2019 Iowa Wine 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 wine industry.

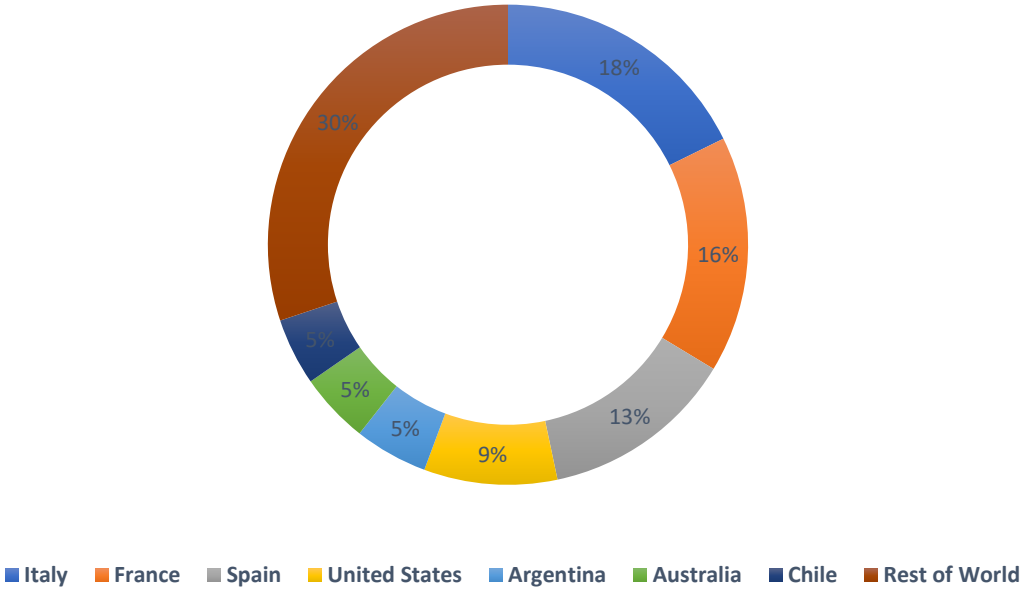
The first section of the report presents information on the global and national wine industry. This sets the context within which to discuss the Iowa wine industry. After examining industry statistics for the Iowa wine industry, we then present our methodology for estimating the economic impacts of the Iowa wine industry along with the associated economic impact results. The final section of the report provides an economic outlook for the Iowa Wine Industry. Obviously, this is a very difficult time to produce industry forecasts given the current COVID-19 pandemic and uncertainty on how it will impact the industry going forward.

Chapter 2: The US Wine Industry in a Global Context

The Global Wine Industry

While the US is a relative newcomer to wine production, it has become a world leader with an annual production of over 800 million gallons. This makes the US the fourth largest wine producer in the world.

Figure 1: 2019 Global Wine Production



Source: **http://www.oiv.int/public/medias/7033/en-oiv-point-de-conjoncture.pdf**, accessed May 27, 2020

In terms of total absolute volume, the US is the largest consumer market. However, when we look at per capita consumption, the US comes in 18th of the top 20 wine consuming countries.

Table 1: Per Capita Wine Consumption (in gallons), 2018

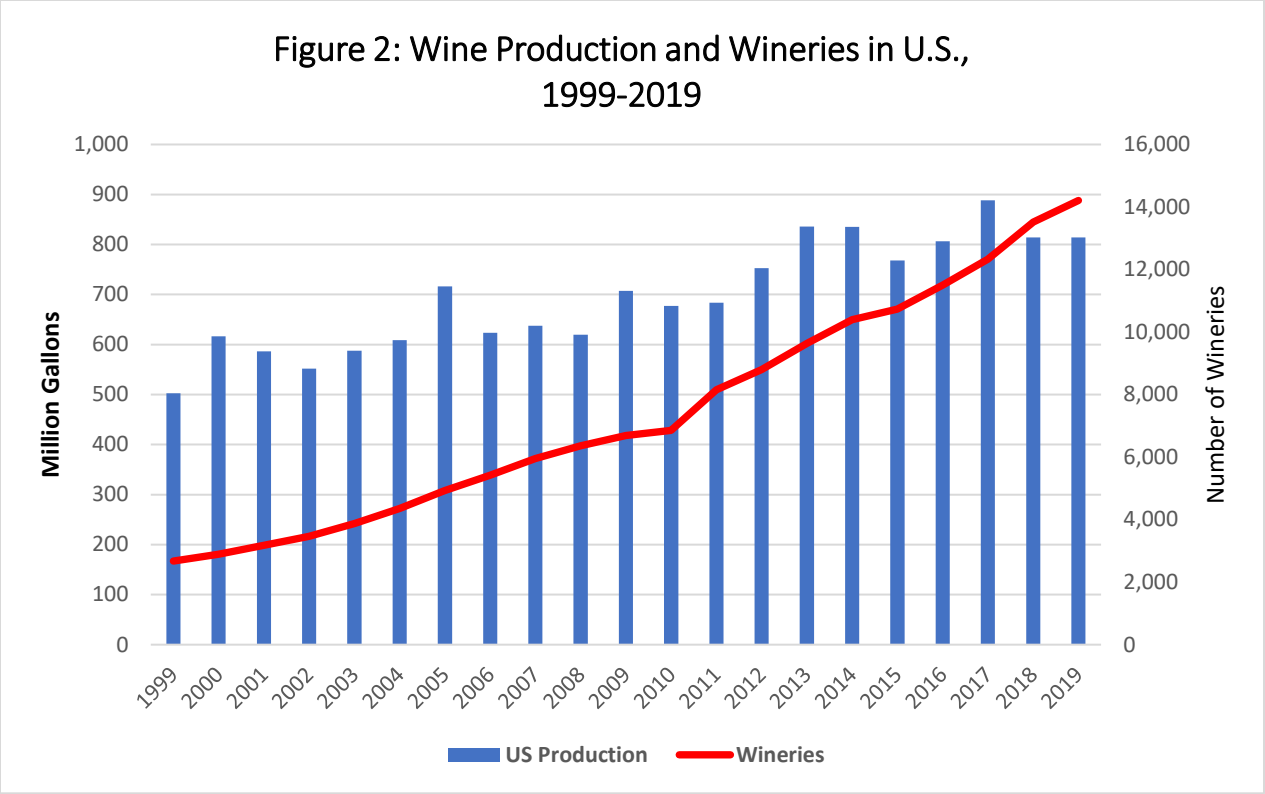
	Country	Gallons
1	Portugal	13.66
2	France	11.04
3	Italy	9.59
4	Switzerland	8.32
5	Belgium	6.93
6	Australia	6.93
7	Romania	6.58
8	Hungary	6.45
9	Sweden	6.29
10	Germany	6.18

	Country	Gallons
11	Spain	5.92
12	Argentina	5.46
13	Netherlands	5.41
14	Great Britain	5.00
15	Greece	4.82
16	Canada	3.48
17	Chile	3.48
18	US	2.92
19	South Africa	2.33
20	Russia	2.22

https://www.bkwine.com/features/more/world-wine-production-reaches-record-level-2018-consumption-stable/; OIV, 2019

US Wine Industry

In the US, we see that 2017 was a bumper year for wine production. Wine production has increased from 503 million gallons in 1999 to 814 million gallons in 2019, an increase of 62 percent. Over the same period, the number of wineries has increased from 2,674 to 14,209 (a 431 percent increase). The faster growth of wineries has led to average winery production falling from 87,979 gallons in 1999 to 57,307 gallons in 2019.



Source: **https://www.ttb.gov/wine/wine-statistics; https://www.ttb.gov/foia/list-of-permittees**

Figure 3 below illustrates that US wine sales by volume have increased by 71 percent since 2000. When we compare this with the 62 percent increase in US production, we can conclude that US sales of wine produced overseas has increased at a faster rate than domestically produced wine.

Source: U.S. Census Bureau; Sundale Research

State-By-State Wine Statistics

Table 2 shows production for the top 10 wine producing states and Iowa. While wine is now produced in all 50 states, 83.7 percent of the 2019 total production came from California. Iowa made up 0.04 percent of the US total.

Table 2: Ranking of Wine Producing States, 2019

	State	Gallons	Percent
1	California	681,828,478	83.7%
2	Washington	37,580,364	4.6%
3	New York	26,715,397	3.3%
4	Oregon	14,151,932	1.7%
5	Pennsylvania	12,216,515	1.5%
6	Michigan	4,809,761	0.6%
7	Florida	4,755,996	0.6%
8	Ohio	4,121,236	0.5%
9	Kentucky	3,565,531	0.4%
10	Texas	3,171,779	0.4%
28	**Iowa**	**329,283**	**0.04%**

Source: Iowa Alcoholic Beverages Division; **https://www.ttb.gov/wine/wine-statistics**; accessed and assembled by author, April 12, 2020

A bonded winery is a commercial enterprise that produces and stores wine under a bond that guarantees payment of the federal excise tax. In 2019, there were 14,209 bonded wine producers in the US, with each state having at least one producer. California accounted for 37.5 percent of the total, while Iowa accounted for 1.1 percent of the total.

Table 3: Ranking of States by Number of Federally Bonded Wineries (2019)

	State	Wineries	Percent
1	California	5,325	37.5%
2	Washington	1,207	8.5%
3	Oregon	789	5.6%
4	Texas	750	5.3%
5	New York	664	4.7%
6	Michigan	569	4.0%
7	Pennsylvania	451	3.2%
8	Virginia	429	3.0%
9	Ohio	415	2.9%
10	Missouri	277	1.9%
15	**Iowa**	**160**	**1.1%**

Source: **https://www.ttb.gov/statistics/wine-2019-statistics, accessed and assembled by author, April 12, 2020**

Annual average wine consumption per capita in the US is 2.92 gallons. By comparison, Iowa's annual average wine consumption per capita is 1.53 gallons, 48 percent below the US average.

