arena and has been used in more than a hundred previous studies as well as dozens of peer-reviewed articles in scholarly journals. It is a state-of-the-art econometric forecasting model that incorporates dynamic feedbacks between economic and demographic variables. The REMI model forecasts employment, income, expenditures and populations for counties and regions based on a model containing over 100 stochastic and dynamic relationships, as well as a number of identities. A full explanation of the design and operation of the model can be found in Treyz (1988).

Figure 2.1. The Economic Impact of Craft Brewing Policy Analysis Framework.



The model used in this study groups the state economy into five regions: Northwest, Southwest, North Central, South Central and Eastern. It explicitly recognizes trade flows that exist between these regions, as well as between the regions and the rest of the world. Statewide impacts reported here represent the totals for the five regions.

The use of the model to derive the results of this study is illustrated graphically in Figure 2.1 above. First, a baseline projection of the economy is produced using the model, utilizing inputs and assumptions, which extrapolate growth and conditions of recent history. The model is then used a second time, with identical inputs – except that in this alternative scenario, the spending, payroll, income and other flows associated with craft brewing are removed. Thus the activities of craft brewing represent a change that ultimately produces a different economy, reflecting not only the operations themselves, but also how the rest of the economy reacts to those income flows. The difference between the baseline and alternative scenarios of the economy represents the economic impact of Montana brewers.

THE ECONOMIC IMPACT OF CRAFT BREWING

The survey results presented above describe the direct impacts of Montana brewers. Without these operations, the state economy would look much different as those financial flows would not be present. In this section we turn to the economic impact of craft brewing as a whole, considering all the direct and indirect effects of the sector.

The impacts in this section refer to the difference between the baseline economy that includes craft brewing and the alternative economy with those activities removed. The alternative simulation represents a new “resting point” for the Montana economy with the employment, purchases and investment induced by brewer operations.

Impacts Summary

This study clearly shows that because of the operations of Montana’s breweries, the Montana economy is larger, more prosperous and more populous. Taking into account the interactions between industry sectors and geographic regions, Montana’s craft brewers produce several net benefits to the state economy. Brewer operations result in the following ultimate economic impacts in the state:

- 1,044 jobs, concentrated in the manufacturing sector, but including jobs in a wide range of industries.
- More than \$33 million in additional income received by Montana households.
- Disposable household income that is nearly \$29 million higher.
- Sales from businesses and organizations based in Montana that are more than \$103 million higher.
- Almost 280 additional people living in the state.

Table 3.1. Impact Summary.

Category	Units	Total
Total Employment	Jobs	1,044
Personal Income	\$ Millions	33.8
Disposable Pers. Income	\$ Millions	28.8
Output	\$ Millions	103.2
Population	People	278

Employment Impacts

The largest industry employment impact is in manufacturing, mostly due to the fact that craft brewing is a manufacturing industry, although brewers do support other manufacturing jobs in the state. However, as Table 3.2 makes clear, Montana brewers support jobs in a variety of industries, notably in construction, state and local employment and retail trade. The spending of workers employed by breweries, as well as the vendor purchases of breweries, are the drivers that support additional jobs outside of the manufacturing sector.

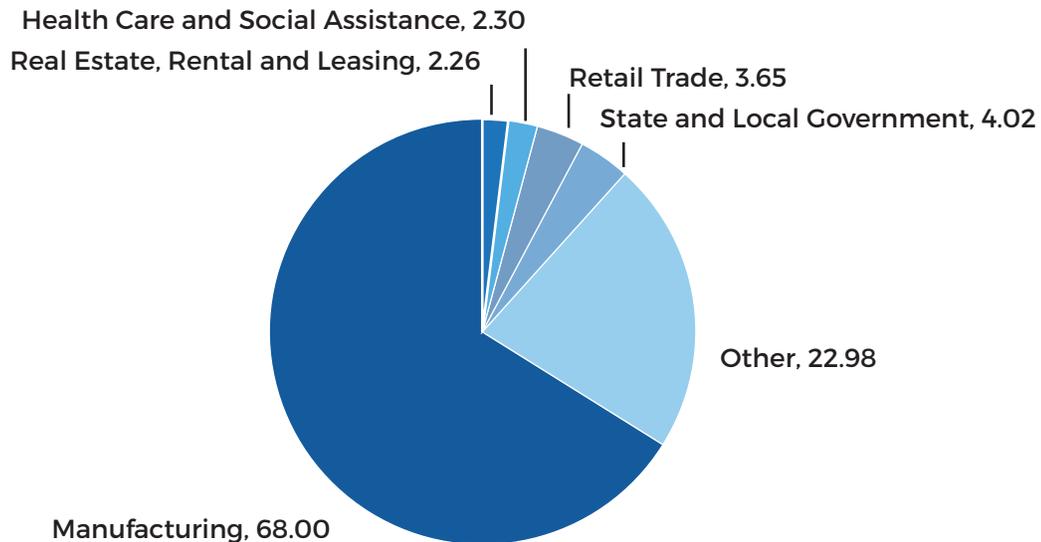
Table 3.2. Employment Summary.

Category	Units	Total
Manufacturing	Jobs	718
Construction	Jobs	94
Retail Trade	Jobs	44
State and Local Government	Jobs	40
Health Care and Social Assistance	Jobs	25
Professional, Scientific, and Technical Services	Jobs	20
Accommodation and Food Services	Jobs	20
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Administrative and Waste Management Services	Jobs	11
Real Estate and Rental and Leasing	Jobs	10
Wholesale Trade	Jobs	9
Transportation and Warehousing	Jobs	5
Other	Jobs	29
Total		1,044

Gross Sales Impacts

As with employment, the operations of Montana brewers is classified as manufacturing and thus a majority of the gross sales impacts occur in this industry. However, as Figure 3.3 makes clear, craft brewers have a positive effect on gross sales of businesses across a broad range of other sectors of the Montana economy as well (Figure 3.3). The sales of all kinds of Montana entities benefit from an economy including craft brewing, notably construction, state and local government, retail trade, wholesale trade and professional, scientific and technical services.

