2020 Iowa Brewing Industry Economic Impact Study

Prepared for the Iowa Wine and Beer Promotion Board
and the Iowa Tourism Office

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Chapter 1: Introduction

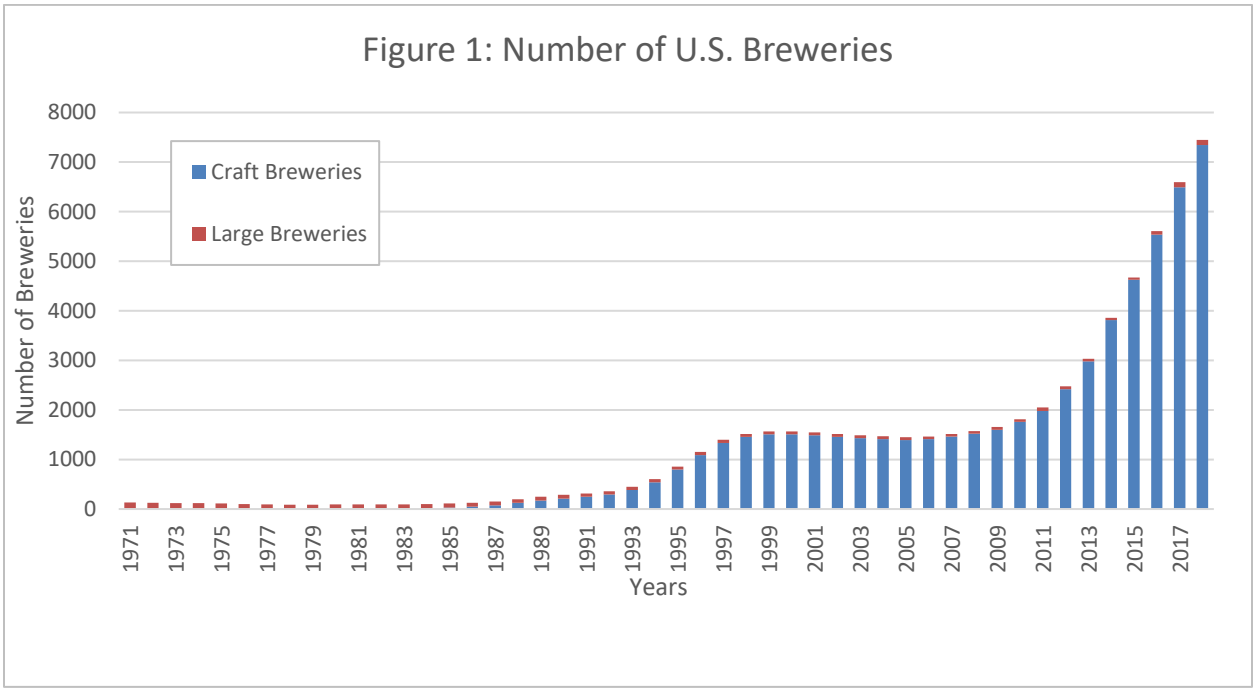
Strategic Economics Group (SEG) was hired by the Tourism Office of the Iowa Economic Development Authority (IEDA) on behalf of the Iowa Wine and Beer Promotion Board to study the economic impacts of the Iowa brewing industry. SEG completed a similar study during 2015. The report from the prior study may be found at https://economicsgroup.com/wp-ontent/uploads/2019/05/CraftBeerReport.pdf.

A Brief Look at the History of Brewing in the U.S. and Iowa

Iowa has an interesting connection with the revival of the microbrewing industry in the United States. The modern microbrewing industry in this country dates from 1965 when Frederick Louis (Fritz) Maytag III acquired the Anchor Brewing Company in San Francisco. Fritz Maytag is the great-grandson of the founder of the Maytag Corporation, which was headquartered in Newton, Iowa until it was acquired by Whirlpool in April 2006. He continued to own the brewery until 2010 when he sold it to The Griffin Group, an investment and consulting company involved in the alcoholic beverage industry.

According to the Brewers' Association, at the time Maytag acquired the Anchor Brewing Company there were only 163 breweries in the United States down from 1,816 in 1900. By 1978 the number of breweries in the country dropped to 89. Over the next ten years the number over doubled to 199. By 2000, the number of breweries jumped to 1,566. Then over the next five years the number backed off to 1,477. It is interesting this slowdown in the growth occurred several years prior to the 2008 financial market collapse.

From 2010 to 2018 the number of breweries in the United States exploded rising from 1,813 to 7,450 (by 310.9%). The following chart shows the growth in the number of breweries since 1971.

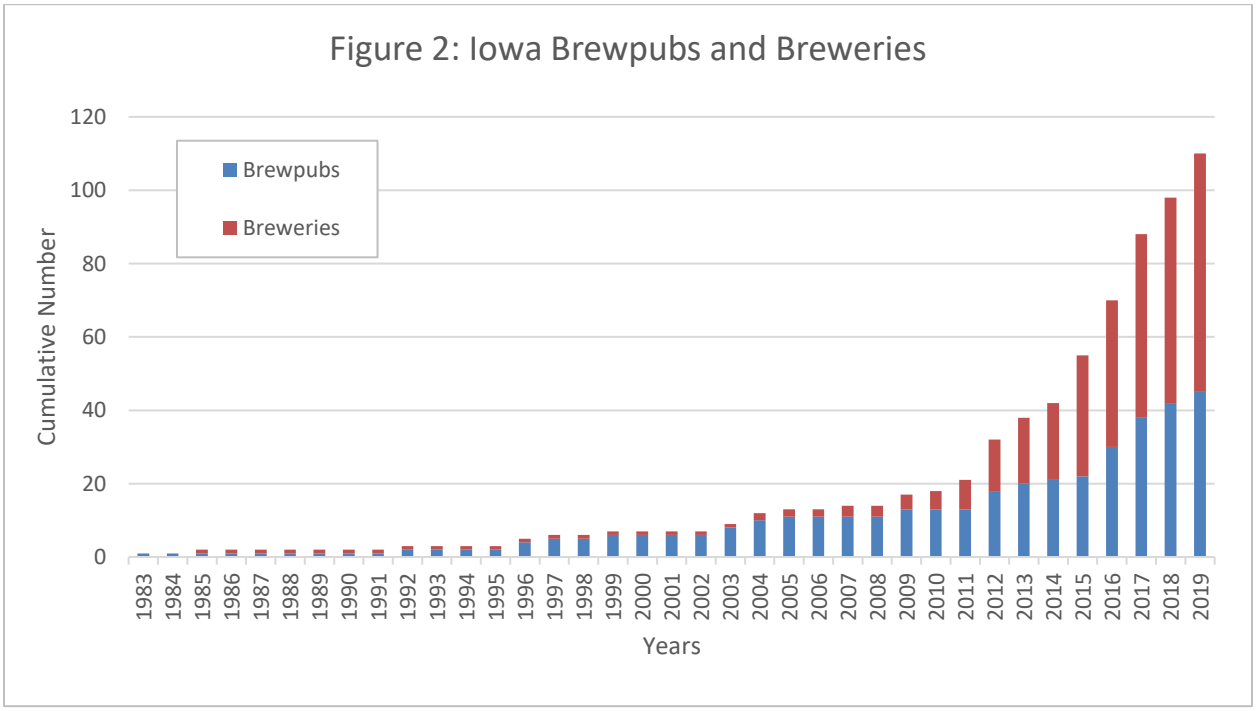


Among the 7,450 breweries, the Brewers Association classifies 2,594 as brewpubs, 4,522 as microbreweries, 230 as regional breweries, and 104 as large national breweries. Since 2010, the number of brewpubs increased by 1,537 (145.4%), the number of microbreweries increased by 3,902 (629.4%), the number of regional breweries increased by 149 (184.0%), and the number of national breweries increased by 49 (89.1%). Also, over this period national brewing companies AB InBev and Molson Coors Beverage Company acquired a number of craft brewers, which explains at least some of the growth in the number of national brewing facilities.

According to the Brewers Association, the amount of beer produced in the United States during 2018 totaled 194.3 million barrels, which was 0.8% less than the prior year. Craft breweries produced 25.6 million barrels, which was 13.2% of total beer production. Craft beer production grew by 3.9% between 2017 and 2018.

Millstream Brewery, which opened in Amana in 1985, was Iowa's first craft brewery. There was little industry development in the state over the next 15 years. Through 1999 eleven breweries and brewpubs opened and one closed. By 2010 Iowa had 25 breweries and brewpubs in operation. The Iowa industry started to experience significant growth after 2010. According to Iowa Alcoholic Beverage Division registration information, there were 42 brewpubs and 66 breweries in operation during at least part of 2019. These breweries and brewpubs produced 132.9 thousand barrels of beer during 2019.

The following chart shows the cumulative number of Iowa brewpubs and breweries in operation during 2019 by the year they opened for business. A more extensive history of the United States and Iowa brewing industries can be found in the 2015 Iowa brewery industry study report.



The Focus and Scope of the Study

This study focuses primarily on the statewide economic impacts of the Iowa brewing industry. The economic impacts generated by Iowa breweries and brewpubs that will be addressed include:

- Employment impacts
- Labor income impacts
- Production impacts
- Tax impacts

The study completed five years ago found that the Iowa craft beer industry had statewide economic multiplier effects of 1.19 for employment, 1.34 for labor income, and 1.52 for production output. Nationally, the economic multiplier effects of the Iowa brewing industry were noticeably greater. The national employment multiplier equaled 1.49. The national labor income multiplier equaled 2.14. And the national production output multiplier equaled 2.78.

It was not surprising the 2015 study's national economic multiplier effects of the Iowa industry were found to be substantially greater than the state economic multipliers because many of the main inputs for the industry, particularly hops, grain, and equipment were obtained from sources located outside Iowa. The current study looks at how the sourcing of brewing ingredients and equipment have changed over the past five years.

This study has obtained data and industry information from a variety of primary and secondary sources including the Iowa Alcoholic Beverages Division (ABD), the Brewers Association (BA), the U.S. Alcohol and Tobacco Tax and Trade Bureau, Sundale Research, and brewery and brewpub web sites and Facebook pages. In addition, a survey was emailed to 106 business locations using the Survey Monkey application.

This report presents the findings of the study in the following three chapters. Chapter 2 describes the characteristics and economic structure of Iowa's brewing industry. Chapter 3 provides estimates of the economic impacts of Iowa's brewing industry. Chapter 4 presents an analysis of industry trends and projections for industry growth through 2025.

Chapter 2: Characteristics and Economic Structure of Iowa's Brewing Industry

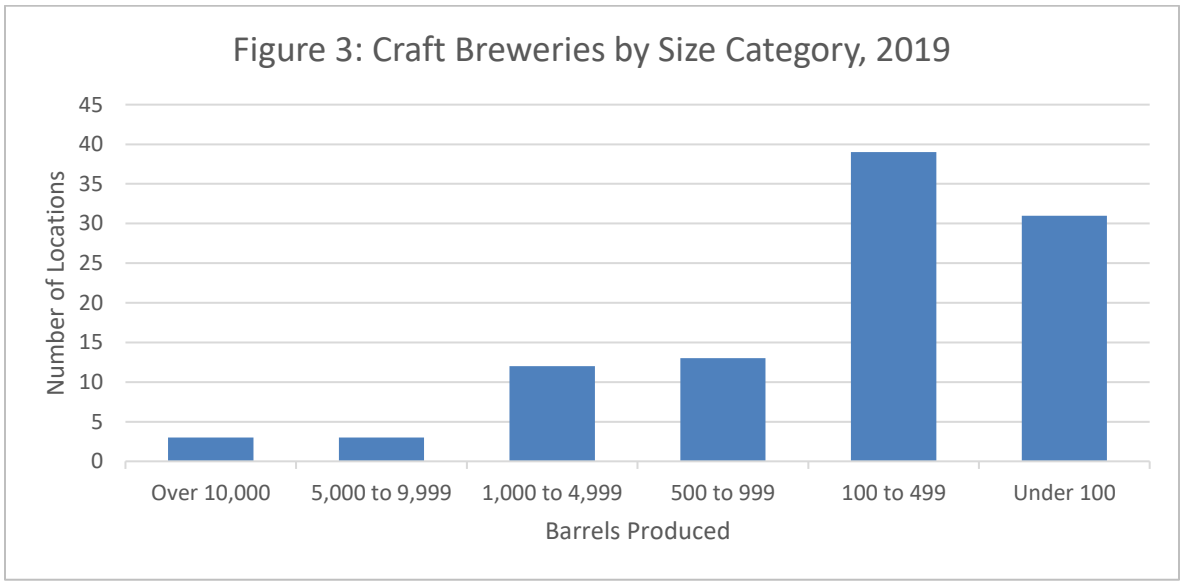
The number of craft breweries and brewpubs has about doubled since 2014. There were 54 locations in 2014. During 2019 the number of breweries and brewpubs equaled 108. Forty-two of the locations are licensed as brewpubs and the other 66 are licensed as breweries.

There are a number of characteristics that provide insight to the structure of the state's brewing industry and to the impacts the industry has on Iowa's economy. This chapter addresses these following eight characteristics:

- The sizes of individual business establishments
- The concentration of beer production and sales
- The types of business ownership
- The types of services provided
- The number of days and hours locations are open to patrons
- The geographic distribution of breweries and brewpubs
- Regulation and the licensing requirements
- Distribution channels

The Sizes of Individual Business Establishments

There are a number of ways to measure the size of businesses involved in Iowa's craft beer industry. The two primary measures are production and sales. The Iowa Alcoholic Beverages Division (ABD) requires businesses involved in the production and sale of native beer to file monthly reports, which serve as the basis for assessing the state's beer excise tax. Figure 3 shows the number of breweries and brewpubs grouped by six size categories measured in terms of the number of barrels of beer produced during 2019.