Table 4: Per Capita Consumption of Wine by State (2018)

State	Gallons
Alabama	1.74
Alaska	3.68
Arizona	2.79
Arkansas	1.53
California	3.69
Colorado	3.55
Connecticut	4.24
Delaware	5.01
District of Columbia	7.03
Florida	3.55
Georgia	1.73
Hawaii	3.82
Idaho	2.93
Illinois	2.99
Indiana	1.95
Iowa	**1.53**
Kansas	0.98
Kentucky	1.53
Louisiana	2.29
Maine	2.99
Maryland	2.71
Massachusetts	4.52
Michigan	2.50
Minnesota	2.99
Mississippi	1.18
Missouri	2.71
Montana	3.48
Nebraska	1.46
Nevada	4.59
New Hampshire	6.12
New Jersey	4.17
New Mexico	1.95
New York	3.49
North Carolina	2.92
North Dakota	2.44
Ohio	2.09
Oklahoma	1.32
Oregon	4.04
Pennsylvania	2.23
Rhode Island	3.96
South Carolina	1.73
South Dakota	2.02
Tennessee	1.88
Texas	2.28
Utah	1.39
Vermont	5.43
Virginia	3.34
Washington	3.62
West Virginia	0.70
Wisconsin	2.71
Wyoming	2.16
U.S.	**2.92**

Source: Source: U.S. Census Bureau; Sundale Research

Conclusion

The number of US wineries has increased steadily over the last 20 years, as has the volume of wine sales. Production of US wine has fluctuated significantly during that period, with the last two years showing a decrease in national production. Most recent data suggest that Iowa ranks 28th in terms of production but 15th in the number of wineries per state. Average per capita wine consumption in Iowa is below average.

Chapter 3: The Wine Industry in Iowa

A Brief History of Iowa's Wine Industry

Grapes have been grown in Iowa since as early as 1857 when a vineyard was planted in western Iowa near Council Bluffs. In fact, Iowa ranked 11th in grape production in the United States in 1899. In 2019, Iowa ranked 28th in terms of wine production.[1]

In his 2019 publication, *A History of Iowa Wine, Vines on the Prairie*, John N. Peragine identifies several factors that led to the initial decline of the Iowa wine industry:

1. ***Early Prohibition*** — While Prohibition began nationally in 1920, Iowa had begun its own prohibition in 1916. Alongside Kansas and Maine, Iowa was one of the strongest advocates of prohibition. Iowa ratified the Twenty-First Amendment which repealed Prohibition in 1933.
2. ***Armistice Blizzard of 1940*** — An extratropical cyclone blizzard began on November 11. This storm dumped twenty-seven inches of snow in some areas in forty-eight hours. The damage to vineyards was catastrophic. The eighty-mile-an-hour winds and the weight of the snow crushed and broke vines.
3. ***Herbicide 2,4-D*** — This herbicide was developed during WWII to kill enemy rice and potato crops. It did not work because the crops were resistant to it. However, after the war it was released as a broadleaf herbicide to be used around crops such as rice. However, it soon became evident that when grapevines were exposed, they wilted and died. The use of the herbicide became a real issue for the grape growing industry starting in the early 1960s. The issues associated with the use of 2,4-D is one that still affect Iowa's vineyards.
4. ***Mechanization of Farming*** — There was a movement toward more row crops such as corn and soybeans that lend themselves to being farmed mechanically that served to diminish the number of grapes grown in Iowa.

In the late 1980s-early 1990s, a movement called Cold Climate Viticulture started in Iowa and other Midwest and Northeastern states, where vineyard owners started to look at American and French hybrid grape varieties that could withstand the climate.[2] Grape production has increased significantly since then, growing from approximately 30 acres in 2000 to more than 1,200 acres in 2018.[3]

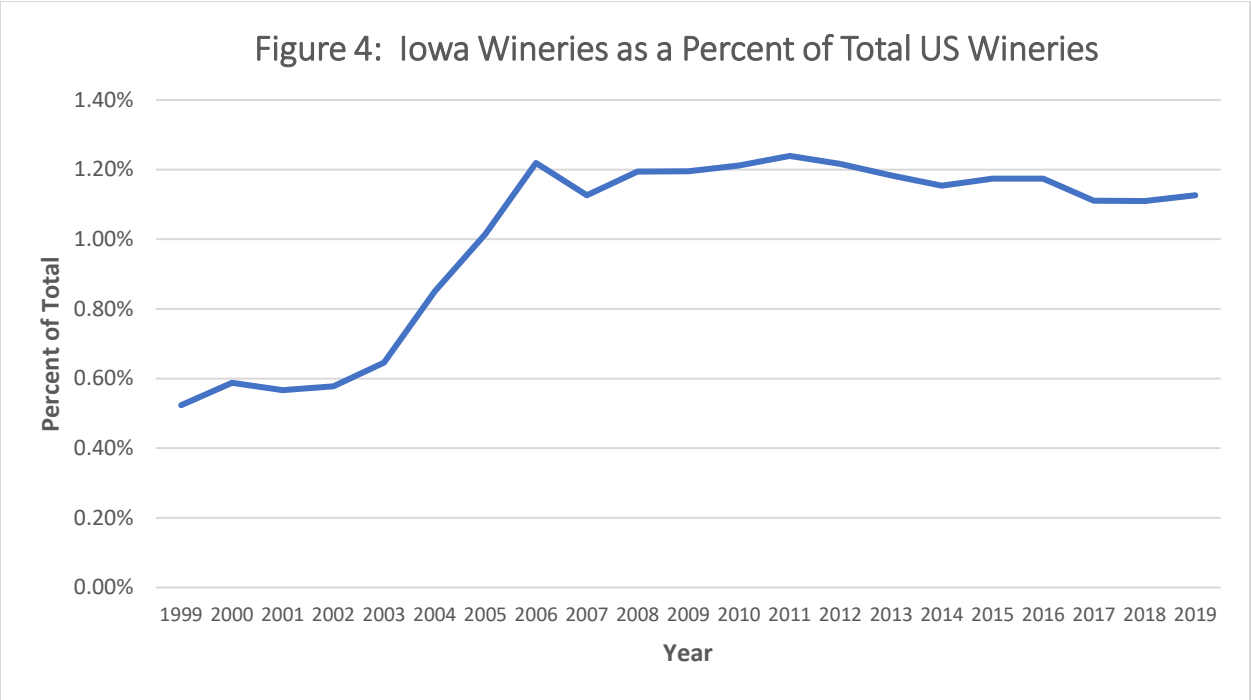
[1] **https://www.ttb.gov/wine/wine-statistics**, accessed April 16,2020

[2] **https://reeis.usda.gov/web/crisprojectpages/0225755-northern-grapes-integrating-viticulture-winemaking-and-marketing-of-new-cold-hardy-cultivars-supporting-new-and-growing-rural-wineries.html**, accessed April 16, 2020

[3] **https://www.leopold.iastate.edu/files/pubs-and-papers/2002-08-grape-expectations-food-system-perspective-redeveloping-iowa-grape-industry.pdf**, accessed May 27, 2020

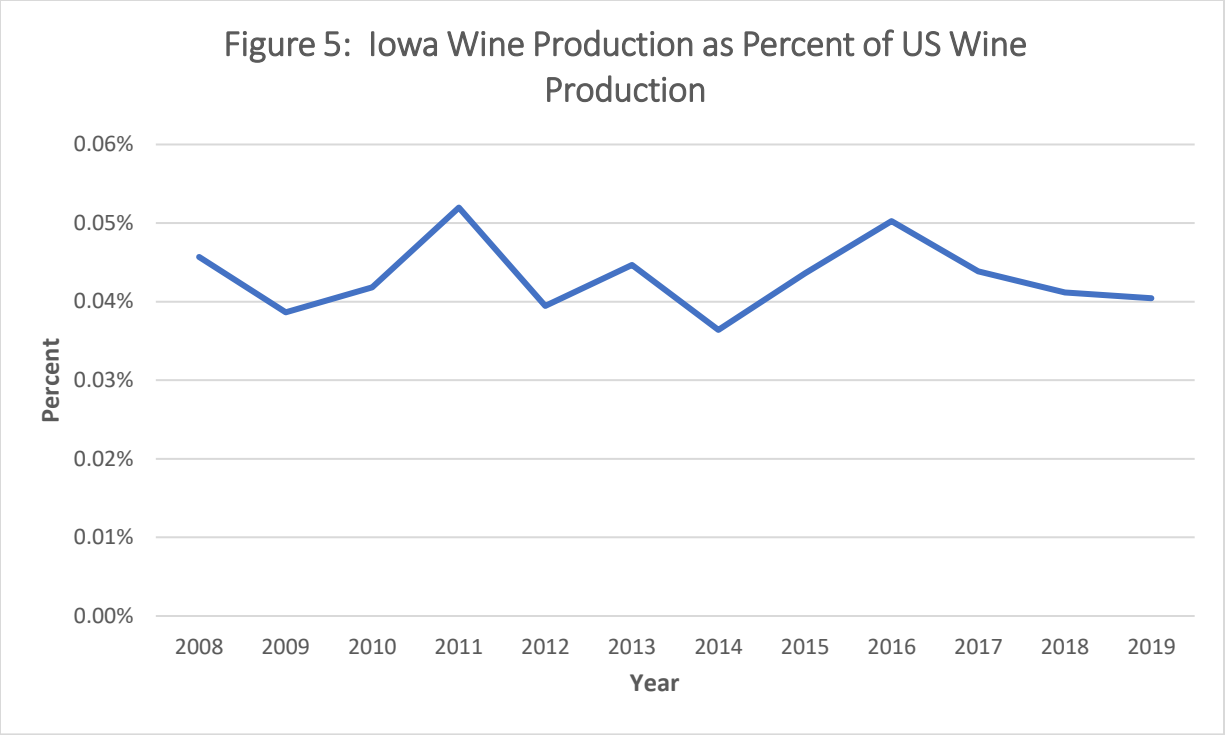
Iowa and US Wine Industry Trends

Figure 4 illustrates how Iowa wineries have increased significantly as a percentage of total US wineries since 2000. Iowa's percentage of US wineries in 2000 was 0.6 percent, peaked at 1.2 percent in 2011, and leveled off at around 1.1 percent. Note that for Iowa, this figure includes not only wineries, but also meaderies and cideries.