Figure 3.3. Gross Sales Impacts, \$ Millions.



Compensation Impacts

Wages and salaries paid to Montana workers are higher by \$24 million per year in an economy with craft brewers compared to one without. When considering benefits, Montana workers gain \$31.6 million annually, and adding income of proprietors and the self-employed, the total impact is \$35.6 million annually supported by the operations of Montana brewers. The additional jobs supported by the brewing sector have average earning of \$34,111 per job.

Table 3.3. Compensation Impacts.

Category	Units	Total
Wages and Salaries	\$ Millions	24.0
Compensation	\$ Millions	31.6
Earnings	\$ Millions	35.6
Earnings per Job	\$ Dollars	34,111

Population Impacts

The Montana economy with craft brewing presents job opportunities that would otherwise not exist. These jobs attract new Montana residents resulting in a net increase in population. These population impacts can either be due to workers coming from outside the state seeking economic opportunities or by Montana retaining residents due to the larger economy resulting from craft brewing.

These population impacts are mainly concentrated in the working age population, with an additional 152 people ages 25-64 living in the state, as well as an increase of 126 people under 25. Workers migrating for economic opportunity tend to be younger and often bring children with them or have children after relocating.

Table 3.4. Population Impacts.

Ages	People
Ages 0-14	68
Ages 15-24	58
Ages 25-64	152
Total	278

CRAFT BREWERIES IN YOUR COMMUNITY

What can a craft brewery mean to a community? In addition to the economic impacts detailed in this report brewpubs offer a local, handcrafted product at a small price right in your backyard – no need to get in the car or place an order on Amazon. They bring neighbors together to meet and mingle, provide a community venue, and, perhaps most importantly, can catalyze investment in often less developed communities. Often craft breweries will sprout in declining industrial districts, capitalizing on less expensive real estate. Not only cost effective, industrial spaces are perfectly suited for an upstart brewery, with high ceilings and ample open space. Not to mention the open, minimalist architecture lending a certain atmosphere and aesthetic, and you've got all the ingredients for an entrepreneurial, made in Montana product crafted by and for its community.

Draught Works in many ways embodies what a craft brewery can mean to a neighborhood. Prior to setting up shop in 2011,

Northwestern Missoula was a declining industrial neighborhood outside of the main concentration of food and beverage offerings of downtown. For Jeff Grant and Paul Marshall, a property in the historically logging and wood product industrial area of northwest Missoula offered an opportunity. The property boasted the open, industrial floor plan necessary for commercial brewing and, importantly, an existing loading dock. Identifying with the neighborhood, they set about establishing what would become Draught Works. They sought to match the intimate, family-friendly community within their taproom, evidenced by a packed bar and patio erupting in conversation open to all.

In their estimation, Jeff and Paul were the first retail business in their community. Purchasing at warehouse rates and the ability to build a retail business has helped to establish a successful business model. As Jeff says, “We give you a \$4 to \$5 luxury item when you come in” and patrons don't have to travel far to do so. In the years since Draught Works inauguration many other businesses have joined the community. Draught Works even works with some, purchasing screen printed clothing items and furniture, among other products, directly from retailers in northwestern Missoula. They participated in gaining an easement for the bike trail directly east of the property and feature local musicians and artists at their taproom.

One thing you'll be sure to notice at Draught Works is the environment. It's a community enjoying itself, permeated by clinking glasses, conversation and laughter. And no televisions – just a people gathering for a brew.



SUMMARY AND CONCLUSION

In this study we have evaluated the economic impact of Montana's craft brewers. This is the third iteration of this study commissioned by the MBA (Sorenson et al. 2012, Sorenson 2014). We find the Montana economy to be larger and more prosperous due to the operations of craft brewers, that the industry continues to grow and shows no signs of slowing.

The survey results from this study indicate continued growth in Montana's brewing sector. Beer production in 2015 was 15 percent above 2014 and 87 percent greater than in 2010, the first iteration of this study. Montana brewers continue to employ more people, increase payroll and make a greater number of purchases year over year. Furthermore, the share of expenditures to Montana businesses continues to increase, with a total of \$19.8 million paid directly to Montana businesses. This study was the first to estimate agricultural purchases totaling \$4.5 million in 2015, 36 percent of which were Montana agricultural producers.

We found that the activities of Montana brewers have created a more prosperous Montana economy with more gross sales, jobs, and compensation than a Montana economy without these firms, continuing the trends found in 2012 and 2014. Brewing operations cause direct and indirect impacts through paying wages and salaries and by stimulating increased purchases between vendors. The value added to their products as the move through the supply chain from brewers to wholesalers and retailers further stimulates the economy. Finally, induced effects are generated by the new jobs and personal income gains attributable to brewer operations, leading to more goods and services being purchased from all kinds of businesses throughout the state.

We also examine the less quantitative effects a local craft brewpub can have on a neighborhood by using Draught Works, a northwestern Missoula brewpub, as a case study. Others have looked at the benefits of a brewpub within a community (Alworth 2016) and our findings are consistent with their observations – the presence of a local brewpub can invigorate vacant, industrial neighborhoods and engender a sense of community and openness, bringing further residents and businesses to once stagnant neighborhoods.

In total, the results of this study highlight the growing importance of the brewing sector in the Montana economy. The economic impacts of this sector are apparent across industries and among the various regions of the state. The growth in Montana craft brewing shows no signs of slowing down, so as you enjoy your next local brew raise one for all the hard work by brewers in your community.

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