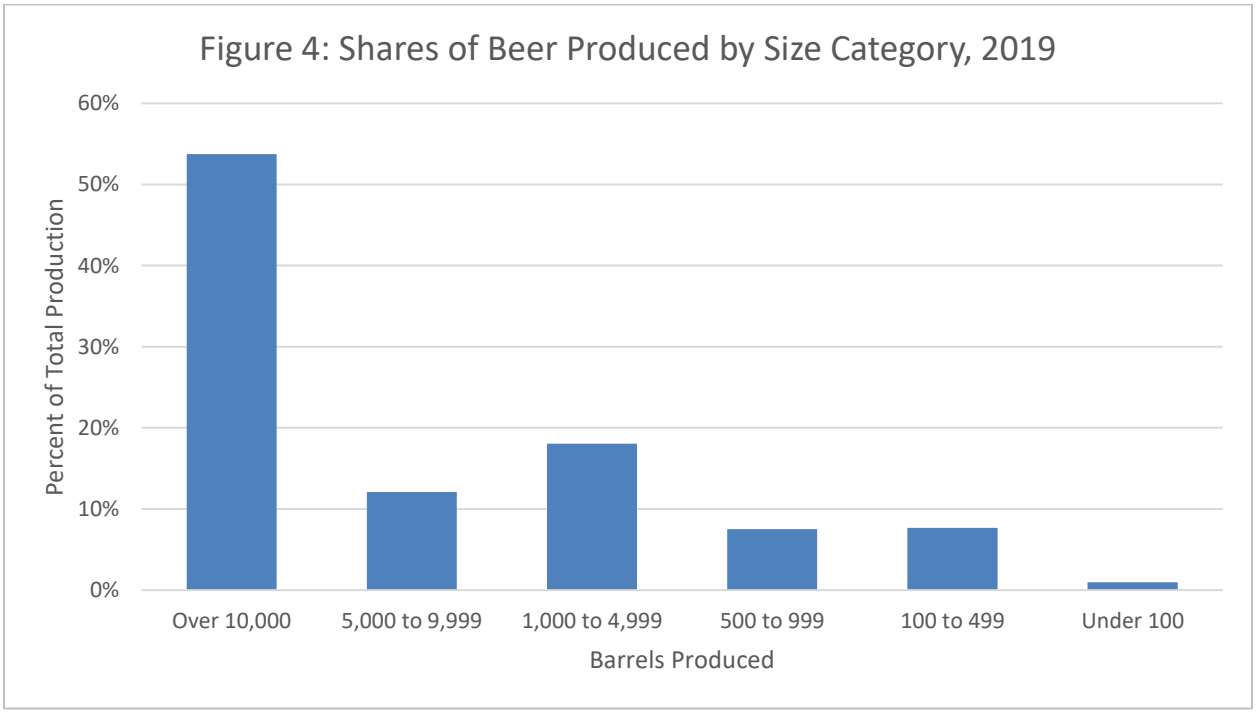


The above chart reflects reported production from 100 of the breweries and brewpubs. A small number of the businesses licensed in Iowa have not reported their production for 2019 or they may not have had taxable sales during the year.

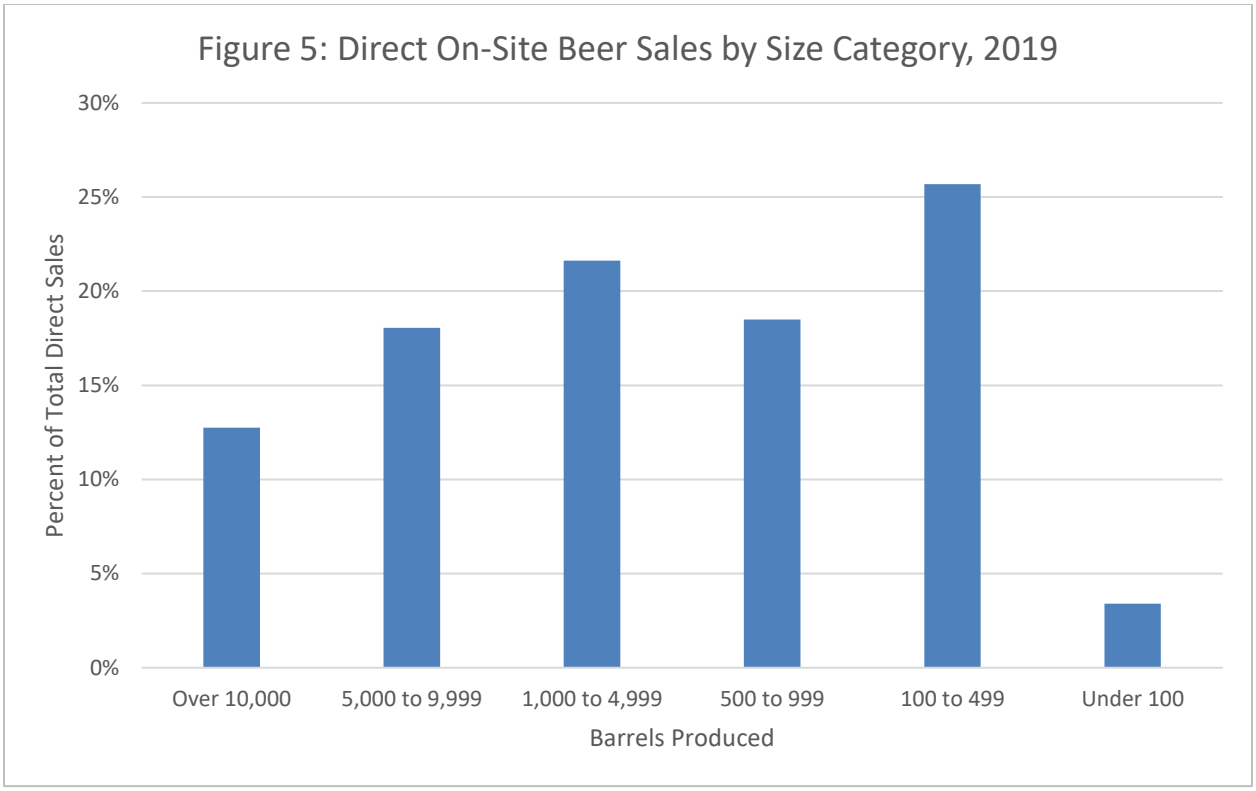
The statistics reported in the monthly filings with ABD include (1) direct sales, (2) sales through in-state distributors, (3) sales out-of-state, (4) returns, (5) breakage, (6) inventory change, and (7) total production. The total production of the reporting establishments equaled 132,866 barrels during 2019. Direct sales through brewpubs, taprooms, and self-distribution equaled 32,705 barrels (24.6%). Sales through in-state distributors equaled 58,672 barrels (44.2%). Out-of-state sales equaled 29,862 barrels (22.5%). The remaining production of 11,627 barrels (8.8%) represents breakage and changes in inventory.

The Concentration of Beer Production and Sales

Iowa's three largest breweries – Toppling Goliath, Exile, and Big Grove – accounted for 53.7% of the state's beer production during 2019. The following chart shows the shares of beer production for the different sizes of breweries and brewpubs.



In addition, the three largest breweries accounted for 90.0% of out-of-state sales and 52.6% of sales through in-state distributors. On the other hand, breweries and brewpubs that produced between 100 and 499 barrels of beer during 2019 accounted for the largest share of direct sales at their own taprooms or brewpubs or through self-distribution. Figure 5 shows the distribution of the shares of direct beer sales by the establishment size category.



Types of Business Ownership

As much as anything, the uniqueness of the beers they brew, the architecture and furnishing of their taprooms and brewpubs, and their packaging define the craft beer industry. Most of Iowa's breweries and brewpubs are locally owned. Only three locations have out-of-state ownership. These are the Granite City Restaurants and Breweries located in Cedar Rapids, Clive, and Davenport.

Among Iowa owned businesses, there are four companies with two locations each and one company with three locations. The companies with two locations are: Backpocket Brewing Company (Coralville and Dubuque), Big Grove Brewery (Iowa City and Solon), Front Street Brewing (both in Davenport), and SingleSpeed Brewing Company (Cedar Falls and Waterloo). Peace Tree Brewing Company has locations in Des Moines, Grinnell, and Knoxville.

Types of Services Provided and Days and Hours Open for Business

Most breweries have taprooms that provide opportunities for people to socialize and sample the establishments' brews. Taprooms generally do not offer cooked foods prepared on-site. But most allow foods, such as pizza and sandwiches, to be ordered and delivered to patrons. Some also arrange for food trucks to operate in their parking lots.

Brewpubs also provide space for socialization and imbibing the beers produced by the establishment, but in addition they have kitchens that prepare restaurant-style meals. Also, they often sell alcoholic and non-alcoholic beverages beyond those produced on-site.

To obtain an understanding of the types of services offered by Iowa taprooms and brewpubs, web sites and Facebook sites for each were consulted for information on (1) days and hours during which they are open to the public, (2) whether they offer food, (3) whether they have entertainment, and (4) whether they have space for private events. The analysis of these data reveals that there are a number of instances in which the classification of businesses having taprooms or being brewpubs conflicts with how the businesses are licensed by the Iowa Alcoholic Beverages Division. The analysis revealed 17 cases in which locations were described as being taprooms by their own web sites, while they were licensed as brewpubs with ABD. Alternatively, nine locations appear to operate as brewpubs even though they are licensed as breweries with ABD.

The information gleaned from company web sites and Facebook pages characterize 68 of the establishments as breweries with taprooms and 33 as brewpubs. There are also seven identified as just production breweries. One explanation for the discrepancy between the taproom-brewpub split in the ABD license registration data and the website-Facebook information may indicate some breweries have obtained brewpub licenses in anticipation of establishing restaurant services sometime in the future.

The following tables summarize information on the days and hours of service for taprooms and brewpubs

Table 1: Taproom and Brewpub Days and Hours of Service

Day of Week	Number Open	Average Hour Opened	Average Hour Closed	Average Hours Open (Hrs:Mins)
Sunday	51	12pm	8pm	5:40
Monday	25	3pm	10pm	2:40
Tuesday	38	3pm	10pm	4:00
Wednesday	57	3pm	9pm	5:30
Thursday	64	3pm	10pm	6:15
Friday	67	2pm	11pm	8:15
Saturday	67	12pm	11pm	10:30
Total Taprooms	68			

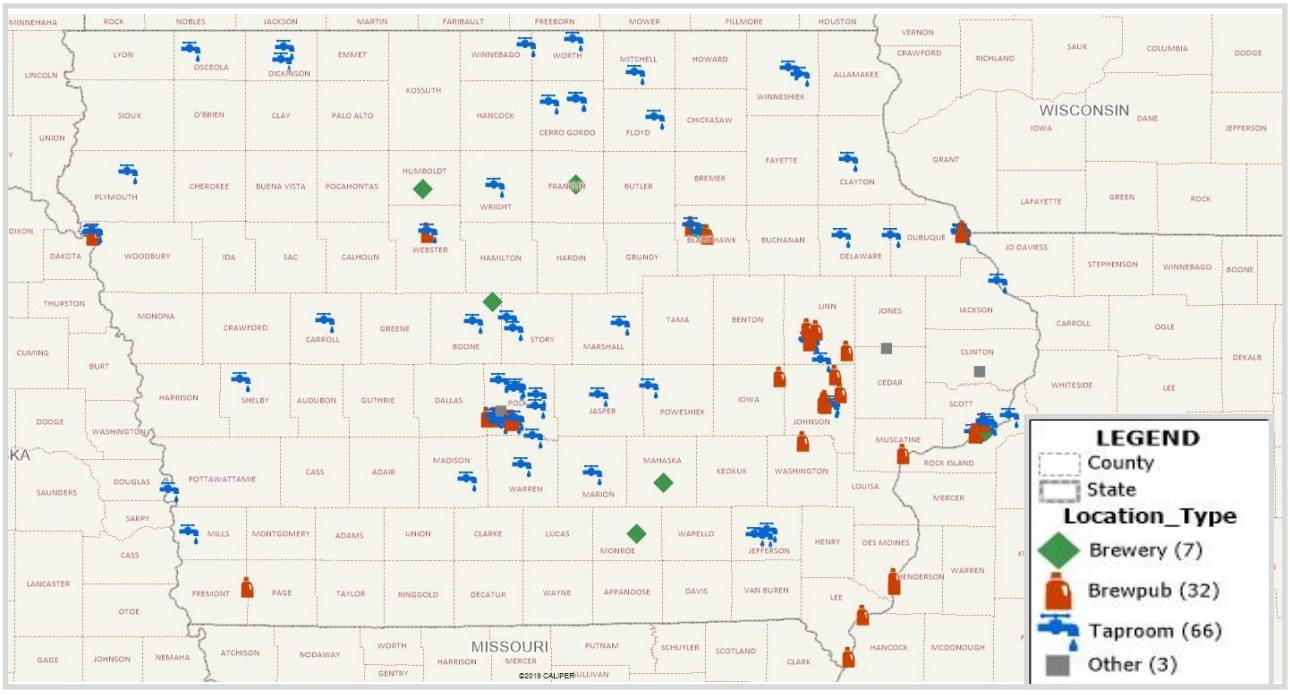
Day of Week	Number Open	Average Hour Opened	Average Hour Closed	Average Hours Open (Hrs:Mins)
Sunday	30	10am	9pm	8:45
Monday	22	12pm	11pm	7:00
Tuesday	29	12pm	11pm	8:45
Wednesday	33	12pm	10pm	10:00
Thursday	33	12pm	10pm	10:00
Friday	33	12pm	11pm	10:40
Saturday	33	11am	11pm	12:00
Total Brewpubs	33			

Other services offered by taprooms and brewpubs include various forms of entertainment and event spaces for private gatherings. Among the taprooms, 33 (48.5%) host some forms of entertainment. Also, 13 (36.1%) of the brewpubs offer entertainment. The types of entertainment hosted by these venues include music performances, game nights, story nights, etc. In addition, 20 taprooms (29.4%) and 17 (47.2%) brewpubs have either separate spaces for hosting private gatherings or rent out their facilities when they would otherwise be closed.

Geographic Distribution of Breweries and Brewpubs

As shown in the following map, Iowa's breweries and brewpubs are about evenly split between metropolitan and non-metropolitan areas. Of the locations, 57 (52.8%) are located in metropolitan areas. The greatest concentration of these businesses is in the Des Moines Metropolitan Area, where 18 are located. The Iowa Quad-Cities, Cedar Rapids, and Iowa City Metropolitan Areas are about tied with 8, 8, and 7 locations, respectively.

Figure 6: Iowa Brewery, Taproom, and Brewpub Locations, 2019



Overall, breweries and brewpubs are located in 47 of Iowa's 99 counties. Outside of the state's metropolitan area central cities and suburbs, during 2019 there were 19 breweries and brewpubs operating in rural communities with populations between 10,000 and 49,999. In mid-size rural cities (populations between 5,000 and 9,999) there were 12 of these businesses in operation. And 20 of these businesses were located in cities with populations of under 5,000 residents. Early, in Shelby County, a city with a population of only 413, was the smallest city with a brewery and taproom. The following table summarized the number of breweries, breweries with taprooms, and brewpubs located in each county during 2019.

Table 2: Locations of Breweries, Taprooms, and Brewpubs by County, 2019

County	Only Brewery	Taproom	Brewpub	Other	Total
Polk		11	5	1	17
Linn		4	5		9
Scott	1	4	3		8
Johnson		2	5		7
Dubuque		4	2		6
Black Hawk	1	2	2		5
Cerro Gordo		3			3
Jefferson		3			3
Winneshiek		3			3
Woodbury		2	1		3
Boone	1	1			2
Des Moines			2		2
Dickinson		2			2
Lee			2		2
Story		2			2
Warren		2			2
Webster		1	1		2
Carroll		1			1
Clayton		1			1
Clinton				1	1
Delaware		1			1
Floyd		1			1
Franklin	1				1
Humboldt	1				1
Iowa			1		1
Jackson		1			1
Jasper		1			1
Jones				1	1
Madison		1			1
Mahaska	1				1
Marion		1			1
Marshall		1			1
Mills		1			1
Mitchell		1			1
Monroe	1				1
Muscatine			1		1
Osceola		1			1

Table 2 (Continued):

County	Only Brewery	Taproom	Brewpub	Other	Total
Page			1		1
Plymouth		1			1
Pottawattamie		1			1
Poweshiek		1			1
Shelby		1			1
Wapello		1			1
Washington			1		1
Winnebago		1			1
Worth		1			1
Wright		1			1
Totals	7	66	32	3	108

Regulation and Licensing Requirements

The Iowa Alcoholic Beverages Division (ABD) licenses, regulates and collects taxes associated with the production, distribution, and sale of alcoholic beverages in the state. Depending on the types of activities in which different businesses engage there are four types of licenses that apply.