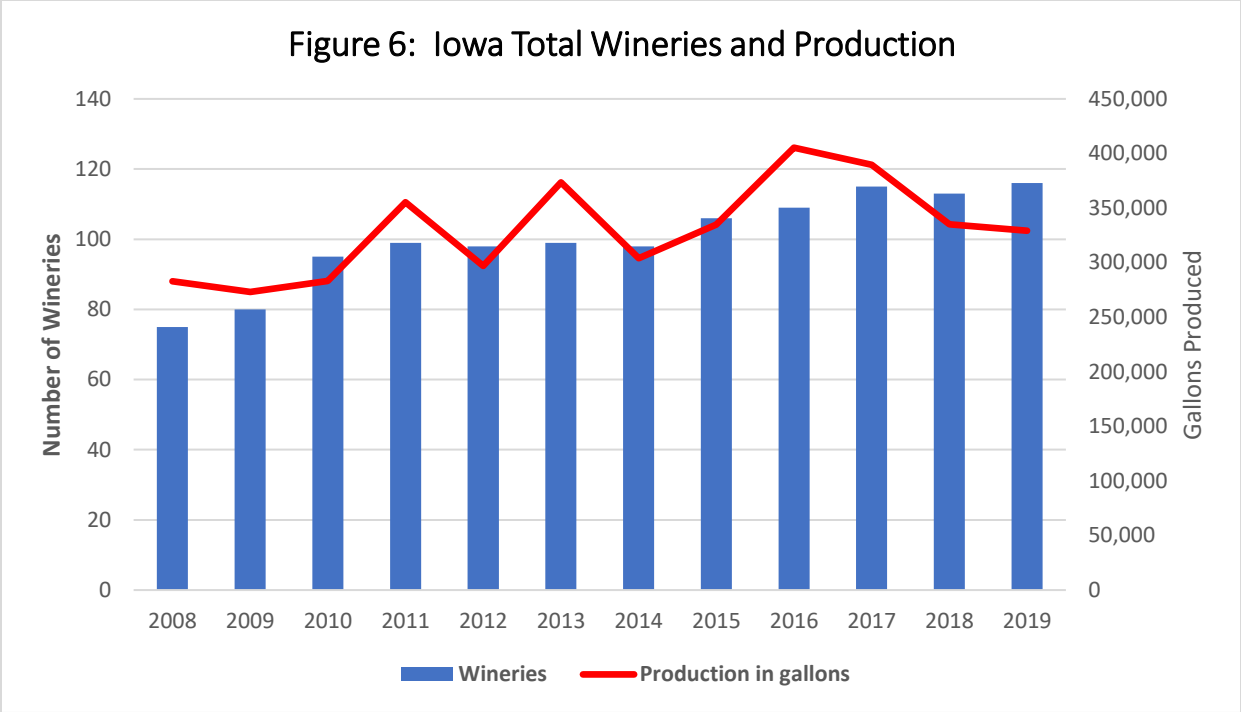
Source: **https://www.ttb.gov/foia/list-of-permittees**

When we look at trends in Iowa's wine production compared to US wine production (Figure 5), we see that Iowa has been fairly stable, hovering between 0.04 percent to 0.05 percent over the last decade.



Source: **https://www.ttb.gov/wine/wine-statistics**

Figure 6 illustrates that over the last 10 years the production of Iowa wine has fluctuated but generally has exhibited an upward trend. The number of wineries reporting to Iowa's Alcoholic Beverages Division (ABD) has increased at a greater rate than production, causing the average wine production to fall from 3,774 gallons in 2008 to 2,839 gallons in 2019.



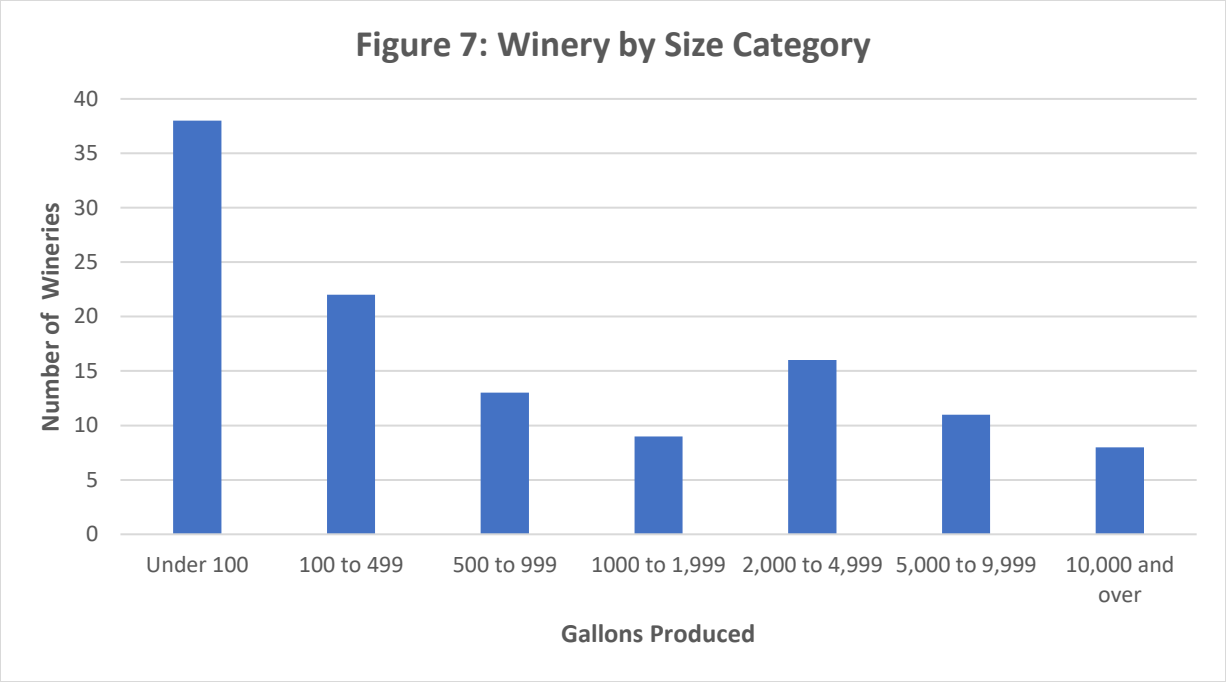
Source: https://www.extension.iastate.edu/wine/iowa-native-wine-production-sales-report

Characteristics and Structure of Iowa's Wine Industry in 2019

In 2019, there were a combined total of 117 wineries and meaderies/cideries licensed by the Alcoholic Beverages Division (ABD). This total breaks out as follows:

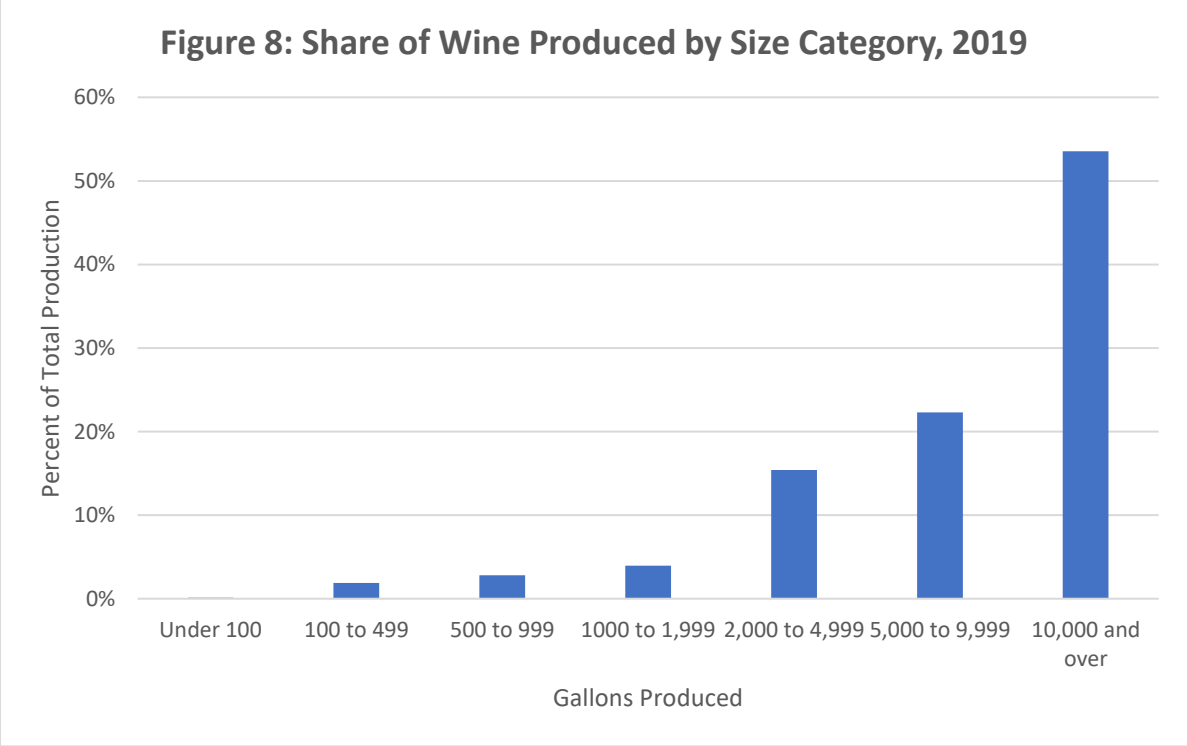
- 109 wineries
- 3 meaderies
- 5 cider producers

However, for brevity, in this report we will lump wineries, meaderies and cideries together and call them wineries. In 2019, only 100 of the 117 businesses reporting to ABD had sales and inventory. These wineries produced 329,283 gallons. Figure 7 illustrates how this production is split among wineries of different sizes. For example, eight wineries produced 10,000 or more gallons each. On the other hand, 38 wineries produced 100 gallons or less.