The regulatory system in place in Iowa is described as a "blended" three-tier system. The pure three-tier system is the regulatory system implemented in most states following the repeal of Prohibition in 1933. The three tiers consist of brewers and importers, distributors, and retailers. The purpose of the three-tier system is to prevent vertical integration in the alcoholic beverages industry, which did exist in some areas prior to Prohibition.

Initially, in Iowa in 1934 the enactment of the Liquor Control Act established state direct control over the wholesale and retail tiers, except for the sale of beer. State control began to be relaxed in 1963 with the enactment of legislation that allowed liquor by the glass for on-site consumption at licensed establishments. In 1972 the Iowa Liquor Control Commission's regulatory authority was extended to beer and the commission was renamed the Iowa Beer and Liquor Control Department.

In 1981 legislation was enacted that allowed Iowa brewers to obtain single class "B" beer permits for the sale of beer at their manufacturing locations. With the 1986 reorganization of state government, the Beer and Liquor Control Department became the Iowa Alcoholic Beverages Division. In 1989, a new special class "A" beer (Brewpub) permit was created, which permitted establishments to manufacture beer for on-premises consumption.

Most recently, several significant changes for the craft beer industry were implemented in 2015. One change allowed brewers to begin selling their beer to wholesalers in other states. Second, the regulatory distinction between low- and high-alcohol content beer was eliminated. Third, retailers with class "C" permits were allowed to begin selling refillable "growlers" of craft beer to go.

As has already been discussed, there are differences between how ABD classifies breweries and brewpubs through the licensing system and how some businesses actually operate. Generally, brewpubs have an "LC" license, which allows both sales of alcoholic beverages on-site and the off-site sale of beer and wine coolers in unopened containers. Forty-three businesses open during 2019 had "LC" licenses. Thirty-seven of these businesses also possess a special "brewpub" sub-license.

Most breweries with taprooms (53) have both "BAN" and "BB" licenses. The "BAN" license allows native beer manufacturers to make sales to licensed retailers and to wholesalers. The "BB" license allows taprooms to sell beer and wine coolers for on-premises consumption and it allows carry-out sales of beer and wine coolers in original unopened containers.

Of the seven breweries without taprooms, five have only "BAN" licenses and the other two have only "BB" licenses.

The following table summarizes the types of licenses and permits that apply to the Iowa craft beer industry.

Table 3: Iowa Beer Production, Distribution, and Sales Licenses and Permits

License/ Permit Type	License Designation	Description	Iowa Code Section
Class "A" Beer Permit	BA	*For wholesale beer distributors*. Allows the sale of beer and high alcoholic content beer at wholesale to licenses retailers.	123.130
Class "A" Beer Permit (Native)	BAN	*For Iowa beer manufacturers.* Allows for the manufacture and sale of beer at wholesale to licensed retailers and other beer wholesalers.	123.130
Special Class "A" Beer Permit	Brewpub	*Application to:* Class B Beer permit and Class C Liquor license holders. Allows for the manufacturer of beer and high alcoholic content beer on the premises for on-premises consumption.	123.130
Class "B" Beer Permit	BB	*For taverns, bars, restaurants, etc.* Allows commercial establishments to sell beer and wine coolers for on-premises consumption. Also, allows carry-out sales of beer and wine coolers in original unopened containers.	123.131
Class "C" Liquor License	LC	*For taverns, bars, restaurants, etc.* Allows commercial establishments to sell alcoholic liquor, wine, beer, and wine coolers for on-premises consumption. Allows carry-out sales of beer and wine coolers in original unopened containers.	123.30(3)(c)(2)

Distribution Channels

According to Alcohol Beverages Division monthly reports, 37 wholesale beer distributor locations operated in Iowa during 2019 and they sold 70.9 million gallons of beer. Several distributors operate multiple locations. Doll Distributing has locations in Council Bluffs, Des Moines, and Spencer. Doll provides service to 48 counties in Iowa and it accounted for 26.7% of taxable beer distribution during 2019. Iowa Beverage Systems and 7G Distributing each accounted for 16.7% of taxable wholesale beer sales during 2019. Iowa Beverage Systems has facilities in Cedar Rapids, Des Moines, and Eldridge, and its service areas cover 39 Iowa counties. 7G Distributing has facilities located in Cedar Rapids, Davenport, and Dubuque.

The monthly reports files by the state's craft breweries indicate that they sold 1.8 million gallons of the beer they produced through in-state distributors. Some Iowa brewers handle their own distribution. In addition, Iowa craft brewers sold 926 thousand gallons of beer to out-of-state wholesalers during 2019.

Chapter 3: Economic Impact of Iowa's Craft Beer Industry

Iowa's craft beer industry directly impacts the state's and nation's economies through the products it produces and sales; through the purchases of materials, equipment and services from suppliers; and the wages it pays to employees. The value brewers add to the materials they purchase in the production of beer and other products and the purchases made by their employees and suppliers produce additional spillover effects as these flows of funds turnover in the state's and nation's economies. This chapter summarizes the analysis of these primary and secondary economic impacts.

The three measures of economic impacts addressed in this chapter include:

- **Production Impacts**: The value of beer and other products produced, and the provision of services by taprooms and brewpubs
- **Employment Impacts**: The impact on employment by breweries and brewpubs and the spillover impacts associated with the direct employment
- **Labor Income Impacts**: The wages and benefits earned by employees of breweries and brewpubs and by employees of their suppliers as well as employees of other businesses patronized by the industry's and suppliers' employees, plus proprietors' income associated with these enterprises

In addition, this chapter will summarize the industry's impact on local and state tax revenues.

Impact Estimation Methodology

IMPLAN, a widely used economic impact model, was used to estimate the state and national economic impacts of the Iowa brewing industry. The central feature of the model is a social accounting matrix (SAM). The SAM consists of an industrial input-output core that defines the sources and uses matrix of business relationships. In addition, the business core is augmented by economic relationships that pertain to the government and household sectors of the economy.

The state and national data that drives the model is from calendar year 2018, which is the most recent data available, with prices adjusted to 2019 values. The primary data sources used to construct the Iowa and United States IMPLAN relationships include:

- The National Income and Product Accounts (NIPA)
- The Benchmark Input-Output Tables
- Regional Economic Accounts (REA)
- Gross Domestic Product (GDP) by State
- Census of Agriculture
- National Agricultural Statistics Service (NASS) State-Level Farm Production
- Economic Research Service (ERS) State-Level Farm Sector Sales
- Quarterly Covered Wages and Employment (QCWE) County-Level Employment and Income
- Consumer Expenditure Survey (CES) by Income Level
- County Business Patterns
- Annual Survey of Manufacturers
- U.S.-Level Construction Sector Output

- U.S.-Level Foreign Imports and Exports
- Census of Government Finance

The data used to measure and evaluate economic activity within the Iowa brewing industry comes from the following sources:

- The Iowa Alcoholic Beverages Division (ABD) Monthly Gallonage Reports
- A survey of Iowa Breweries and Brewpubs
- A Customized Analysis of Gross and Taxable Sales by Taprooms and Brewpubs from the Iowa Department of Revenue
- Iowa Specific Brewing Sector Employment Data from the U.S. Bureau of Labor Statistics

These Iowa specific data are for calendar year 2019.

The development of economic impact estimates consists of a seven-step process.

- First, direct expenditures were compiled for breweries, taprooms, and brewpubs by major expenditure categories
- Second, the shares of expenditures by category made with Iowa companies were determined.
- Third, revenue estimates were made for each level of the craft beer supply chain
- Fourth, the Iowa and U.S. IMPLAN models were created.
- Fifth, the IMPLAN model was used to estimate economic impacts on the impact areas for each economic impact measure (i.e., jobs, worker compensation, and output value).
- Sixth, the direct, indirect, and induced economic impact measures for jobs, worker compensation, and output were summarized by major industry sector impacted.
- Seventh, tax impacts were summarized.

The three categories of economic impacts estimated by the IMPLAN model are defined as follows:

- **Direct impacts** equal the initial expenditures, or production, made by the industry experiencing the economic change.
- **Indirect impacts** equal the effects of local inter-industry spending through the backward linkages in the economy. An example of this is the purchases made from companies that provide packaging materials to the alcoholic beverages industry.
- **Induced impacts** emanate from the local spending of wages and salaries for both employees of the directly affected industry, and the employees of the indirectly affected industries.

State Economic Impacts

State economic impacts include the value of purchases made by brewpubs and breweries from suppliers located within Iowa and the subsequent rounds of spending by suppliers with other Iowa businesses. In addition, the state impacts include spending by brewpub and brewery employees and owners and the employees and owners of Iowa based suppliers on consumer goods and services provided by other businesses located in the state.

The primary factors used to estimate the scale of brewpub and brewery operations in Iowa are the amounts of beer produced and sold. Monthly reports filed by brewpubs and breweries with the Iowa Alcoholic Beverages Division include statistics on craft (native) beer production and sales. Furthermore, the sales statistics are disaggregated into three categories, which are sales to out-of-state distributors, sales to in-state distributors, and sales directly to retailers or to retail customers. In addition, the ABD statistics account for breakage and returns and for changes in inventory.

Table 4 summarizes production, the different categories of sales, and other disposition of beer produced by brewpubs and breweries. In this summary brewpubs and breweries are defined based on information obtained from company web sites and Facebook pages rather than as classified by their ABD licenses. This alternative classification of businesses is used because it more closely conforms with their economic impacts than does the way the businesses are licensed. According to this alternative classification, there are 33 brewpubs and 75 breweries most of which have taprooms.

Table 4: Brewpub and Brewery Production and Sales, 2019

	Production and Sales by Business Type (Gallons)						
Business Type	Number	Total Production	Sales to In-State Distributors	Sales to Out-of-State Distributors	Direct Taxable Sales	Inventory Change	Breakage or Returns
Brewpub	33	1,252,780	857,127	39,990	330,031	9,797	15,835
Brewery	75	2,863,820	961,693	885,728	681,593	46,272	288,535
Total	108	4,116,600	1,818,820	925,718	1,011,624	56,069	304,370

	Share of Production and Sales by Business Type						
Business Type	Number	Total Production	Sales to In-State Distributors	Sales to Out-of-State Distributors	Direct Taxable Sales	Inventory Change	Breakage or Returns
Brewpub	30.6%	30.4%	47.1%	4.3%	32.6%	17.5%	5.2%
Brewery	69.4%	69.6%	52.9%	95.7%	67.4%	82.5%	94.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

	Share of Production by Disposition by Business Type						
Business Type	Number	Total Production	Sales to In-State Distributors	Sales to Out-of-State Distributors	Direct Taxable Sales	Inventory Change	Breakage or Returns
Brewpub	30.6%	100.0%	68.4%	3.2%	26.3%	0.8%	1.3%
Brewery	69.4%	100.0%	33.6%	30.9%	23.8%	1.6%	10.1%
Total	100.0%	100.0%	44.2%	22.5%	24.6%	1.4%	7.4%

The top part of Table 4 presents beer production, sales, inventory change, and breakage or returns in gallons for 2019 subdivided between brewpubs and breweries. The middle part of the table presents

the percent shares of each column accounted for by brewpubs and breweries. The bottom part of the table presents the percentage share of how beer produced by brewpubs and breweries are distributed across the different market channels and inventory adjustments.

Two methods for estimating the economic impacts of the Iowa craft beer industry using the IMPLAN model were explored. One method, commonly referred to as analysis by parts, involves the building up of the industry through the identification and valuation of inputs used in the production and sale of craft beer produced in the state. The second method follows a market channel approach, which determined the value added at each of the levels of the beer production-distribution-retail supply chain. The economic impacts presented in this report are those obtained from the second method of analysis. The second method of analysis was chosen because the data used in this approach could be more directly confirmed from secondary sources than the data available for use in the other methodology.

The IMPLAN model developed for the market channel analysis consists of a three-level structure. First, the Iowa statewide model was created. This model was customized by setting the analysis year to 2019 and by replacing some default average worker compensation values with values more appropriate to the analysis based on survey and Iowa specific Bureau of Labor Statistics data. Second, separate activities were defined for breweries and brewpubs. This was done because brewpubs have significant restaurant operations that breweries, even those with taprooms, do not have. Third, direct impacts were estimated separately for breweries and brewpubs for each of the five segments of the market channels. These are referred to as "Events" in the IMPLAN model. Table 5 summarizes the direct impact estimates by market channel segment for breweries and brewpubs.

Table 5: Brewery and Brewpub Direct Impacts by Market Channel Segment, 2019

Market Channel Segment	IMPLAN Sector No.	Breweries	Brewpubs	Totals
Beer Production	106	$40,464,000	$19,634,000	$60,098,000
Direct Beer Sales	511	$21,811,000	$10,561,000	$32,372,000
Other Taproom Operations	511	$2,420,000		$2,420,000
Brewpub Food Services	509		$32,501,000	$32,501,000
In-State Wholesalers	398	$3,847,000	$3,429,000	$7,276,000
In-State Retailers	406	$5,770,000	$5,143,000	$10,913,000
Totals		$74,312,000	$71,268,000	$145,580,000

The values of direct impacts estimated for each segment of the market channel are incremental amounts. For example, the $7,276,000 indicated for in-state wholesalers equals the value added by this segment of the market channel. It does not represent the total revenue earned by beer wholesalers from craft beer sales.

As a check on the values estimated for the direct impacts incorporated in the IMPLAN analysis, aggregated statistics for gross and taxable sales for breweries and brewpubs were obtained from the Iowa Department of Revenue (Iowa DOR). The two datasets were a close match. The taxable sales

amount for 2019 obtained from the Iowa DOR was about 7 percent below the estimated amount included in the model. However, this was expected because it was not possible to obtain sales tax permit numbers for about 14 of the breweries and brewpubs. The Iowa DOR data are summarized in the appendix to this chapter.

Table 6 presents the results summary for the IMPLAN analysis. The summary presents estimates for the jobs, labor compensation, and output measures for the direct, indirect, and induced categories of economic impacts.

Table 6: IMPLAN Model Iowa Economic Impact Estimates for Full Market Channels, 2019

Impact Summary	Jobs	Labor Compensation	Output
Direct Effects	1,520	$26,579,000	$145,580,000
Indirect Effects	332	$18,562,000	$66,496,000
Induced Effects	235	$9,796,000	$32,887,000
Totals	2,088	$54,937,000	$244,962,000
Multipliers	1.37	2.07	1.68

An argument can be made that if Iowa craft beers did not exist that other products would replace them at the wholesale and retail levels of the beer market channels. So, the analysis was repeated excluding the direct impacts associated with beer wholesalers and retailers. Table 7 summarizes the Iowa economic impacts for this alternative analysis.

Table 7: IMPLAN Model Iowa Economic Impact Estimates excluding Wholesalers and Retailers, 2019

Impact Summary	Jobs	Labor Compensation	Output
Direct Effects	1,321	$21,947,000	$127,391,000
Indirect Effects	272	$15,470,000	$56,823,000
Induced Effects	195	$8,121,000	$27,262,000
Totals	1,788	$45,538,000	$211,476,000
Multipliers	1.35	2.07	1.66

In both Tables 6 and 7, the jobs economic impact measure counts both full-time and part-time jobs. This measure is not the same as full-time equivalents (FTEs). Many of the employees who work in taprooms and brewpubs work less than 40 hours per week. The same is true for grocery and convenience stores and for bars and restaurants at the retail level of the market channel.

The labor compensation measure includes wages and salaries, employee benefits, and payroll taxes. Output measures the value of industry production. For manufacturers, this equals the value of sales plus or minus changes in inventory. For wholesalers and retailers, it equals gross margin (marginal

revenue) and not total sales (total revenue). The multipliers equal the ratio of total to direct effects and represent the spillover of direct effects through the remainder of the study area's economy.

Table 8 presents the jobs impact estimates of the Iowa brewing industry for the 25 business sectors with the greatest impacts. The brewery and brewpub direct impacts are accounted for in three business sectors: breweries (only brewing operations), brewpubs and full-service restaurants, and taprooms and other food and drinking places. The estimated direct jobs accounted for by these categories of businesses equal 1,320. The distinction between these categories of employment is likely somewhat fuzzy, particularly for small establishments, because workers may perform multiple tasks.

Table 8: Brewery and Brewpub Jobs Impacts, 2019

Sector	Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
0	Total	1,520	332	235	2,088
509	Brewpubs and full-service restaurants	741	8	11	760
511	Taprooms and other food and drinking places	436	5	6	447
406	Retail - Food and beverage stores	162	2	9	172
106	Breweries (only brewing operations)	143	0	0	144
398	Wholesale - Grocery and related product wholesalers	38	4	1	42
447	Other real estate	0	34	5	39
469	Management of companies and enterprises	0	32	2	33
417	Truck transportation	0	17	2	18
472	Employment services	0	15	3	18
422	Warehousing and storage	0	15	2	17
476	Services to buildings	0	12	2	14
510	Limited-service restaurants	0	3	11	14
490	Hospitals	0	0	12	12
441	Monetary authorities and depository credit intermediation	0	7	4	11
456	Accounting, tax preparation, bookkeeping, and payroll services	0	8	1	10
411	Retail - General merchandise stores	0	1	8	9
2	Grain farming	0	9	0	9
512	Automotive repair and maintenance, except car washes	0	5	4	9
400	Wholesale - Other nondurable goods merchant wholesalers	0	6	1	8
445	Insurance agencies, brokerages, and related activities	0	6	2	7
395	Wholesale - Machinery, equipment, and supplies	0	7	0	7
526	Postal service	0	6	1	7
483	Offices of physicians	0	0	7	7

Table 9 presents the labor compensation impact estimates for the 25 business sectors with the greatest impacts. About 73 percent of the total jobs impact are jobs directly associated with the brewery and brewpub industry. However, the labor compensation impacts are more evenly split between direct and indirect and induced effects. The direct effects share equals 48 percent of the total. One of the primary explanations for the difference between the distributions of jobs and labor compensation impacts owes

to the fact that many of the direct jobs are part-time. This is particularly true for employment by taprooms of the smaller breweries that are often only open 4 days per week and only for a limited number of hours on weekdays.

Table 9: Brewery and Brewpubs Labor Compensation Impacts (in $1,000), 2019

Sector	Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
0	Total	$26,579	$18,562	$9,796	$54,937
509	Brewpubs and full-service restaurants	$10,938	$112	$166	$11,215
511	Taprooms and other food and drinking places	$7,559	$85	$99	$7,744
106	Breweries (only brewing operations)	$3,450	$7	$1	$3,458
469	Management of companies and enterprises	$0	$3,100	$188	$3,288
406	Retail - Food and beverage stores	$2,446	$28	$132	$2,606
398	Wholesale - Grocery and related product wholesalers	$2,186	$217	$38	$2,441
417	Truck transportation	$0	$1,179	$133	$1,312
422	Warehousing and storage	$0	$786	$101	$887
441	Monetary authorities and depository credit intermediation	$0	$547	$325	$872
490	Hospitals	$0	$0	$814	$814
447	Other real estate	$0	$683	$111	$794
483	Offices of physicians	$0	$0	$776	$776
472	Employment services	$0	$610	$128	$738
400	Wholesale - Other nondurable goods merchant wholesalers	$0	$543	$121	$664
395	Wholesale - Machinery, equipment, and supplies	$0	$591	$16	$608
456	Accounting, tax preparation, bookkeeping, and payroll services	$0	$530	$72	$602
526	Postal service	$0	$501	$67	$568
439	Non-depository credit intermediation and related activities	$0	$356	$208	$564
512	Automotive repair and maintenance, except car washes	$0	$277	$184	$462
445	Insurance agencies, brokerages, and related activities	$0	$328	$90	$419
2	Grain farming	$0	$384	$3	$386
476	Services to buildings	$0	$321	$56	$377
515	Commercial and industrial machinery and equipment repair and maintenance	$0	$319	$36	$356
396	Wholesale - Other durable goods merchant wholesalers	$0	$296	$43	$339
47	Electric power transmission and distribution	$0	$290	$45	$336

Table 10 presents the estimated output impacts for the 25 business sectors impacted most by the brewery and brewpub industry. The direct output effects of $145.6 million equal 59 percent of the total output effects of $245.0 million. The $66.5 million of indirect output effects equals 27 percent of the total. This amount represents expenditures with brewing and brewpub industry suppliers within Iowa. This amount may seem low, but this is because most of the key ingredients and equipment used in brewing beer come from suppliers located outside of Iowa. The largest shares of the induced output impacts are in the owner-occupied housing and health care sectors. Given the size of these sectors this is not particularly surprising.

Table 10: Brewery and Brewpub Output Impacts (in $1,000), 2019

Sector	Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
0	Total	$145,580	$66,496	$32,887	$244,962
106	Breweries (only brewing operations)	$60,098	$128	$17	$60,242
509	Brewpubs and full-service restaurants	$43,062	$440	$654	$44,156
511	Taprooms and other food and drinking places	$24,231	$274	$316	$24,821
406	Retail - Food and beverage stores	$10,913	$124	$588	$11,625
398	Wholesale - Grocery and related product wholesalers	$7,276	$723	$125	$8,124
447	Other real estate	$0	$6,206	$1,013	$7,219
469	Management of companies and enterprises	$0	$5,475	$331	$5,807
2	Grain farming	$0	$4,300	$29	$4,329
449	Owner-occupied dwellings	$0	$0	$3,782	$3,782
47	Electric power transmission and distribution	$0	$3,003	$470	$3,473
441	Monetary authorities and depository credit intermediation	$0	$2,134	$1,268	$3,402
417	Truck transportation	$0	$2,852	$322	$3,173
400	Wholesale - Other nondurable goods merchant wholesalers	$0	$1,982	$440	$2,422
444	Insurance carriers, except direct life	$0	$1,182	$1,004	$2,186
422	Warehousing and storage	$0	$1,767	$228	$1,995
445	Insurance agencies, brokerages, and related activities	$0	$1,523	$419	$1,942
395	Wholesale - Machinery, equipment, and supplies	$0	$1,877	$52	$1,929
490	Hospitals	$0	$0	$1,921	$1,921
472	Employment services	$0	$1,527	$320	$1,848
65	Flour milling	$0	$1,629	$8	$1,637
40	Electric power generation - Fossil fuel	$0	$1,156	$181	$1,336
483	Offices of physicians	$0	$0	$1,308	$1,308
439	Non-depository credit intermediation and related activities	$0	$749	$437	$1,186
456	Accounting, tax preparation, bookkeeping, and payroll services	$0	$1,017	$138	$1,155
243	Metal cans manufacturing	$0	$1,148	$1	$1,149

National Economic Impacts

As mentioned previously, most of the ingredients, brewing equipment, and packaging supplies used in brewing beer in Iowa are acquired from suppliers located outside of Iowa. Consequently, it is logical to expect that the national impacts of the Iowa brewing industry are greater than the state impacts.

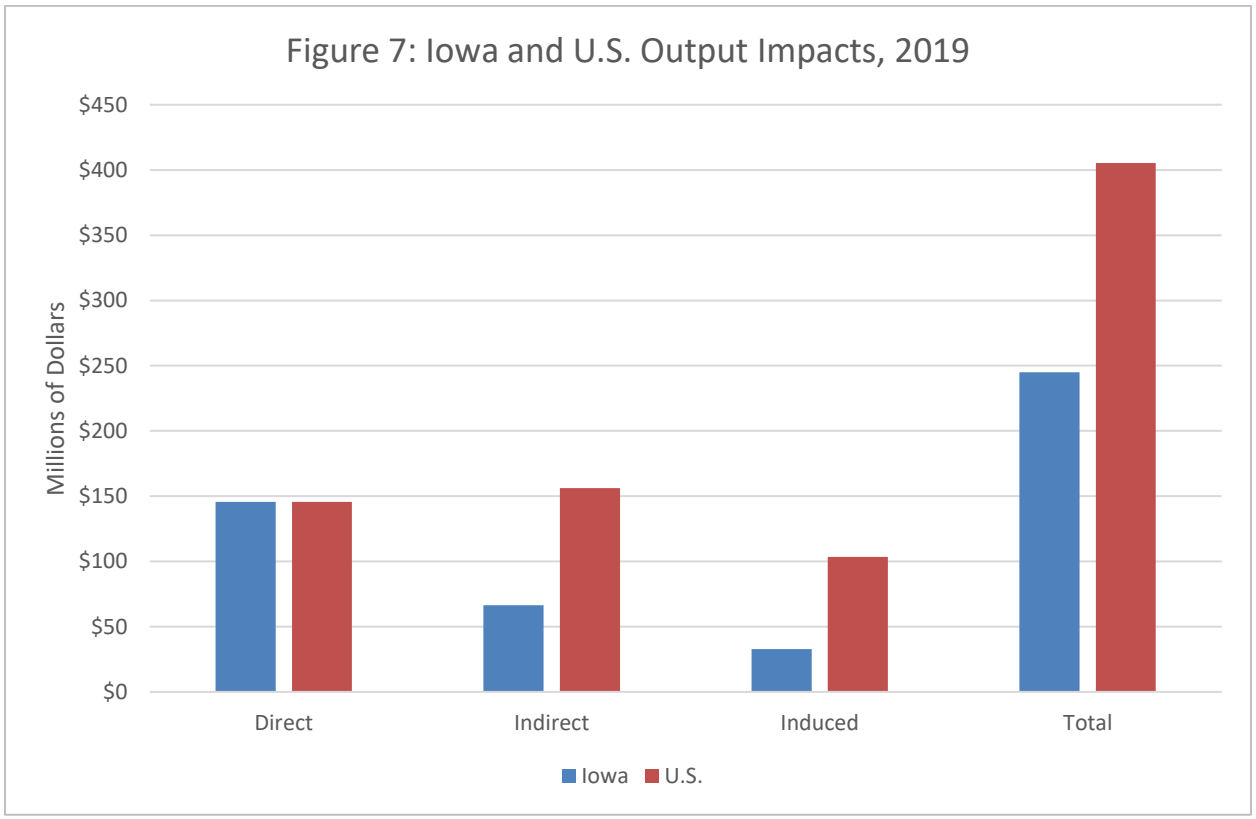
Table 11 provides a summary of direct, indirect, and induced economic impacts for the nation measured by jobs, labor compensation, and output that result from the Iowa brewing industry. Due to limitations of the structure of the model, the results of the nationwide analysis do not exactly reflect the assumption that all of the direct effects occur within Iowa. Rather this model just reflects the assumption that the direct effects of the Iowa brewing industry occur somewhere in the United States.

As a result, the direct jobs and labor compensation estimates reflect national per worker compensation factors rather than Iowa specific amounts.

Table 11: IMPLAN Model Nationwide Economic Impact Estimates for Full Market Channels, 2019

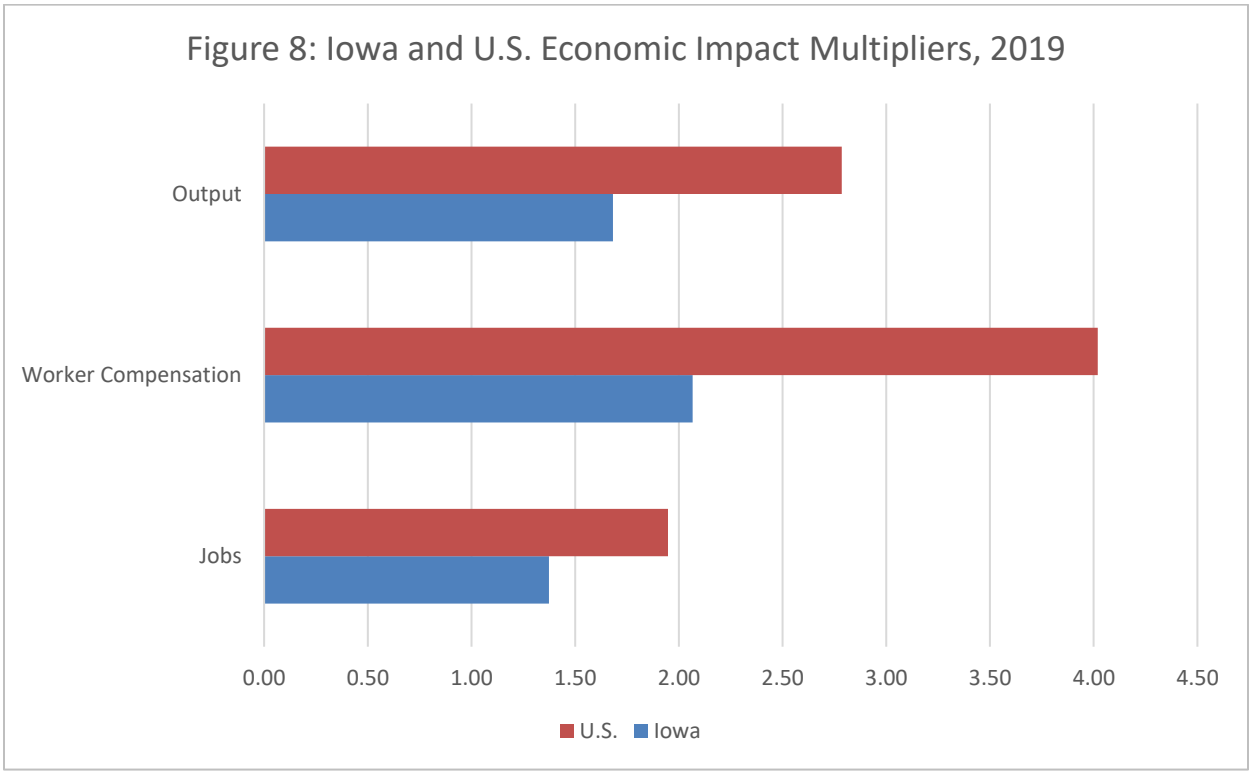
Impact Summary	Jobs	Labor Compensation	Output
Direct Effects	1,297	$25,292,000	$145,580,000
Indirect Effects	642	$44,342,000	$156,286,000
Induced Effects	585	$32,011,000	$103,542,000
Totals	2,525	$101,645,000	$405,408,000
Multipliers	1.95	4.02	2.78

The significant parts of the economic impact comparisons between the Iowa model results (Table 6) and the Nationwide model results (Table 11) are the indirect effects, the induced effects, and the multipliers. Figure 7 shows the comparisons between the Iowa and U.S. output measures.