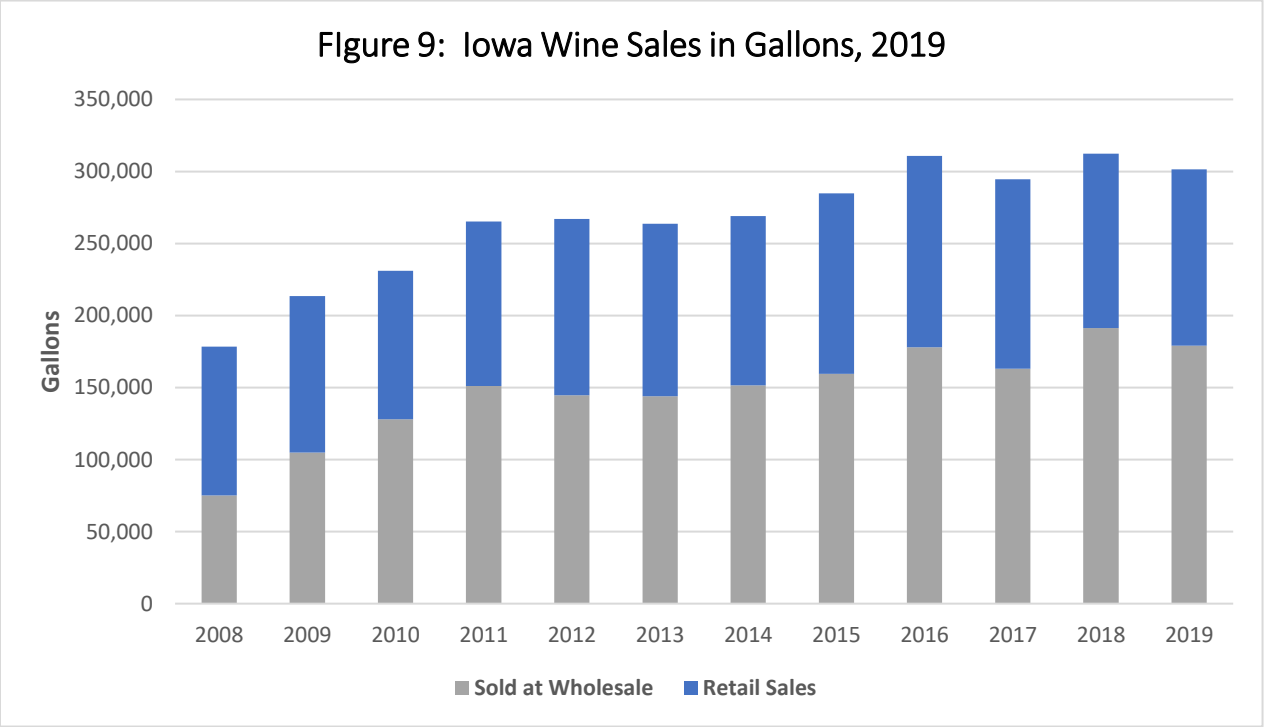
https://www.extension.iastate.edu/wine/iowa-native-wine-production-sales-report

Figure 8 illustrates the degree of concentration in wine production among Iowa wineries. In 2019 eight wineries were responsible for 54 percent of all Iowa wine production, a significant concentration. In contrast, 73 wineries accounted for 4.8 percent of all production.



Source: https://www.extension.iastate.edu/wine/iowa-native-wine-production-sales-report

Sales of native wine can occur at either the wholesale or the retail level. Direct sales can occur either at the winery (included in the wholesale data) or at a retail outlet (such as a grocery store). Sales that occur at the winery are classified as wholesale sales by ABD as the Iowa wine excise tax is not levied on sales occurring at the winery. Total sales of Iowa wine have increased by 69 percent since 2008 (Figure 9). During the same period, the percentage of sales occurring at the retail level has decreased by 19 percent, while sales at the wholesale level have increased by 138 percent. In fact, when we look at relative shares of retail and wholesale sales, we see that the ratios have flipped. In 2008, 58 percent of total sales were at the retail level. In 2019, 59 percent of total sales were at the wholesale level.

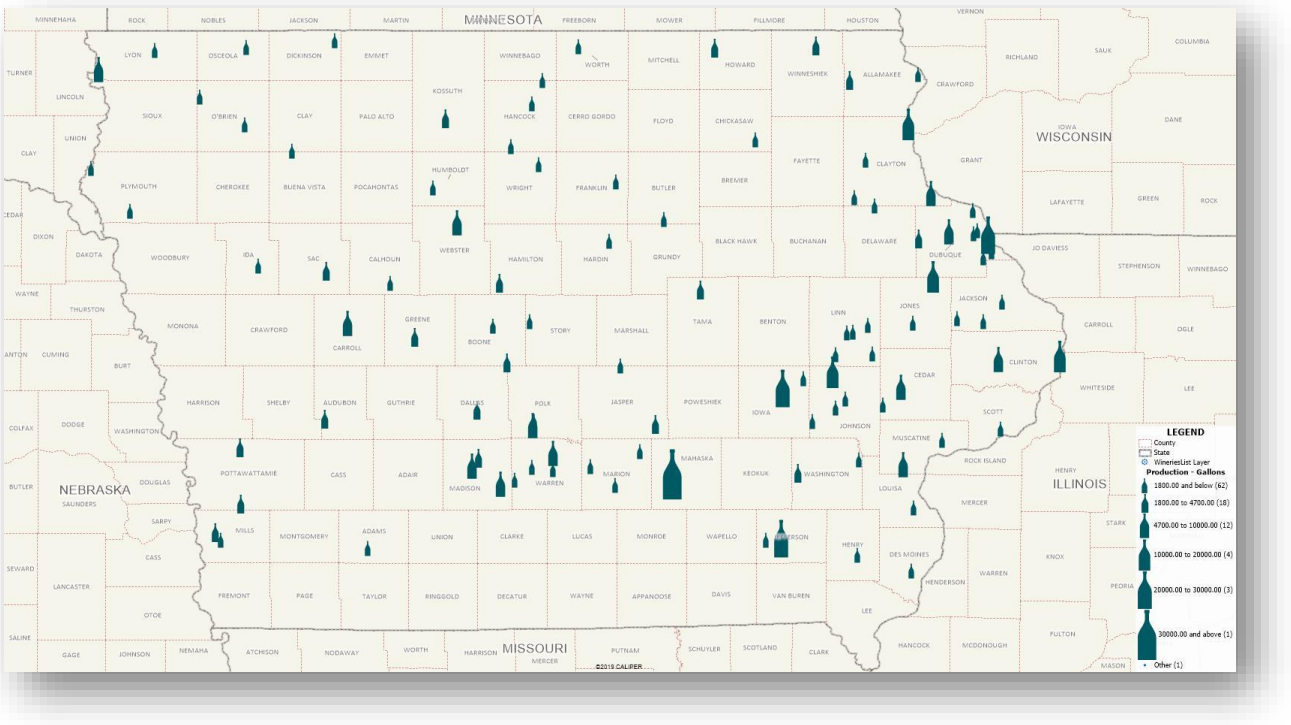


Source: https://www.extension.iastate.edu/wine/iowa-native-wine-production-sales-report

Characteristics of Iowa Wineries

The map below illustrates that almost 75 percent of Iowa wineries are located in rural areas. The scale is based on gallons produced.

Figure 10: Geographic Distribution of Wineries, 2019



Sixty percent of all wineries are currently part of one of Iowa's eight wine trails, up from 43 percent in 2012.

Iowa Wine Trail	11 wineries
I-80 Wine Trail	10 wineries
Western Iowa Wine Trail	6 wineries
Heart of Iowa Wine Trail	8 wineries
Amana Colonies Wineries	7 wineries
Scenic Rivers Wine Trails	9 wineries
Northwest Prairie Wine Trails	15 wineries
Back Roads Wine Trail	4 wineries

Services Offered by Iowa Wineries

To obtain information on the types of services offered by Iowa wineries we took a random sample of 47 wineries and examined their Facebook pages and web sites (when available).

Table 5 indicates that the vast majority of wineries have tasting rooms. In addition, almost half of Iowa wineries have venue spaces that can be used to host weddings, birthday parties, music events and other special events. Since only a few wineries have a restaurant, we can assume that the vast majority of wineries with venues use catering services. Fewer than 1 in 5 wineries offer sales on-line or through a wine club, suggesting this could be an area for future growth.