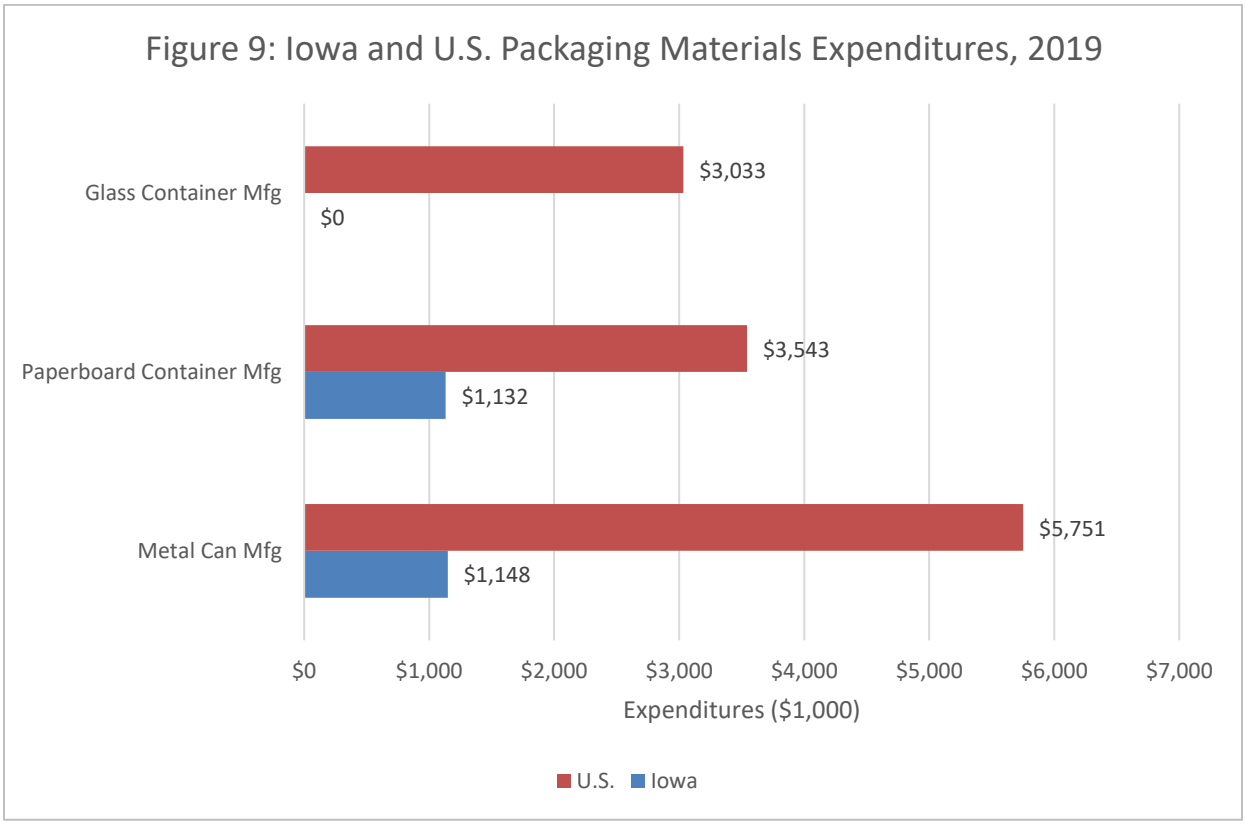
The multipliers provide additional perspective. These comparisons are summarized in Figure 8. The Iowa and United States output multipliers equal 1.68 and 2.78, respectively. One of the factors driving

this difference is that the indirect output measure nationally equals $156.3 million, which is $89.8 million (135.0%) greater than the Iowa indirect output measure. The national induced effects are $70.7 million (214.8%) greater than the Iowa induced effects. The differences between the Iowa only and national multipliers are logical because the larger the impact area the greater are the amounts of economic activity that are captured by the area.



One category of purchases by the brewing industry that clearly illustrates the difference between the indirect effects from the Iowa and national perspectives is packaging materials. Figure 9 shows the estimated amounts (in $1,000) of purchases made from glass container manufacturers, paperboard manufacturers, and metal can manufacturers to serve Iowa brewers during 2019. The estimate for glass container purchases equals $3.0 million of which all come from suppliers located outside Iowa. The estimate for total paperboard container purchases equals $3.5 million of which $2.4 million (68.0%) comes from suppliers located outside Iowa. The estimate for total metal can purchases equals $5.8 million of which $4.6 million (80.0%) comes from suppliers located outside Iowa.

The total amount of the induced effects for the output measure nationally equals $103.5 million, which is 3.15 times the amount of this effect captured within the borders of Iowa. Since induced effects arise from consumer purchases, the large difference between in-state and national impacts may seem unusual. However, the induced effects incorporate many rounds of spending in the economy and with each round of spending some of the economic impact leaks out of Iowa.



Tax Impacts

In addition to the federal and state beer excise taxes, breweries and brewpubs either directly or indirectly pay property taxes and taxes on company profits. Also, they collect state and local option sales taxes. Their workers pay individual income and payroll taxes.

The federal beer excise tax rate equals $3.50 per barrel on the first 60,000 barrels for brewers producing fewer than 2 million barrels annually. During 2019 all Iowa brewers produced fewer than 60,000 barrels.

Iowa's state beer excise tax rate equals $0.19 per gallon (or $5.89 per barrel). Iowa's beer excise tax rate is the 28th highest among the 50 states and the District of Columbia. During fiscal year 2019, Iowa collected a total of $13.4 million in beer excise tax, but only 1.1% of the total was collected on sales of craft (native) beer.

The amounts of other taxes generated by breweries and brewpubs during 2019 as estimated by the IMPLAN model are summarized in Table 12. The estimated total amount of taxes paid or remitted during 2019 equaled $13.8 million.

The aggregate state and local taxable sales data obtained from the Iowa Department of Revenue (Iowa DOR) provides a check on the accuracy of the IMPLAN model tax estimates. The Iowa DOR taxable sales data indicates the $5.4 million of state and local sales tax were collected from breweries and brewpubs

during 2019. The IMPLAN estimate for these taxes is $5.7 million. Since it was not possible to obtain taxable sales information for all breweries and brewpubs, the two amounts are remarkably close.

Table 12: Iowa Beer Industry State and Local Taxes, 2019

Tax Types	Amounts
Sales and Use Taxes	$5,694,000
Property Tax	$5,659,000
Individual Income Tax	$1,180,000
Corporate Income Tax	$249,000
Other Business Taxes	$671,000
Other Household Taxes	$342,000
Total State and Local Taxes	$13,795,000

Appendix to Chapter 3: Iowa Department of Revenue Gross and Taxable Sales for Iowa Breweries and Brewpubs

A custom analysis of Iowa craft breweries and brewpubs was conducted by the Iowa Department of Revenue at the request of Strategic Economics Group (SEG). SEG provided a file of 107 breweries and brewpubs with sales tax permit numbers, which are available from the public sales tax registration file. The Iowa DOR matched the registration number file provided by SEG with sales tax transaction data that was aggregated into four groups: (1) metropolitan area brewpubs, (2) metropolitan area breweries, (3) non-metropolitan area brewpubs, and (4) non-metropolitan area breweries. The aggregated data requested for these four groups were the number of establishments, gross sales, and taxable sales by quarter from 2015 through 2019. However, due to confidentiality restrictions that prohibit the release of even aggregated statistics when the number of observations in a group is below a minimum threshold amount, complete data was only provided for the years 2017 through 2019.

The following three tables provide the quarterly number of businesses filing returns, gross sales, and taxable sales summaries for the four groups of brewpubs and breweries. Although the file provided to the Iowa DOR contained permit numbers for 107 business locations, the highest number of businesses for which aggregated data were obtained for any quarter equaled 94. The likely explanation for this is the permit numbers were compiled for the last quarter of 2019 and the number of brewpubs and brewpubs was lower in prior years. Also, sometimes quarterly sales tax returns are filed late, so data can be missing.

Table 3A1: Number of Businesses Filing Sales Tax Returns by Quarter, 2017 – 2019

	Number of Businesses				
Year:Quarter	Metro Brewpubs	Metro Breweries	Non-Metro Brewpubs	Non-Metro Breweries	Total
2017Q1	16	17	8	20	61
2017Q2	18	21	8	20	67
2017Q3	18	19	9	22	68
2017Q4	18	22	8	24	72
2018Q1	18	22	8	26	74
2018Q2	19	24	9	28	80
2018Q3	18	24	9	31	82
2018Q4	19	26	8	32	85
2019Q1	20	24	9	31	84
2019Q2	21	26	9	33	89
2019Q3	21	29	9	34	93
2019Q4	21	28	9	36	94

Table 3A2: Gross Sales by Brewpubs and Breweries by Quarter, 2017 – 2019

Year:Quarter	Gross Sales				
	Metro Brewpubs	Metro Breweries	Non-Metro Brewpubs	Non-Metro Breweries	Total
2017Q1	$9,339,539	$2,213,617	$932,903	$3,527,673	$16,013,732
2017Q2	$11,731,688	$4,005,909	$1,133,405	$4,521,729	$21,392,731
2017Q3	$11,880,397	$3,690,511	$1,209,992	$4,445,831	$21,226,731
2017Q4	$11,078,187	$3,083,584	$961,209	$4,059,083	$19,182,063
2018Q1	$10,513,947	$3,173,168	$931,987	$4,458,367	$19,077,469
2018Q2	$12,860,860	$4,693,364	$1,125,251	$5,451,931	$24,131,406
2018Q3	$12,297,983	$5,173,731	$1,177,599	$6,374,772	$25,024,085
2018Q4	$11,742,880	$4,565,311	$1,096,535	$6,125,684	$23,530,410
2019Q1	$10,364,572	$4,393,338	$1,043,918	$6,138,333	$21,940,161
2019Q2	$13,501,012	$6,150,380	$1,369,622	$7,345,797	$28,366,811
2019Q3	$13,175,117	$5,349,542	$1,462,554	$8,305,319	$28,292,532
2019Q4	$12,392,119	$4,666,073	$1,286,174	$8,099,627	$26,443,993

Table 3A3: Taxable Sales by Brewpubs and Breweries by Quarter, 2017 – 2019

Year:Quarter	Taxable Sales				
	Metro Brewpubs	Metro Breweries	Non-Metro Brewpubs	Non-Metro Breweries	Total
2017Q1	$8,704,370	$1,530,992	$920,652	$1,616,153	$12,772,167
2017Q2	$10,716,046	$3,257,885	$1,124,669	$1,927,901	$17,026,501
2017Q3	$10,875,796	$2,864,563	$1,199,049	$2,334,778	$17,274,186
2017Q4	$10,280,436	$2,250,575	$959,477	$1,767,708	$15,258,196
2018Q1	$9,788,922	$2,370,740	$931,216	$1,890,780	$14,981,658
2018Q2	$11,922,642	$3,590,045	$1,111,425	$2,254,611	$18,878,723
2018Q3	$11,285,646	$3,407,369	$1,162,049	$3,032,829	$18,887,893
2018Q4	$11,000,521	$3,188,617	$1,087,997	$2,772,513	$18,049,648
2019Q1	$9,565,473	$2,844,393	$1,038,274	$2,268,983	$15,717,123
2019Q2	$11,880,476	$4,162,293	$1,360,023	$3,141,764	$20,544,556
2019Q3	$11,868,902	$4,194,917	$1,451,507	$3,913,882	$21,429,208
2019Q4	$11,406,338	$3,775,112	$1,274,140	$3,371,279	$19,826,869

It should be noted that the gross sales and taxable sales amounts apply to all commercial activity by the businesses, not just to beer sales. The primary difference between the gross sales and taxable sales amounts are the value of sales exempt from state sales tax. For these businesses, it is likely that most of the exempt sales are sales made out-of-state.

The following table presents a comparison of the estimate of the magnitude of the Iowa brewing industry developed by SEG from Iowa Alcoholic Beverages Division data and information from other sources and the taxable sales data obtained from the Iowa DOR. The difference between the two industry valuations for 2019 equals $5.961 million (7.1%) with the IMPLAN model amount being slightly higher than the Iowa DOR amount. Given that Iowa DOR data were not available for all brewpubs and breweries the difference seems reasonable.

Table 3A4: IMPLAN Model Input Data and Iowa DOR Taxable Sales Data Comparison, 2019

Taproom Taxable Sales	
Beer	$32,716,464
Other	$2,419,655
Taproom Subtotal	$35,136,119
Brewpub Taxable Sales	
Beer	$15,841,488
Other	$32,501,453
Brewpub Subtotal	$48,342,941
Total IMPLAN Model Taxable Sales	$83,479,060
Iowa DOR Taxable Sales	$77,517,756
Difference	$5,961,304
%Difference	7.1%

Chapter 4: Iowa Brewing Industry Outlook

When work on this study began in mid-January, the outlook for continued growth of the Iowa brewing industry looked fairly certain. But, the rapid growth in the number of new breweries and brewpubs that occurred from 2012 through 2019 was expected to begin tapering off and converge toward a rate of growth similar to that being experienced elsewhere in the nation. The Coronavirus pandemic has introduced considerable uncertainty into the outlook for the future. There is now a strong likelihood the number of breweries and brewpubs in Iowa will decline during 2020 and that it will take several years for the industry to fully recover.

To be responsive to Iowa's and the nation's new reality, this chapter will present two outlooks for the future of Iowa's brewing industry. First, projections that ignore the impact of the pandemic will be made for the next five years. Second, a scenario will be developed that takes into consideration the pandemic.

Prior to presenting the two outlooks, some background will be laid for them by looking at state and nation data related to recent growth experiences. In addition, comparisons will be made between Iowa and other states related to craft beer production and consumption.

National and Regional Craft Beer Trends and Comparisons

The primary sources of information used to identify national trends and make comparisons among the states are the Brewers Association and Sundale Research. These sources, plus the Iowa Alcoholic Beverages Division (ABD) and the Iowa Department of Revenue (Iowa DOR), have been used for information specific to Iowa.

Figure 10 shows year-to-year growth rates for total beer and craft beer consumption from 2000 through 2018 and projections to 2023. Total U.S. beer consumption declined by 2.3 percent between 2000 and 2018 dropping from 6,215.5 million gallons to 6,069.8 million gallons. Craft beer consumption increased by 391.6 percent over the same period rising from 165.9 million gallons to 815.3 million gallons.

Figure 11 shows even more clearly the difference between the consumption of craft beer and non-craft beer. This graph presents the cumulative percentage growth rates of total, craft, and non-craft beer since 2000. From 2000 to 2018 the consumption of non-craft beer decreased by 795.2 million gallons (13.1%).

The peak years of growth for craft beer consumption were 2013 and 2014 when the annual rates of increase equaled 17.9% and 17.7%, respectively. Between 2017 and 2018 the annual growth rate slowed to 6.7%. This slowing of the growth rate for craft beer consumption can be seen in Figure 10.

Sundale Research has developed projections for beer consumption through 2023. Over these five years, total beer consumption is projected to continue to decline by another 37.2 million gallons (0.6%), while craft beer consumption is projected to increase by 232.5 million gallons (28.5%). But the annual rate of growth for craft beer is projected to decline to 4.2% by 2023, and this was before the impact of the pandemic. What will likely happen is craft beer consumption will decrease during 2020, and then begin to recover during 2021. Regardless, future growth is likely to slow down compared to the mid-2010s.

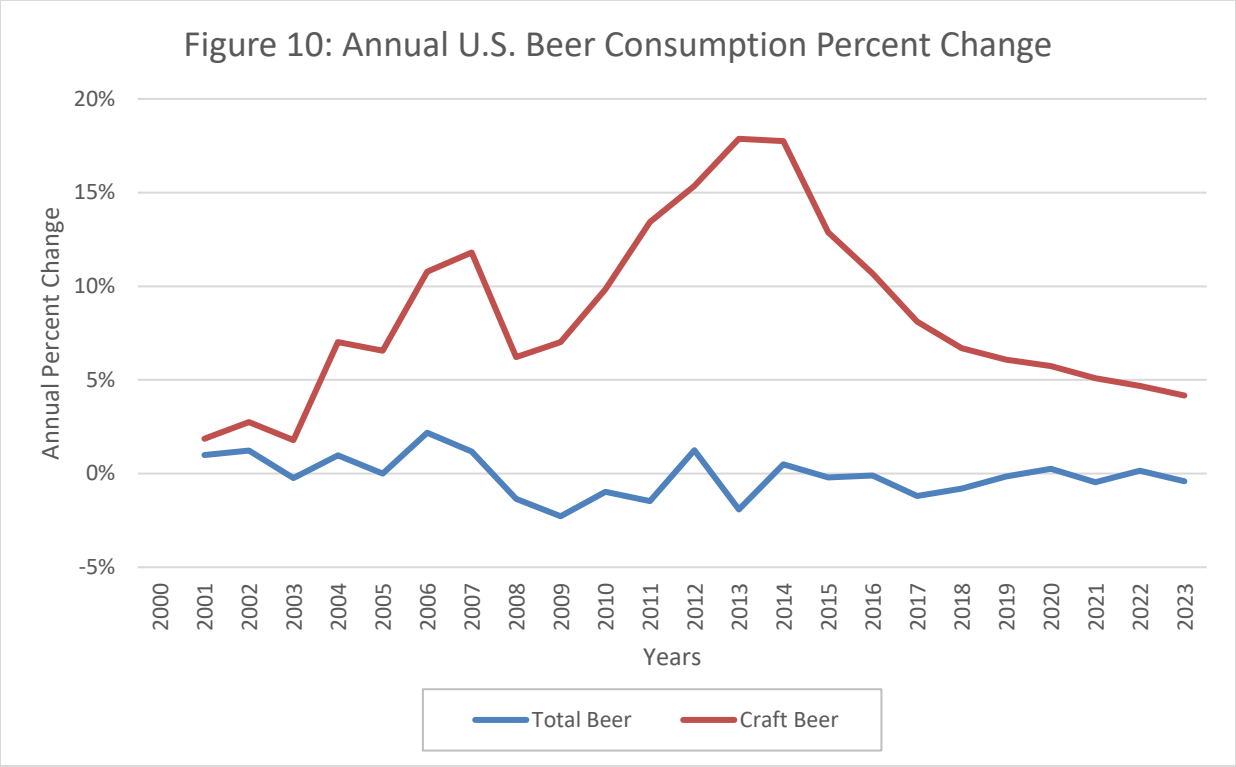


Figure 10: Annual U.S. Beer Consumption Percent Change
20%
15%
10%
5%
0%
-5%
Annual Percent Change
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Years
Total Beer
Craft Beer

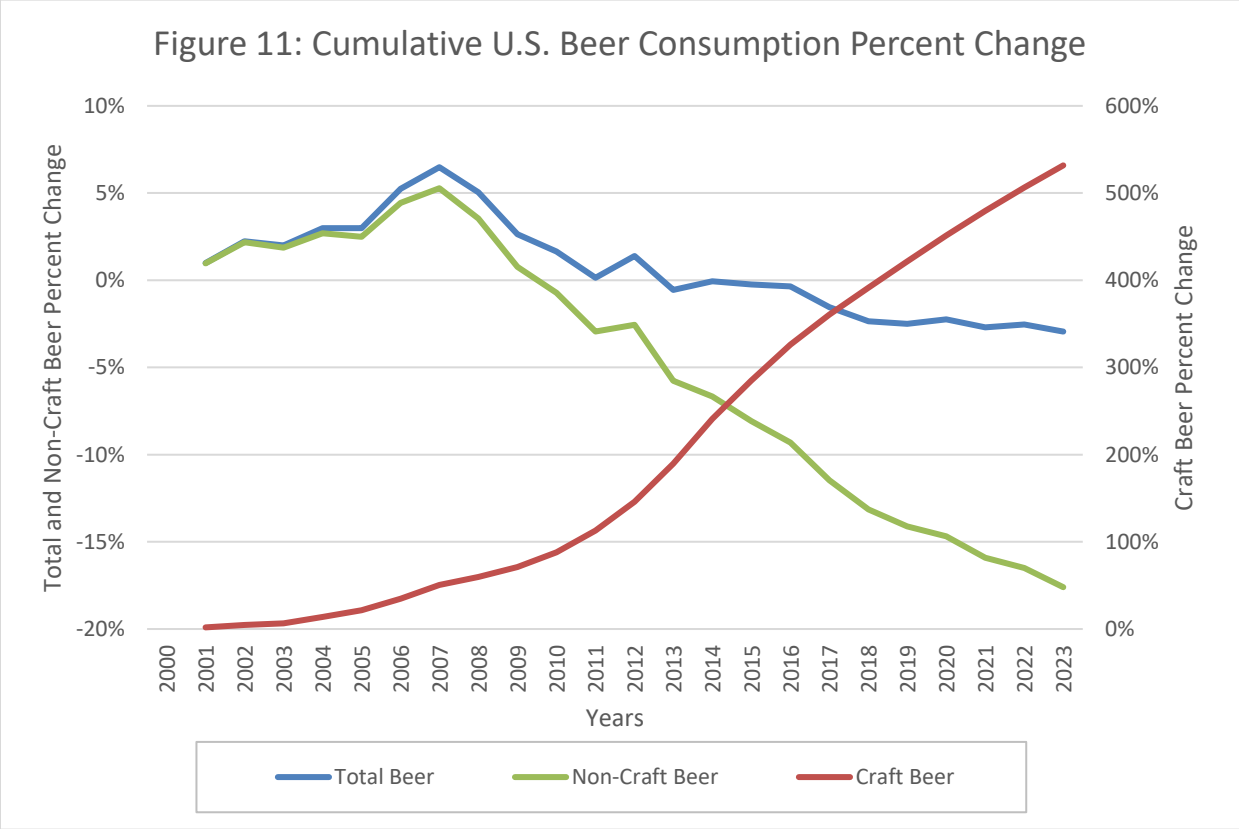
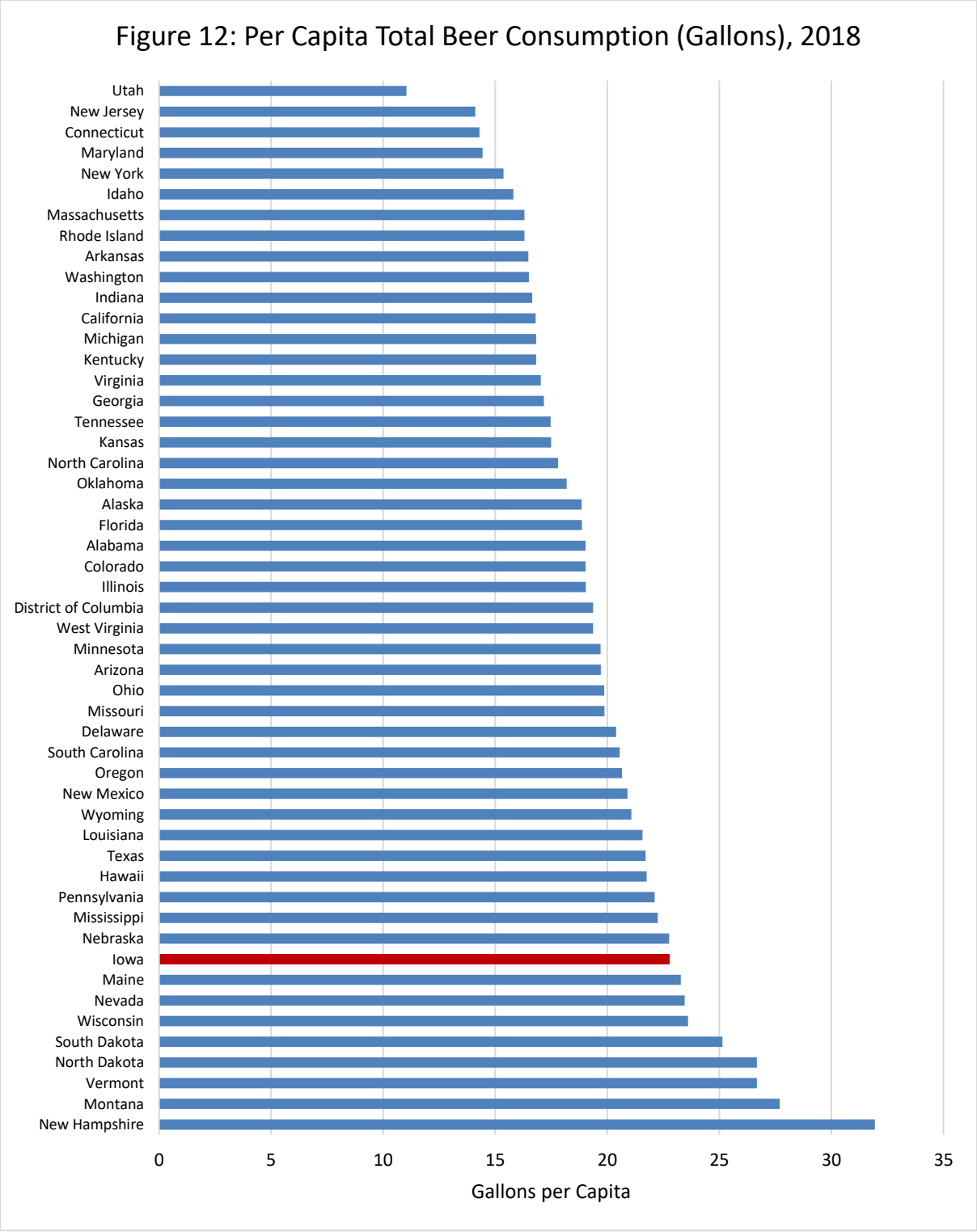


Figure 11: Cumulative U.S. Beer Consumption Percent Change
10%
5%
0%
-5%
-10%
-15%
-20%
Total and Non-Craft Beer Percent Change
600%
500%
400%
300%
200%
100%
0%
Craft Beer Percent Change
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Years
Total Beer
Non-Craft Beer
Craft Beer

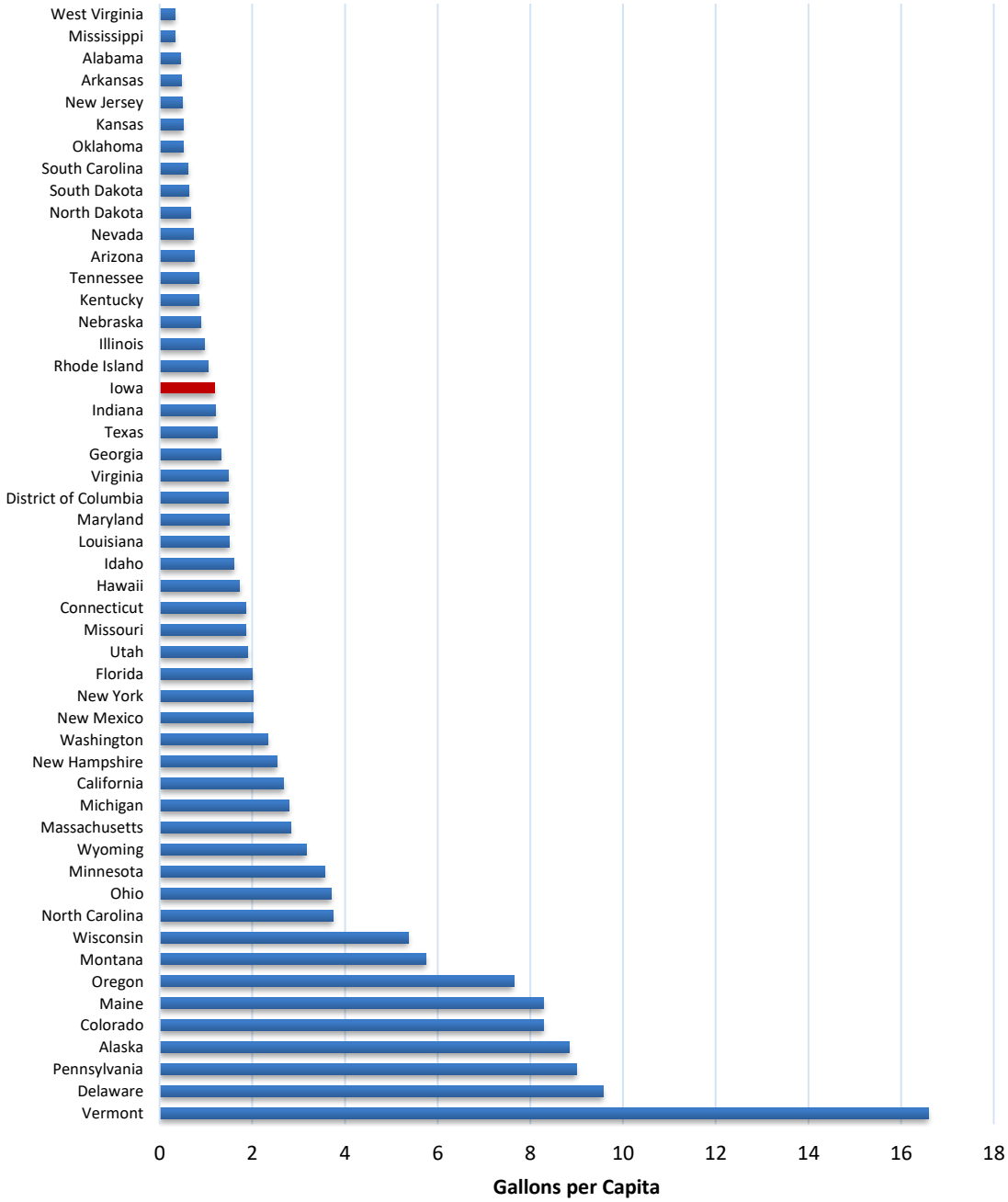
Comparisons between Iowa and other states provide additional insights into how the craft beer industry in Iowa will fare over the next five years. Figure 12 shows total beer consumption per capita for 2018 for the 50 states and the District of Columbia.