Table 5: Type of Services Provided

Tasting Room	85%
Restaurant	4%
Venue	48%
On-Line/Wine Club	19%

Source: Author, March 2020

Due to the period during which the research was conducted and due to the pandemic, it was not possible to obtain data on hours and days of service during the summer.

Conclusion

Data presented in this section illustrates that the number of wineries has increased steadily over the last decade. Production peaked in 2016, declining by an average 6.3 percent annually in the subsequent 3 years. The sales trend is somewhat different, with sales by volume peaking in 2018, falling by 3.5 percent in 2019. Data presented in this chapter will be used, along with additional data sources, to model the economic contribution of the Iowa Wine Industry to the state economy. This is presented in the next chapter.

Chapter 4: Economic Impact of Iowa's Wine Industry

Iowa's wine industry directly impacts the state's and nation's economies through the products it produces and sells; through the purchases of materials, equipment, and services from suppliers; and the wages it pays to employees. Not only does the value vineyards and wineries add to the materials they purchase in the production of wine get injected into the economy but purchases made by their employees and suppliers produce additional spillover effects as these flows of funds turn over in the state's and nation's economies. This chapter summarizes the analysis of these primary and secondary economic impacts.

The three categories of economic impacts addressed include:

- The value added from the production of wine and other products, and the provision of services by vineyards and wineries (Production Impacts)
- The impact on employment by vineyards and wineries and the spillover impacts associated with the direct employment (Employment Impacts)
- The consumption spending by employees from their earnings and additional consumption spending by the employees of industry suppliers (Labor Income Impacts)

In addition, this chapter will summarize the industry's impact of 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 wine industry. The central feature of the model is the 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
- US-Level Construction Sector Output
- US-Level Foreign Imports and Exports
- Census of Government Finance

The data used to measure and evaluate economic activity within the Iowa wine industry comes from the following sources and is for calendar year 2019:

- The Iowa Alcoholic Beverages Division (ABD) Monthly Gallonage Reports
- A survey of Iowa Vineyards and Wineries
- An Analysis of Gross and Taxable Production and Sales by Winery from data presented in the Iowa Wine Report - 2019 Native Wine Production and Sales Report Prepared by Farm, Food and Enterprise Development for Midwest Grape and Wine Institute April 2020
- Iowa Specific Wine Sector Employment and Establishment Data from the U.S. Bureau of Labor Statistics

We had hoped to obtain sufficient information on industry costs from our survey of Vineyards and Wineries to calculate the economic impact using industry cost. However, the response to our survey was very limited (we believe the low response rate was heavily influenced by the COVID-19 pandemic) and we were unable to extrapolate costs for the industry from the small number of firms who provided detailed cost information. We therefore changed our approach to one that measures economic impact using the value of winery sales. Based on extrapolations from our survey results along with cross-checks using secondary sources we estimate total winery sales in 2019 at $19.5 million. Wine sales were estimated at $16.8 million based on 1.5 million bottles being sold at an average price per bottle of $13.88. Other sales associated with wineries was estimated at $2.7 million.

The development of economic impact estimates consisted of the following steps:

- First, information on wine production was obtained from the Iowa Alcohol Beverages Division and reviewed and corrected with the assistance of staff from Farm, Food and Enterprise Development
- Second, price information was obtained from a sample of winery owners on Iowa wine prices at different levels of the market channel (*i.e*., production, wholesale, and retail). Then, the weighted average price data were combined with the production amount to determine the value of wine output at each level of the market channel. In addition, an estimate was developed for the value of other services, such as hosting events, provided by Iowa wineries.

- Third, the initial step of the IMPLAN analysis involved determining the impact area and making adjustments to the wineries sector defaults based on data developed during steps 1 and 2.
- Fourth, the IMPLAN Iowa wineries scenario was developed and run, which yielded economic impact estimates measured by jobs, worker compensation, and industry output.
- Fifth, the direct, indirect, and induced economic impacts for jobs, worker compensation, and industry output were summarized by major industry sector.
- Sixth, 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 wine 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 wine industry.
- **Induced impacts** emanate from the local spending of wages and salaries for both employees of the wine industry, and the employees of the indirectly affected industries.

State Economic Impacts

State economic impacts include the value of purchases made by wineries 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 winery 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 winery operations in Iowa are the amounts of wine produced and sold. Monthly reports filed by wineries with the Iowa Alcoholic Beverages Division include statistics on wine production and sales. Furthermore, the sales statistics are disaggregated into three categories, sales at the winery, sales to in-state distributors, and sales directly to retailers. In addition, the ABD statistics account for breakage and returns and for changes in inventory. Table 6 summarizes sales and distribution channels of wine produced by Iowa wineries in 2019.

Table 6: 2019 Native Iowa Wine Sales

Gallons of Wine Sold at the Winery	122,508
Gallons of Wine Sold to Retail Stores Outside of the Winery	145,465
Gallons of Wine Sold to Licensed Wholesalers	33,535

Source: Iowa Wine Report - 2019 Native Wine Production and Sales Report Prepared by Farm, Food and Enterprise Development for Midwest Grape and Wine Institute April 2020

We explored two methods for estimating the economic impacts of the Iowa native wine industry using the IMPLAN model. 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 native wine produced in the state. The second method follows a market channel approach, which determined the value added at each of the levels of the wine 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.

We used the IMPLAN model to develop a market channel analysis consisting 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 other than producing and selling wine were defined. Third, direct impacts were estimated separately for each of three segments of the market channels. These are referred to as "Events" in the IMPLAN model. Table 7 summarizes the direct impact estimates by market channel segment for Iowa wineries.

Table 7: Winery Direct Impacts by Market Channel Segment, 2019

Market Channel Segment	IMPLAN Sector Number	Market Channel Value
Wineries	107	$13,190,000
Wholesale - Grocery and related product wholesalers	398	$2,070,000
Retail - Food and beverage stores	406	$4,251,000

The values of direct impacts estimated for each segment of the market channel are incremental amounts. For example, the $2,070,000 indicated for wholesalers equals the value added by this segment of the market channel. It does not represent the total revenue earned by wine wholesalers from native wine sales.

Table 8 presents summary results for jobs, labor compensation, and output measures for the direct, indirect, and induced categories of economic impacts.

Table 8: IMPLAN Model Iowa Economic Impact Estimates for Full Market Channels, 2019

Impact Type	Employment	Labor Compensation	Output
Direct Effect	561	$6,420,078	$19,511,000
Indirect Effect	34	$1,933,124	$6,102,258
Induced Effect	44	$1,859,753	$6,102,882
Total Effect	638	$10,212,955	$31,716,141
Multipliers	1.14	1.59	1.63

We should point out that job data in Tables 8 and 9 counts both full-time and part-time jobs. This measure is not equivalent to full-time equivalents. Many of the employees who work in wineries work part-time and/or are seasonal. The same is true for grocery and convenience stores and for bars and restaurants at the retail level of the market channel.

Table 9 represents the jobs impact by business sector for the Iowa wine industry that generate 2 or more total jobs. The 561 direct jobs are accounted for in three business sectors:

- wineries
- retail
- wholesale

Thirty-four indirect jobs were accounted for with many business sectors contributing to this total; for example, 3 jobs in warehouse and storage and 2 in truck transportation. Forty-four induced jobs were accounted for in a variety of sectors including 2 in retail and 2 in restaurants. Jobs directly related to the wine sector make up the preponderance (87.9 percent) of total jobs associated with the wine sector.

Table 9: Winery Jobs Impacts, 2019

Sector	Description	Direct	Indirect	Induced	Total
0	Total	561	34	44	638
107	Wineries	487	0	0	487
406	Retail - Food and beverage stores	63	0	2	65
398	Wholesale - Grocery and related product wholesalers	11	2	0	12
447	Other real estate	0	3	1	4
422	Warehousing and storage	0	3	0	3
509	Full-service restaurants	0	1	2	3
510	Limited-service restaurants	0	0	2	2
417	Truck transportation	0	2	0	2
490	Hospitals	0	0	2	2
395	Wholesale - Machinery, equipment, and supplies	0	2	0	2
400	Wholesale - Other nondurable goods merchant wholesalers	0	2	0	2
469	Management of companies and enterprises	0	1	0	2
411	Retail - General merchandise stores	0	0	2	2
476	Services to buildings	0	1	0	2
511	All other food and drinking places	0	1	1	2
441	Monetary authorities and depository credit intermediation	0	1	1	2
472	Employment services	0	1	1	2

Table 10 presents the labor compensation impact estimates for the business sectors with the greatest impacts (those who have an impact of $50,000 or more). This measure includes wages and salaries, employee benefits, and payroll taxes. Direct compensation makes up 65.1 percent of total labor compensation associated with the wine industry.