Iowa ranks ninth among the states and the District of Columbia with per capita consumption during 2018 equaling 22.8 gallons. New Hampshire had the highest per capita consumption at 31.9 gallons and the national average equaled 18.5 gallons. Five northern Midwestern states (North Dakota, South Dakota, Wisconsin, Iowa, and Nebraska) were among the top ten beer consuming states.

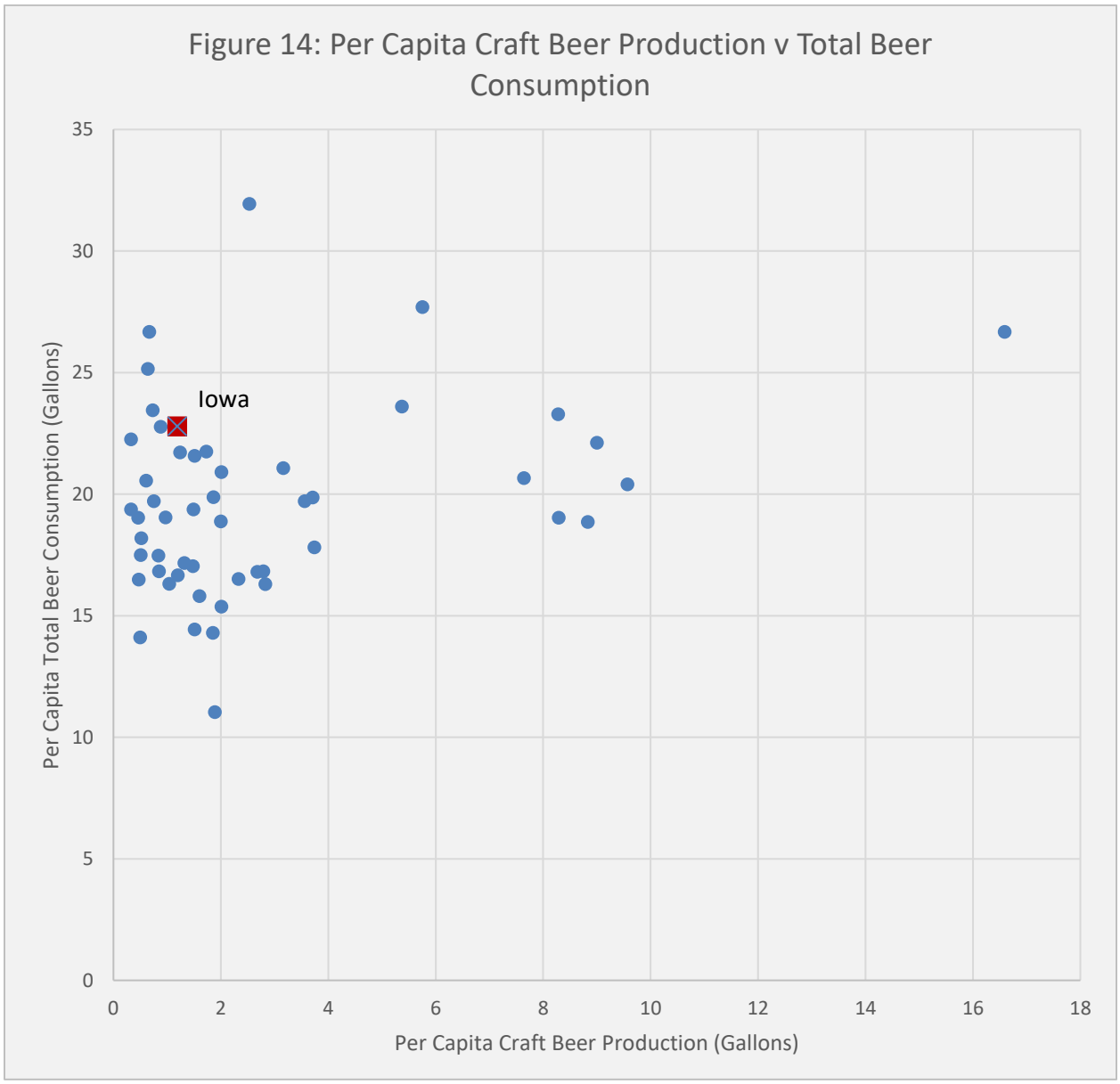
Information on craft beer consumption by state does not appear to be available, but data on craft beer production by state does exist. Figure 13 shows craft beer production per capita by state for 2018.

Figure 13: Craft Beer Production per Capita, 2018



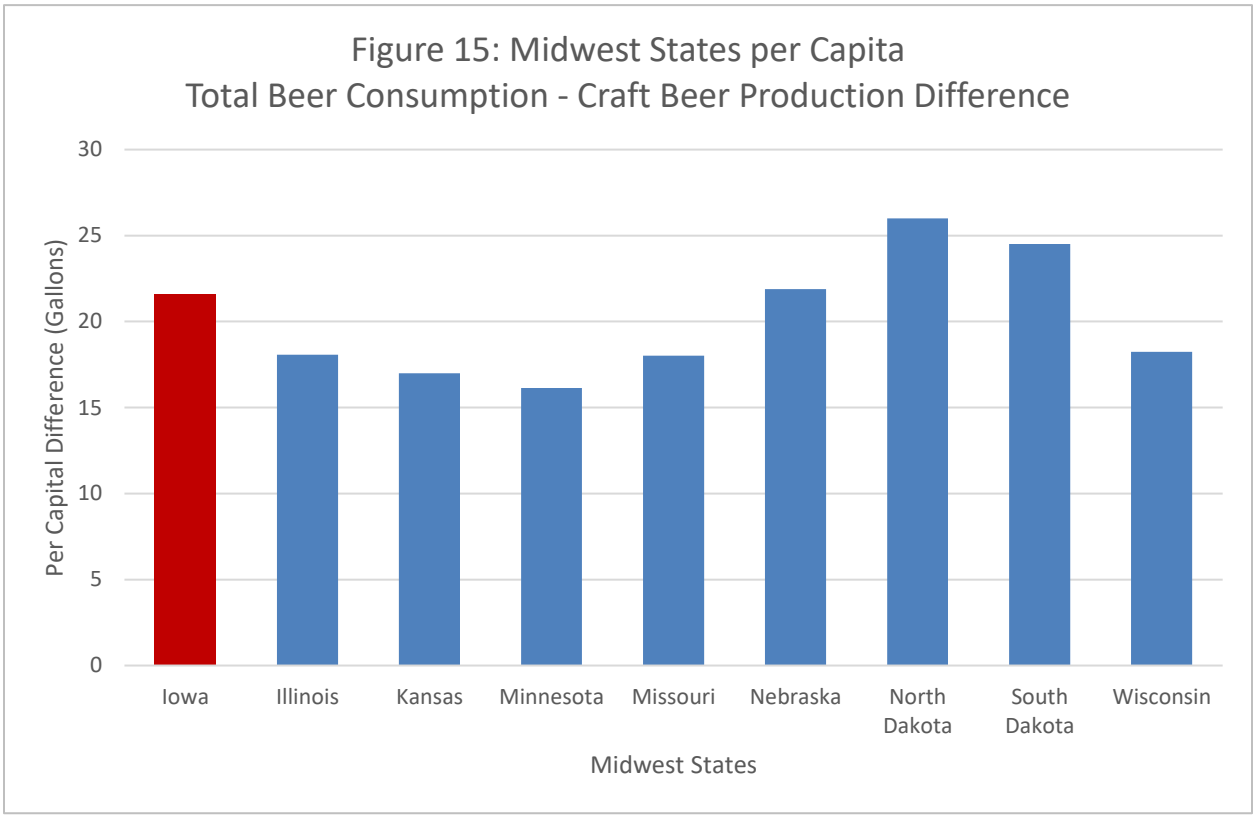
Iowa's per capita production of craft beer equaled 1.2 gallons, which ranked 34th among the states and the District of Columbia.

There certainly are differences between the amounts of craft beer produced and consumed in a state. The 2018 monthly gallonage reports filed with the Iowa Alcoholic Beverages Division show that about 18 percent of the beer produced in Iowa that year was exported from the state. On the other hand, Iowans consume craft beer produced in other states. So, it is reasonable to assume the annual production and consumption amounts are about equal. Figure 14 shows the relationship between the 2018 total beer consumption and craft beer production amounts per capita for each state and the District of Columbia.



Nationally, average per capita total beer consumption during 2018 equaled 18.5 gallons, while per capita craft beer production averaged 2.8 gallons, which results in a difference of 15.7 gallons between the two amounts. For Iowa per capita total beer consumption equaled 22.8 gallons, while per capita craft beer production equaled 1.2 gallons, which is a difference of 21.6 gallons per capita.

Figure 15 shows the differences between the per capita total beer consumption and craft beer production amounts for Iowa and eight other Upper Midwestern States. Iowa's difference between the two per capita amounts is less than for three other states and more than for five of the states. Given that the state's per capita total beer consumption amount is fairly stable and that per capita craft beer production is reasonably close to per capita craft beer consumption, the per capita craft beer amount for Iowa would have to increase by 1.6 gallons to reduce the Iowa difference to the average amount for the other eight states. This equates to a little over 5 million gallons of additional craft beer production/consumption for Iowa.



Baseline (pre-Pandemic) Iowa Craft Beer Industry Projections

The past five years have seen a significant increase in the number of breweries and brewpubs in Iowa. Over that period seventy-six new establishments opened for business. And according to Iowa Alcoholic Beverages Division annual reports, the amount of native craft beer consumed in the state has grown by 66.1%, while the consumption of non-native beer has decreased by 4.4%. Still, native craft beer only accounted for 1.1% of total beer consumption in the state during fiscal year 2019.

The baseline projection for future growth of the brewing industry in Iowa begins with a look at the potential for new establishments. The distribution of breweries and brewpubs among different size cities in the state provides a beginning point for this analysis. Table 13 provides information on the number of breweries and brewpubs located in different size cities and the number of cities within each size group without any breweries or brewpubs.

Table 13: Number of Breweries and Brewpubs by City Size and Cities without Breweries or Brewpubs

City Size (2018 Population)	Number of Cities	Number of Breweries/ Brewpubs	Cities w/o Breweries/ Brewpubs
50,000 or more	11	40	0
25,000 to 49,999	7	8	3
10,000 to 24,999	24	22	10
5,000 to 9,999	38	13	26
2,500 to 4,999	55	16	39
1,000 to 2,499	138	5	133
less than 1,000	678	4	674
Totals	951	108	885

All of the state's largest cities have at least one brewery or brewpubs. Des Moines and Cedar Rapids each have seven. However, there are several metropolitan area suburbs that do not have any craft beer type businesses. These include Johnston, Marion, North Liberty, Urbandale, and Waukee.

The cities that likely have the greatest potential for supporting new breweries or brewpubs are those in the size ranges of from 2,500 to 24,999 population. Ten of the twenty-four cities with populations between 10,000 and 24,999 do not have any such establishments. And 39 of 55 cities with populations between 2,500 and 4,999 do not have any breweries or brewpubs. The potential for new establishments in cities smaller than 2,500 population is low. An exception would be small cities located along well-used bike trails, near to state or county parks, or near to other tourist attractions.

Another way of looking at how different cities may potentially support additional brewery and brewpub development is the distribution of craft beer production and sales by city size. Table 14 presents the 2019 production and taxable sales statistics by city size. Also, the table shows average sales per establishment by city size.

The statistics presented in this table indicate that production is concentrated in cities with populations of 50,000 or more and between 5,000 and 9,999. However, production in cities with populations between 5,000 and 9,999 is distorted because a single brewery accounts for over 1.4 million gallons of production. The taxable sales statistics provide a clearer picture of services provided to local customers. The largest cities account for 55.1% of sales, which seems reasonable given the large number of establishments located in these cities and their large nearby customer bases. However, cities with populations between 2,500 and 49,999 also seem to average sales amounts adequate to support profitable businesses. Also, this seems to be true for the four establishments located in cities with

populations of under 1,000, but the average for those establishments is distorted because one brewery located in Amana, a popular tourist destination, accounts for almost all the sales.

Table 14: Total Beer Production and Sales and Average Sales by City Size, 2019

City Size (Population)	Total Craft Beer Production (Gallons)	Production Share	Taxable Craft Beer Sales (Gallons)	Sales Share	Average Sales (Gallons)
50,000 or more	1,666,537	40.5%	557,936	55.1%	13,948
25,000 to 49,999	75,479	1.8%	55,400	5.5%	6,925
10,000 to 24,999	381,444	9.3%	119,258	11.8%	5,421
5,000 to 9,999	1,672,707	40.6%	140,376	13.9%	10,798
2,500 to 4,999	186,840	4.5%	104,527	10.3%	6,533
1,000 to 2,499	12,249	0.3%	7,632	0.8%	1,526
less than 1,000	121,342	2.9%	26,978	2.7%	6,745
Totals	4,116,598	100.0%	1,012,107	100.0%	9,371

The statistics presented in Tables 13 and 14 indicate that the market for craft beer in Iowa is not saturated. Also, Iowa craft beer production relative to total beer consumption is low compared to most other states. Thus, there remains room for continued growth. From 2010 through 2019 an average of 10 breweries and brewpubs opened each year. Even prior to the pandemic this rate of growth was likely to decrease. Nevertheless, 5 to 10 new establishments per year over the next five years was a reasonable expectation prior to the pandemic.

Table 15 presents projections for the number of new breweries and brewpubs that could reasonably be expected to open for business by year from 2020 through 2025 ignoring the impact of the pandemic. The number of projected openings is divided between metropolitan and non-metropolitan areas. As discussed previously, there remain a number of metropolitan area suburbs without breweries or brewpubs, but the greatest potential for new establishments is in larger and mid-sized non-metropolitan cities.

Table 15: Projected Baseline New Breweries and Brewpubs

	New Breweries or Brewpubs		
Year	Metro	Non-Metro	Total
2020	2	8	10
2021	2	7	9
2022	1	7	8
2023	1	6	7
2024	0	6	6
2025	0	5	5

Table 16 presents baseline projections for craft beer production and taxable sales by breweries and brewpubs for the years 2020 through 2025. In addition, the third part of the table shows the projected shares of production sold directly by breweries and brewpubs by year.

Table 16: Projected Baseline Production and Taxable Sales for Iowa Breweries and Brewpubs

	Total Production (Gallons)		
Year	Metro	Non-Metro	Total
2020	1,928,000	2,284,000	4,212,000
2021	2,305,000	2,515,000	4,820,000
2022	2,655,000	2,763,000	5,418,000
2023	3,003,000	3,017,000	6,020,000
2024	3,273,000	3,290,000	6,563,000
2025	3,502,000	3,573,000	7,075,000

	Taxable Sales (Gallons)		
Year	Metro	Non-Metro	Total
2020	541,000	395,000	936,000
2021	563,000	457,000	1,020,000
2022	574,000	525,000	1,099,000
2023	584,000	591,000	1,175,000
2024	584,000	663,000	1,247,000
2025	584,000	733,000	1,317,000

	Taxable Sales Share of Production		
Year	Metro	Non-Metro	Total
2020	28.1%	17.3%	22.2%
2021	24.4%	18.2%	21.2%
2022	21.6%	19.0%	20.3%
2023	19.4%	19.6%	19.5%
2024	17.8%	20.2%	19.0%
2025	16.7%	20.5%	18.6%

The baseline projections reflect expectations for growth in the number of establishments in metropolitan and non-metropolitan areas and recent production and taxable sales growth rates for breweries and brewpubs open during both 2018 and 2019.

Over the six years, production is projected to grow by 81.6% in metropolitan areas and by 56.4% in non-metropolitan areas. Metropolitan area taxable sales are projected to increase by only 7.9%, while non-metropolitan area taxable sales are projected to increase by 85.6%. It appears to be the case that many metropolitan area breweries have been increasing production by a much greater percentage than direct sales through their taprooms and brewpubs.

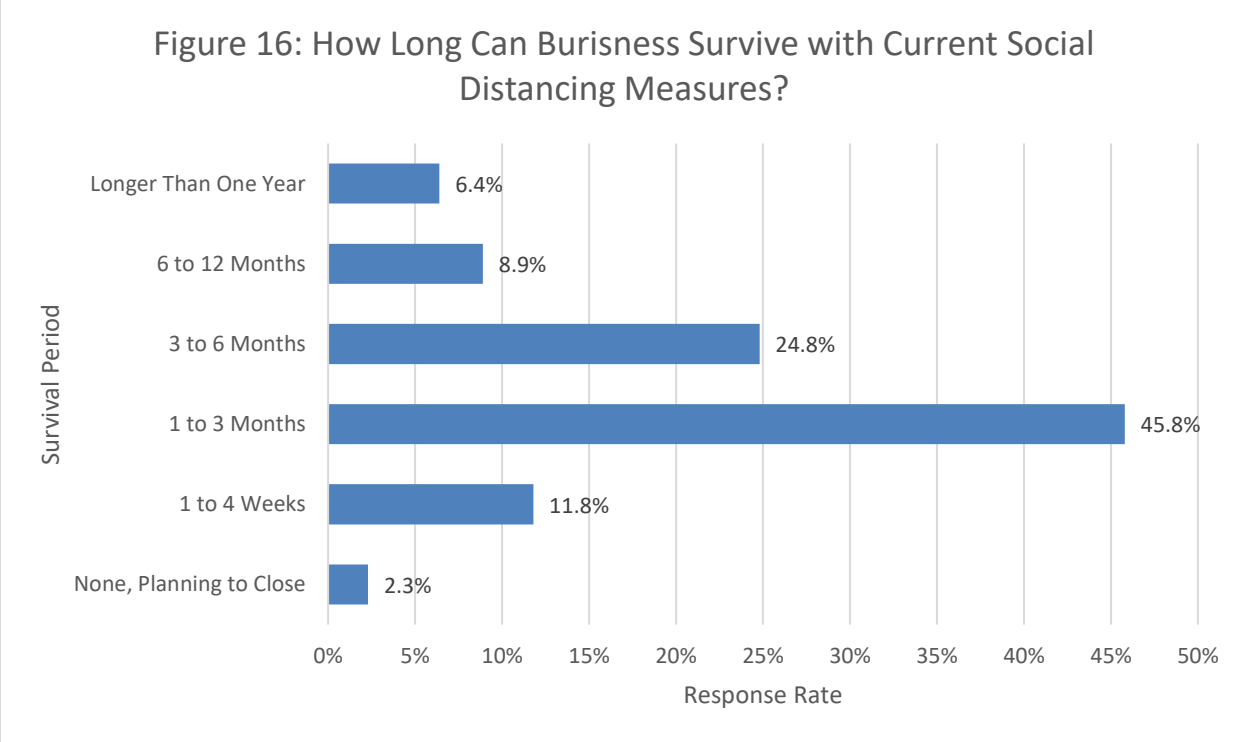
Alternative Scenario: Speculation About the Impact of the Pandemic

Information has been gathered from a variety of sources to gain insights into how the coronavirus may impact the craft beer industry both short-term and long-term. These sources include newspaper and magazine articles, the Brewers Association, the Iowa Brewers Guild, and the Iowa Restaurant Association. At this time, the best that can be offered about the future of the brewing industry is a summary of what industry insiders speculate may happen and a brief scenario based on this speculation.

National Outlook

The Brewers Association has undertaken two surveys of craft breweries and brewpubs since the beginning of March. The results of the surveys paint a bleak picture for the industry unless the spread of the coronavirus can be brought under control quickly. A report issued on April 7th indicated that 75% of the respondents experienced a drop in sales that averaged 65 percent.

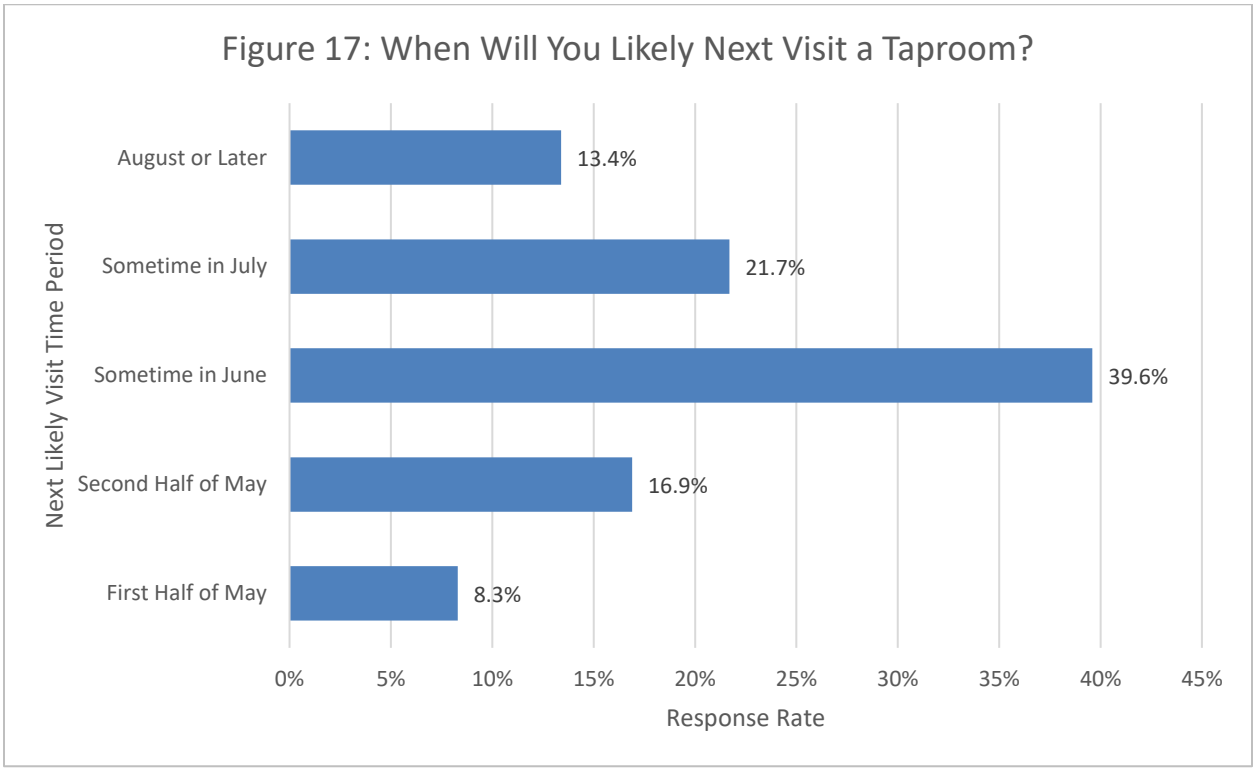
One important question relates to how long businesses think they can survive with existing strict social distancing requirements in place. The responses to this question are summarized in Figure 16. The responses indicate that after three months (by July) about 60% of existing breweries and brewpubs nationally could be out of business.



The report observes that approximately 75% of breweries in the country make 1,000 or fewer barrels of beer per year and that the median amount of beer produced by these smaller breweries is only 400 barrels per year. These small breweries rely heavily on direct sales through taprooms and brewpubs.

The breweries most likely to close are among this group. Breweries that have the best chance of surviving are those that produce canned and bottled beer for sale through off-sight retail distribution channels.

Another organization, Monday Night Brewing, conducted a survey on April 23rd that asked when people would likely begin to again patronize taprooms assuming restaurants and bars are allowed to reopen by May 1st. Figure 17 summarizes this survey's responses.



Another question in this survey asked about how frequently individuals would patronize brewery taprooms once they are again open for business. The responses indicated 11% would visit "more than normal", 61% would visit "with the same frequency", and 28% answered they would visit "less than normal".

Iowa Outlook

In late March, the Iowa Restaurant Association published the results of a survey it conducted. That survey found:

- 35% of hospitality businesses of all types were closed
- 91% of bars were closed
- 82% of bars and restaurants had laid off employees
- 84% of businesses had lower revenues than during March 2019

- 65% of businesses were trying to offer some sort of carry-out or delivery service

The Cedar Rapids *Gazette* reported on April 22nd that during the month Iowa's bars and restaurants would lose $310 million in revenues. The study on which the report was based found that restaurants suffered a 75% decline in revenues and that bars fared even worse losing 89% of revenues. The closure of eating and drinking places had already cost 66,000 Iowa workers their jobs.

Looking to the future the study anticipates that only 45% of bars and restaurants will rehire all their workers. Even worse, if closures last until July 1st, it is likely that 26% of these establishments will not reopen. Furthermore, adding insult to injury, even for businesses that carry business interruption insurance claims are being denied in almost all cases.

One Iowa brewery that has been proactive in trying to gain an understanding of what the future may look like is Peace Tree Brewing Company. It recently conducted a short online survey of its customers. The intent of the survey was to help determine how customers will respond once its taprooms reopen.

The first question of the survey asked, "If Governor Reynolds re-opens businesses on May 15, do you plan to visit brewery taprooms in the following weeks?" Answers: 37% - No, 34% - Yes, and 28% - Maybe.

The second question asked. "When do you expect your next visit to a taproom to be?" Answers: 40% - Sometime in June, 31% - Second half of May, 19% - Sometime in July, and 10% - August or later.

The third question is the most enlightening for the future of the industry. It asked. "This summer, do you plan to visit taprooms?" And the answers were: 49% - As frequently as before, 41% - Less than normal, 10% - More than normal.

Those responding to this survey may not be representative of all taproom and brewpub patrons statewide, but their responses do indicate a sense of caution, while also a desire to return and support local businesses provided that can be done safely.

<u>Iowa Pandemic Scenario</u>

Given the uncertainty surrounding how the pandemic will progress and how it will impact the nation's economy, the best we can do in evaluating its impact on Iowa's brewing industry is to present a scenario on how conditions in Iowa may impact the industry. The basis for this scenario is a list of factors that should be considered.

- First, based on information that has been gathered by the Brewers Association and the national media, the expectation is that small brewers (those that produce under 1,000 barrels per year) and that rely on taprooms for most of their income will suffer the most from the pandemic.

- Second, brewers that sell bottled and canned beer through grocery and convenience stores will maintain the strongest position for generating revenue during the pandemic related shutdown period.

- Third, once taprooms and brewpubs can reopen, it will probably be at about 50% reduced capacity.

- Fourth, breweries and brewpubs located in urban areas will likely fare better than those located in rural areas because customers are likely to travel less and stay closer to home as the economy reopens. Also, other retail establishments in rural areas are more likely to close than are similar establishments in urban areas. This reduces the attractiveness of rural destinations for tourism.

- It will likely be at least a year before breweries and brewpubs that close down will either reopen or be replaced by new owners and enterprises.

Looking at the implications of the above factors for Iowa's breweries and brewpubs is the next step in developing the pandemic scenario.

- Of the 108 breweries and brewpubs open during at least a portion of 2019, only 18 produced more than 1,000 barrels of beer. These establishments accounted for 111,555 barrels of production, or 84.0% of total production. The production of these breweries is split about evenly between metropolitan (54,533 barrels) and non-metropolitan (57,022 barrels) locations. Also, these 18 establishments accounted for 101,148 barrels of sales, or 83.4% of total sales.

- There is no readily available data on packaged versus draught sales. However, the Iowa Alcoholic Beverages Division does have data on out-of-state and in-states sales through distributors. The large breweries and brewpubs accounted for 97.5% of out-of-state sales during 2019. It is likely that most of the out-of-state sales are packaged sales. In-state sales through distributors are likely about evenly split between packaged and draught sales. The large brewers accounted for 94.3% of in-state sales through distributors.

- Among the 90 small brewers and brewpubs sales through in-state distributors account for 17.7% of total production and sales through out-of-state distributors account for only 3.5% of total production. Most of these establishments' sales are on-site through their taprooms and brewpubs. If these small establishments can only operate at 50 percent of capacity, many will probably remain closed or reopen to only find their businesses are no longer viable.

- The large breweries and brewpubs can likely survive because about 75% of their production is sold off-site. For small breweries and brewpubs, only about 21% of production is sold off-site. This makes the small breweries much more dependent on the patronage of customers at their taprooms and brewpubs than is the case for the large establishments.

- Among the large breweries and brewpubs, both those located in metropolitan and non-metropolitan areas seem equally well-positioned to survive the pandemic shutdown provided off-site sales remain at levels similar to 2019. But several of the larger establishments may experience financial difficulties and still could close.

- Among the 90 smaller breweries and brewpubs, the 50 located in metropolitan areas are slightly more dependent on on-site sales than are the 40 non-metropolitan area locations, but those in metropolitan areas have larger potential customer bases. All locations will likely suffer significant on-site sales reductions. They all have been closed for at least six weeks and those

that are reopening can only operate at 50 percent of capacity for at least another couple of months. Furthermore, both national and Iowa surveys reveal that many customers will not return to these establishments until the end of the summer at the earliest.

Based on the above information we have constructed a scenario in which between 30 and 35 of Iowa's breweries and brewpubs will not survive until the end of 2020. These will be smaller establishments about evenly divided between metropolitan and non-metropolitan locations. Because the breweries and brewpubs most likely to close are smaller establishments, sales during 2020 are estimated to equal between 75% and 80% of the 2019 total of 121,245 barrels (3.759 million gallons).

Looking past 2020, the rate of recovery and rebuilding of Iowa's brewing industry depends on how long it takes for effective vaccines and treatments for the COVID-19 virus to be developed and made widely available. By most estimates, this will not occur until the middle of 2021 at the earliest.

Acknowledgments

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