Table 10: Winery Labor Compensation Impacts, 2019

Sector	Description	Direct	Indirect	Induced	Total
0	Total	$6,237,294	$1,701,248	$1,644,692	$9,583,235
107	Wineries	$3,844,796	$797	$13	$3,845,606
406	Retail - Food and beverage stores	$1,666,479	$425	$42,927	$1,709,831
398	Wholesale - Grocery and related product wholesalers	$726,019	$102,565	$8,185	$836,769
469	Management of companies and enterprises	$0	$137,506	$34,031	$171,537
422	Warehousing and storage	$0	$150,359	$18,027	$168,386
490	Hospitals	$0	$0	$150,422	$150,422
395	Wholesale - Machinery, equipment, and supplies	$0	$146,104	$2,804	$148,907
400	Wholesale - Other nondurable goods merchant wholesalers	$0	$125,060	$20,711	$145,771
483	Offices of physicians	$0	$0	$138,327	$138,327
441	Monetary authorities and depository credit intermediation	$0	$62,010	$60,758	$122,768
417	Truck transportation	$0	$104,721	$17,806	$122,526
439	Non-depository credit intermediation and related activities	$0	$36,715	$40,506	$77,221
472	Employment services	$0	$39,146	$23,256	$62,401
526	Postal service	$0	$49,494	$12,360	$61,855
445	Insurance agencies, brokerages, and related activities	$0	$41,938	$15,154	$57,092
509	Full-service restaurants	$0	$11,977	$40,129	$52,106

Table 11 presents the estimated output impacts for business sectors impacted most by the winery industry (those with an associated output of $500,000 or greater). 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. The direct output effects of $19.5 million equal 61.5 percent of the total output. The $6.1 million of indirect output effects equals 19.2 percent of the total. This indirect amount represents expenditures made by wineries to their suppliers.

Table 11: Winery Output Impacts, 2019

Sector	Description	Direct	Indirect	Induced	Total
0	Total	$19,511,000	$6,102,258	$6,102,882	$31,716,141
107	Wineries	$13,190,000	$2,734	$45	$13,192,779
406	Retail - Food and beverage stores	$4,251,000	$1,084	$109,502	$4,361,586
398	Wholesale - Grocery and related product wholesalers	$2,070,000	$292,430	$23,337	$2,385,767
449	Owner-occupied dwellings	$0	$0	$702,504	$702,504
447	Other real estate	$0	$482,147	$185,660	$667,807
400	Wholesale - Other nondurable goods merchant wholesalers	$0	$493,109	$81,662	$574,771
395	Wholesale - Machinery, equipment, and supplies	$0	$499,269	$9,580	$508,849

National Economic Impacts

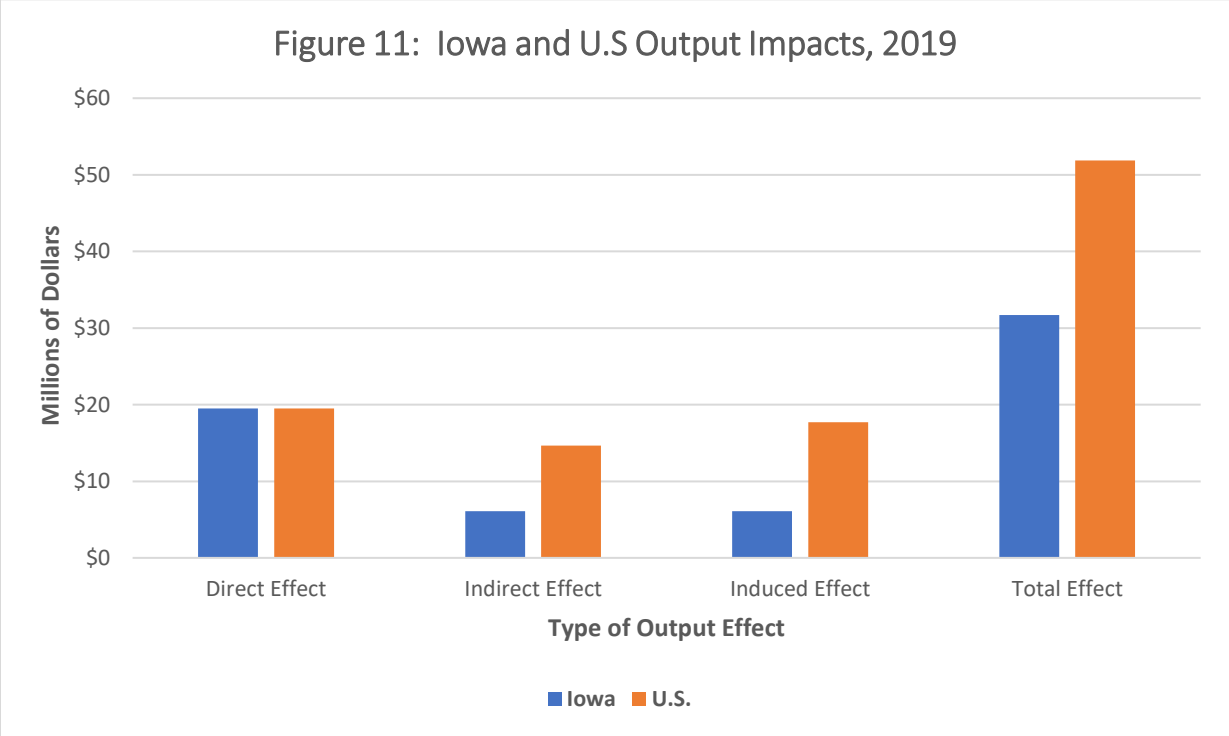
As mentioned previously, some of the inputs used in producing wine are purchased outside of Iowa. Consequently, it is logical to expect that the national impacts of the Iowa wine industry are greater than the state impacts.

Table 12 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 wine 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 wine 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.

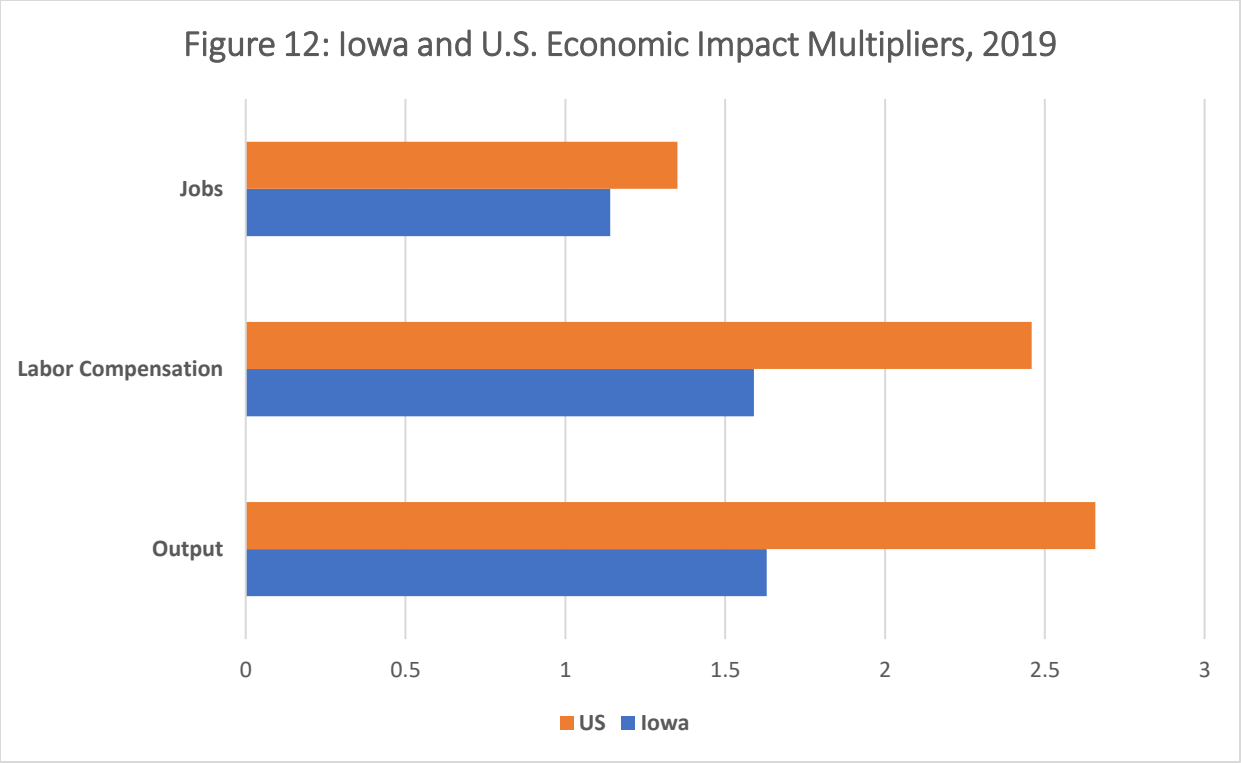
Table 12: IMPLAN Model Nationwide Economic Impact Estimates for Full Market Channels, 2019

Impact Summary	Jobs	Labor Compensation	Output
Direct Effects	549	$7,091,622	$19,511,000
Indirect Effects	92	$4,748,905	$14,669,619
Induced Effects	101	$5,597,924	$17,692,056
Totals	741	$17,438,451	$51,872,675
Multipliers	1.35	2.46	2.66

The significant parts of the economic impact comparisons between the Iowa model results (Table 9) and the nationwide model results (Table 13) are the indirect effects, the induced effects, and the multipliers. Figure 11 shows the comparisons between the Iowa and U.S. output measures.

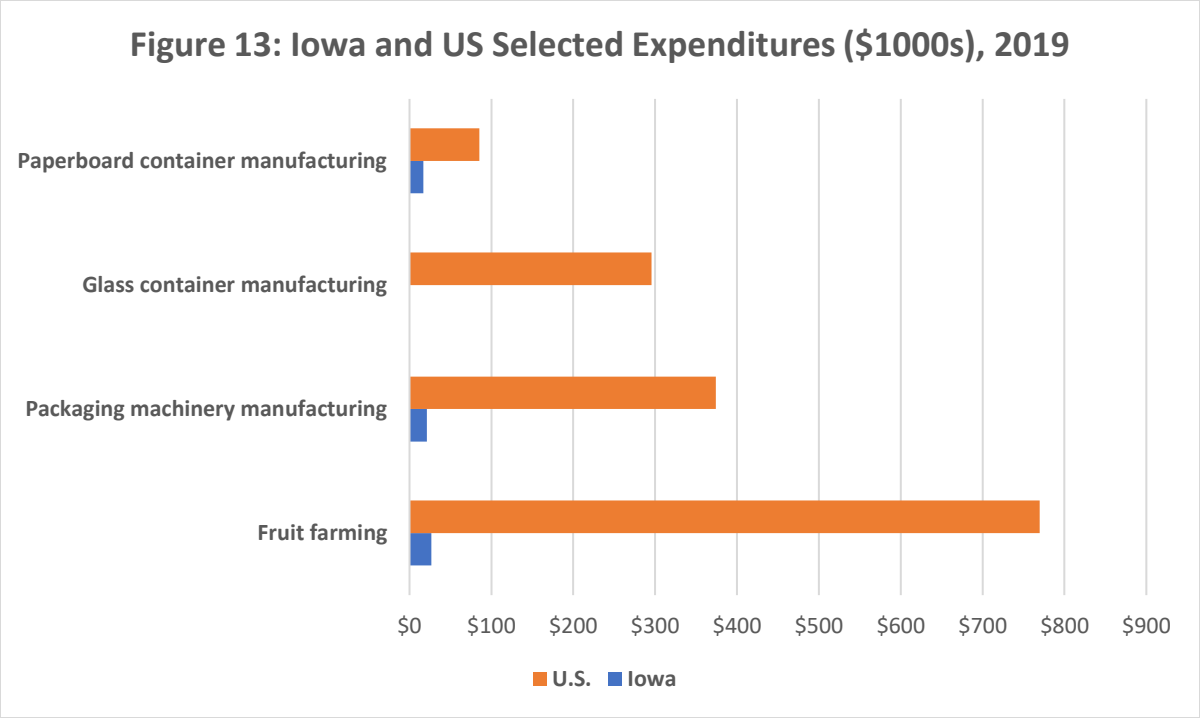


The multipliers provide additional perspective. These comparisons are summarized in Figure 12. The Iowa and United States output multipliers equal 1.63 and 2.66 respectively. One of the factors driving this difference is that the indirect output measure nationally equals $14.7 million, which is $8.6 million greater than the Iowa indirect output measure. The national induced effects are $11.6 million 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.



There are several sectors that illustrate the difference in indirect effects from the Iowa and national perspectives. Figure 13 shows the estimated amounts of purchases made from paperboard container manufacturers, glass container manufacturers, package machinery manufacturers, and fruit farming by suppliers to the Iowa wine industry. The estimate for total paperboard container purchases equals $770,000, with just 3.4 percent being purchased from Iowa businesses. Comparable figures for the glass container purchases are $290,000 in total purchases with zero being supplied by Iowa firms. Iowa wineries purchased an estimate $374,000 in packaging machinery products in 2019, with 5.7 percent coming from Iowa firms. Our final example is fruit purchases. Iowa wineries spent $770,000 in 2019 with $26,000 being purchased from Iowa vineyards.

The total amount of the induced effects for the output measure nationally equals $17.7 million, which is 2.9 times the amount of this effect captured within the borders of Iowa. Since induced affects 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 federal and state wine excises taxes, wineries either directly or indirectly pay property taxes and taxes on company profits. They also collect and remit employee payroll taxes and, in many instances, collect and remit individual income taxes owed by their employees. In addition, they collect state and local option sales taxes.

Wine is subject to an excise tax of between $1.07 and $3.40 per gallon, based on alcohol content and carbonation level. However, qualifying small domestic wineries producing 250,000 wine gallons or less are eligible for a tax credit generally equal to 90 cents per gallon on the first 100,000 gallons produced, with that benefit phasing out between 150,000 gallons and 250,000 gallons

Iowa's state wine excise tax equals $1.75 per gallon. Iowa's wine excise tax rate is the 4th highest among the 50 states. During fiscal year 2019, Iowa collected a total of $8,491,378 in wine excise tax, but only 3.2 percent of the total was from Native Wine. The Iowa wine excise tax is not levied on wine sold at wineries.

The amounts of other state and local taxes generated by wineries during 2019 as estimated by the IMPLAN model are summarized in Table 13. The estimated total amount of taxes paid is $1.5 million.

Table 13: Iowa Wine Industry State and Local Taxes, 2019

Sales and Use Taxes	**$552,470**
Property Tax	$551,633
Individual Income Tax	$218,456
Corporate Income Tax	$24,691
Other Business Taxes and Fees	$68,152
Other Household Taxes and Fees	$63,153
Total Taxes and Fees	**$1,478,555**

Conclusion

We calculate various measures of how much the Iowa Wine Industry contributes to the state economy. The industry contributed $31.7 million to the Iowa economy in 2019. Other economic benefits generated in Iowa include:

- 638 total jobs, 561 of which are directly related to wine production
- more than $10 million in labor compensation
- $1.75 million paid in state and local taxes

Chapter 5: Wine Industry Outlook

When work on this study began in mid-January, the outlook for continued growth of the Iowa wine industry seemed stable. The Coronavirus pandemic has introduced considerable uncertainty into the outlook for the future.

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

Development of these outlooks draw heavily on historical information presented in Chapters 2 and 3 of this report along with industry forecasts developed by Sundale Research, a national market research firm.

Outlook for the U.S. Wine Industry

According to Sundale Research, prior to COVID-19, the outlook for the wine industry in the US was one of slow but stable growth. Their forecasts were based on the following assumptions.

- Many wineries will take advantage of the migration to at-home consumption by emphasizing off-premise retail sales, including direct-to-consumer sales via mail and tasting rooms.
- More convenient and effective e-commerce web sites are facilitating direct-to-consumer wine sales growth.
- A few potential obstacles include the growing popularity of other alcoholic beverages such as whiskey, tequila, and craft beer and higher manufacturing costs for wineries.
- One factor that could impede on future wine sales in the US and revenues for US wineries is the introduction of tariffs on some imported and exported products.
- Despite the growing competition, wine sales will continue to rise at a steady pace through 2023, as Millennials increase their wine consumption and Baby Boomers and Generation X consumers continue to purchase higher priced wines. The emergence of Generation Z into the alcoholic beverage marketplace will also positively affect wine sales over the next several years.

Table 14: US Wine Industry Forecasts

Year	Volume Sales	Dollar Sales	Average Price
2020	0.8%	2.7%	1.8%
2021	1.3%	3.5%	2.1%
2023	2.0%	4.3%	2.3%
2024	1.5%	3.2%	1.7%
2025	1.3%	3.5%	2.2%

Source: Sundale Research, 2019

Baseline (pre-Pandemic) Iowa Wine Industry Projections

Five years ago, the number of wineries in Iowa reached over 100 for the first time, and seems to have stabilized around that level. According to ABD data, the amount of native wine, as a percent of total wine sold in Iowa, has averaged 7.3 percent over the last five years, peaking at 8.5 percent in 2016. While average non-native wine sales have increased by an average of 2.8 percent over the last five years, native wine sales have averaged 2.3 percent growth over the same period. Note that there has been a divergent trend since 2016: non-native wine sales have continued to increase while native wine sales have declined.

Table 15: Trends in Iowa Wine Sales, 2015-2019

Year	Non-Native Wine Sales	Native Wine Sales	Total Wine Sales	Native Wine as a Percent of Total
2015	4,367,585	334,897	4,702,482	7.1%
2016	4,369,835	405,317	4,775,152	8.5%
2017	4,616,925	389,546	5,006,471	7.8%
2018	4,666,602	335,012	5,001,614	6.7%
2019	4,697,034	329,283	5,026,317	6.6%

Some 60 counties in Iowa contain one or more winery. So theoretically, it seems possible that the number of wineries could increase if wineries were established in the remaining counties based on their percentage of the adult population. This would translate into 38 additional wineries.

Table 16: Number of Wineries and Wine Production by County, 2019

County	Number of Wineries	Production in Gallons	Sales in Gallons	Inventory in Gallons
Allamakee	2	4,487	3,646	5,302
Audubon	1	2,100	1,666	2,813
Boone	2	2,235	2,889	4,834
Butler	1	0	40	2,217
Calhoun	1	1,062	905	94
Carroll	1	8,622	10,437	5,585
Cedar	2	6,781	2,593	37,445
Chickasaw	1	0	260	2,990
Clay	1	1,479	824	18,205
Clayton	5	20,123	18,436	10,221
Clinton	2	17,279	18,315	31,817
Dallas	1	1,820	1,888	3,624
Des Moines	1	0	115	980
Dubuque	8	34,174	30,614	23,342
Emmet	1	192	1,845	7,690
Franklin	1	281	310	927
Greene	1	3,470	3,126	272
Hamilton	1	2,280	1,684	1,747
Hancock	2	592	398	1,282
Hardin	1	146	357	58
Henry	1	149	366	1,246
Howard	1	4,015	2,523	4,722
Humboldt	1	946	903	523
Ida	1	403	140	858
Iowa	4	46,110	36,436	36,251
Jackson	3	1,063	4,070	5,340
Jasper	1	3,729	3,155	345
Jefferson	2	27,881	25,833	13,307
Johnson	4	19,815	17,573	22,987
Jones	1	590	74	1,830
Linn	1	0	192	2,356
Kossuth	1	2,803	2,359	5,718
Lee	1	300	241	453
Linn	4	1,501	1,802	3,112
Louisa	1	0	308	1,436
Lyon	2	6,376	5,357	4,994

Madison	3	12,960	10,771	16,485
Mahaska	1	35,933	30,954	82,372
Marion	3	1,751	389	6,915
Marshall	1	791	632	531
Mills	2	4,195	6,467	7,101
Muscatine	1	8,496	6,762	4,941
O'Brien	2	400	381	1,034
Osceola	1	17	42	157
Plymouth	2	636	308	1,046
Polk	2	8,136	10,034	12,038
Pottawattamie	2	5,677	4,621	10,555
Sac	1	1,910	979	2,678
Scott	1	946	1,249	417
Story	1	0	1,255	4,218
Tama	1	1,822	794	2,601
Warren	4	9,379	10,910	29,499
Washington	2	3,242	2,925	3,076
Webster	1	6,230	7,893	7,472
Winnebago	1	0	42	0
Winneshiek	1	3,807	2,344	8,746
Worth	1	143	23	352
Wright	1	0	53	195
Grand Total	**100**	**329,273**	**301,508**	**469,352**

However, looking at the concentration of wineries in other states, Iowa currently has more wineries per capita. Therefore, we do not feel it is realistic to assume any significant growth in the number of Iowa wineries over the forecast period.

Table 17: Winery and Wine Production in Iowa and Surrounding States, 2019

State	Wineries Per Million Population	Wine Production Per Million Population
Iowa	**66**	**135,606**
Illinois	17	125,335
Minnesota	30	110,241
Missouri	58	227,473
Nebraska	27	141,823
South Dakota	57	227,073
Wisconsin	42	329,806
US Average	39	193,625
Surrounding State Average	43	185,337

Source: **https://www.ttb.gov/foia/list-of-permittees**

Looking at wine production, Iowa produces less wine per capita than four of the surrounding states. However, Iowa also has a lower than average consumption of wine per capita when compared to surrounding states (Table 4, Chapter 2).

Iowa wine production peaked in 2016 and has fallen at an annual average rate of -6.5 percent during the period 2016-2019. This does not follow national trends – where wine production has grown at an annual average rate of 2 percent over the same period.

Based on these trends, the historic relationship (correlation) between Iowa and US wine production, and discussion with experts in Iowa, we offer the following forecasts for native wine production for the next five years.

Table 18: Iowa Native Wine Production, 2008 to 2024

Year	Production in Gallons	Percent Change
2008	283,023	
2009	273,141	-3.5%
2010	283,202	3.7%
2011	355,271	25.4%
2012	296,909	-16.4%
2013	373,436	25.8%
2014	304,146	-18.6%
2015	334,897	10.1%
2016	405,317	21.0%
2017	389,546	-3.9%
2018	335,012	-14.0%
2019	329,283	-1.7%
2020	**331,021**	**0.5%**
2021	**333,844**	**0.9%**
2022	**338,100**	**1.3%**
2023	**341,291**	**0.9%**
2024	**344,104**	**0.8%**

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 native wine industry in both the short-term and the long-term. These sources include newspaper and magazine articles, the Wine Institute, and the Iowa Winegrowers Association. At this time, the best that can be offered about the future of the Iowa wine industry is a summary of what industry insiders speculate may happen and a brief scenario based on this speculation.

National Outlook

A mid-April edition of the Gomberg-Fredrikson Report suggests that the nation's vineyard and winery industry could reach $5.94 billion on an annualized basis in 2020.[4] While there are some positive trends in increased wine purchases from grocery stores and other outlets since the inception of the COVID-19 pandemic, the author warns that the impact of on-premise and tasting room closures plus potential declines in direct-to-consumer sales will offset any short-term sales gains when taking into account all sales channels. The Report warns that the COVID-19 pandemic is altering consumer buying patterns in areas such as off-premise and e-commerce in ways that will not be fully clear for some time.

[4] **https://wineinstitute.org/press-releases/us-wine-losses-from-covid-19-could-reach-5-94-billion/**

Table 19: Potential Impact of COVID-19 on the US Wine Industry

Type of Sale	Revenue (million)
On-Premise	-$2,540
Direct-to-Consumer	-$323
Tasting Room	-$3,000
Off-Premise	$1,330
Wine grapes	-$1,400

Source: **https://wineinstitute.org/press-releases/us-wine-losses-from-covid-19-could-reach-5-94-billion/**

The report also projects that that 97 percent of all US wineries that produce less than 50,000 cases will experience annual revenue losses of between 36 percent to 66 percent with smaller wineries most impacted. Projected losses increase as winery size decreases with wineries producing 1,000 to 5,000 cases expected to see lost revenue of 47.5 percent and wineries producing under 1,000 cases or less expected to lose 66 percent of revenue.

Individual US wineries will be impacted differently depending on their primary channels of distribution. The impacts also assume a 50 percent recovery of restaurant, tasting room and other on-premise wine sales within three months of the lifting of shutdowns. Finally, the author does not anticipate full revenue recovery until three to six months after a vaccine is widely available.

In another recent outlook, wine industry experts acknowledges that the economic fallout of the pandemic has impacted every corner of the wine industry from growers, sommeliers, importers, consumers and everyone in between.[5] All around world restaurants and bars have been forced to close, creating a ripple effect that has hit all the way back to wineries. This has resulted in massive layoffs in every aspect of the business, and has winemakers and their distributors sitting on a lot more inventory than expected. On the positive side, subscription services, retail shop demand, and supporters of drink local campaigns have provided some flow of business. For example, around the country liquor laws have been changed in response to social distancing measures to allow restaurants and bars to deliver wine and cocktails, and many retail shops have now offered local delivery.

A recent Nielson report for off-trade sales comparing the COVID-19 affected timeframe with the same period the previous year (the period starting 7 March and ending 18 April) found that total US off-trade alcohol sales were up 16 percent.[6] During lock-down off-premise sales of Spirits increased by 27.4 percent, while wine sales were up 14.1 percent and beer 4.6 percent.

A survey published on May 6, 2020 by Wine Intelligence found that after seeing a substantial increase in sales at the start of the pandemic, volumes of wine sold through the checkout and

[5] **https://www.alcoholprofessor.com/blog-posts/how-the-us-wine-industry-with-covid-19-fallout**

[6] **https://www.thedrinksbusiness.com/2020/05/usa-lockdown-alcohol-sales-the-latest-trends/**

online have come back to close to pre-pandemic levels.[7] The on-line channel has been a big winner of the lockdown, with younger, affluent and urban-dwelling wine drinkers leading the way. More generally, the evidence from this survey report is that the surge of wine purchased in March and early April has been consumed – through increased frequency of wine drinking generally, and by the invention of new wine drinking moments – rather than stored. As well as the usual with-food occasions, it appears that wine has become part of many of the new non-food occasions – for instance catching up with friends on line, pre-dinner drinks that start earlier, or even a virtual wine tasting.

Another behavior change that shines through in this report is the urge to buy local. Domestic wines are the biggest winners from lockdown in the US market, with both purchase frequency and trust levels falling for imports – especially wines from Europe. While the majority of respondents said the origin of wine, they bought during this period stayed the same, there was a notable shift in purchase preferences towards domestic wines and away from imports. Some 18% of respondents reported buying more wine from California and other US regions during this time, while 20% said they were buying less wine from France, Italy and Spain. Additionally, US wine drinkers increased their trust in California wines and conversely, lost trust most among old world wines, particularly those from Italy.

Finally, when it comes to the future, the US wine drinker is understandably quite cautious about their household finances. This can partially explain the growing volume of wine purchased was tempered by a small decline in the average price per bottle paid overall, according to the research. However, within this average were significant variations by consumer type. More involved and committed wine drinkers, who mainly spend between $15 and $20 per bottle normally, tended to spend a bit more than usual, while less frequent wine drinkers tended to spend a bit less.

Iowa Pandemic Scenario

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 wine 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 Wine Growers Association and the national media, the expectation is that small wineries that rely on generating significant income from hosting events will suffer the most from the pandemic.
- Second, wineries that sell wine on-line and through grocery and convenience stores will maintain the strongest position for generating revenue during the pandemic related shutdown period.

[7] **https://www.wineintelligence.com/downloads/; https://wineindustryadvisor.com/2020/05/05/us-drinkers-increased-wine-consumption-lockdown**

- Third, once wineries reopen, it will probably be at about 50 percent reduced capacity.
- There will be a sharp drop in special events like fairs, festivals, and concerts during spring and summer – many of which have already been cancelled due to concerns associated with large crowds and social distancing.
- It will likely be at least a year before wineries that close down will be able to reopen – and some may never reopen.

Our next step is to examine the above assumptions in the context of national forecasts of the impact of the pandemic on the wine industry, and apply this analysis to the Iowa wine industry.

In Chapter 3, we reported that 52 percent of Iowa wineries have either a restaurant or venue as part of their facilities. We assume these facilities will be operating at 50 percent capacity once restrictions are loosened. Added to this assumption, pre-COVID we could identify 31 Iowa wineries that are vulnerable due to having either zero production or sales in 2019. Based on this information we can reasonably predict that the number of Iowa wineries could fall by at least 31 in 2020, going from 117 to 85.

Using this same data and logic it is possible that production and sales of Iowa native wine could fall by some 25 percent to between 220,000 gallons and 250,000 gallons, depending on inventory levels. Alternatively, using forecasts from the Gomberg-Fredrikson Report suggests that through a combination of excess supply of grapes pushing the equilibrium price down combined with reduced overall demand for wine, Iowa wine sales could fall by 13 percent. Note that this last figure does not include other revenue sources, such as weddings, concerts, food, *etc*. A reduction in wine sales of 13 percent is approximately equal to $3 million in reduced revenue based on 2019 sales and price levels.

Looking past 2020, the rate of recovery and rebuilding of Iowa's wine 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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