THE ECONOMIC IMPACT OF OHIO WINE AND WINE GRAPES – 2016

A Frank, Rimerman + Co. LLP Report

August 2017

This study was commissioned by the

Ohio Grape Industries Committee

The Wine Business Center, 899 Adams St., Suite E St. Helena, California 94574 / (707) 963-9222 www.frankrimerman.com/industries/wine-industry-research.asp

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FULL ECONOMIC IMPACT OF OHIO WINE AND WINE GRAPES -- 2016

\$1.314 Billion

OHIO WINE AND WINE GRAPES	2016 ECONOMIC IMPACT
Full-time Equivalent Jobs	8,067
Wages Paid	\$264 million
Wine Produced (Gallons)	1,228,000
Retail Value of Ohio Wine Sold	\$61 million
Number of Wineries	265
Grape-Bearing Acres	1,500
Wine-Related Tourism Expenditures	\$321 million
Number of Wine-Related Tourists	1,377,000
Taxes Paid: Federal / State and Local	\$75 million / \$72 million

Table 1

Total Economic Impact of Wine and Vineyards in Ohio

Revenue:	2016
Winery Sales	\$43,756,000
Retail and Restaurant Sales of OH wine	\$12,245,000
Distributors Sales	\$5,097,000
Tourism	\$321,162,000
Wine Grape Sales	\$3,064,000
Federal Tax Revenues	\$74,770,000
State Tax Revenues	\$71,890,000
Vineyard Development (excluding vines)	\$875,000
Charitable Contributions	\$448,000
Advertising/Marketing	\$623,000
Winery Services	\$1,549,000
Wine Research/Education/Consulting	\$1,389,000
Winery-Related Events and Other Revenue	\$15,962,000
Indirect (IMPLAN)	\$277,783,000
Induced (IMPLAN)	\$219,463,000
Total Revenue	\$1,050,076,000

Wages:	2016
Winery Employees	\$17,177,000
Vineyard Employees	\$7,894,000
Tourism	\$68,335,000
Vineyard Development and Materials - Labor	\$131,000
Distributors Employees	\$2,348,000
Retail/Liquor Stores - Wine Specific	\$555,000
Restaurant Sales of OH wine	\$2,601,000
Winery Services	\$390,000
Wine Research/Education/Consulting	\$418,000
Indirect (IMPLAN)	\$95,118,000
Induced (IMPLAN)	\$68,792,000
Total Wages	\$263,759,000

Sources: Frank, Rimerman +Co., TourismOhio, IMPLAN, Ohio Grape Industries Committee (OGIC), Bureau of Labor Statistics (BLS), various Ohio wineries surveyed.

Total

\$1,313,835,000

EXECUTIVE SUMMARY

IMPACT OF WINE AND VINEYARDS ON THE OHIO ECONOMY

The Ohio wine industry continues to grow as the number of wineries increased since 2012. The number of wineries in the state of Ohio grew from 175 in 2012 to 265 in 2016, an increase of 51%, while the gallons produced remained flat at 1.23 million gallons in both 2012 and 2016 (or 516,000 cases). The majority of the industry's growth is coming from the addition of small wineries – wineries producing less than 5,000 gallons per year. According to the Alcohol Tax and Trade Bureau (TTB), Ohio was the sixth largest wine producer in the United States in 2016.

The wine and grape industry in Ohio contributed greatly to the economic strength of the state in 2016. Ohio's wine, grape and related industries had a total economic value to the state of \$1.31 billion in 2016. The prior wine and grape industry economic impact study in 2012 reported total economic impact of \$786 million. It was determined that the prior reports in 2012 and 2008 both underestimated the average amount spent per tourist. As a result of correcting this for 2016, there is a substantial increase in tourism revenue and jobs. The increase in tourism jobs produced an additional increase in indirect and induced revenue, wages and jobs, making it difficult to make comparisons with the prior reports. As noted above, there was a significant increase in the number of wineries since 2012. As the number of Ohio wineries increases, so will the number of tourists visiting them. We estimate that roughly 1.38 million people visited Ohio wineries in 2016, up 16% from approximately 1.19 million winery visitors in 2012. Wine, grapes and related industries account for 8,067 jobs in Ohio with an associated payroll of roughly \$264 million. As shown below, most of these jobs were in the actual wineries and vineyards, as well as the tourism industry.

Table 2
Total Ohio Employment: Wine, Grape and Related Industries

Jobs:	2016
Distributors	43
Research/Education/Consulting	7
Restaurants	168
Retail/Liquor Stores - Wine Specific	35
Vineyard	383
Vineyard Materials	4
Winery	1,045
Winery Services	8
Winery Tourism	3,189
Indirect (IMPLAN)	1,607
Induced (IMPLAN)	1,578
Total Employment	8,067

Sources: Frank, Rimerman +Co., TourismOhio, IMPLAN, Ohio Grape Industries Committee (OGIC), Bureau of Labor Statistics (BLS), various Ohio wineries surveyed.

TOTAL TAXES COLLECTED

The wine and wine grape industry generates significant tax dollars, benefiting federal, state and local governments. Tax dollars are raised through sales taxes, excise taxes, income taxes, estate and gift taxes, payroll taxes, property taxes and other business taxes and fees. Ohio's wine, wine grape and allied industries generated \$75 million in federal taxes and \$72 million in state and local taxes in 2016, including more than \$6 million in total excise taxes.

Table 3
Estimated Tax Revenues

<u>Type of Tax</u>	<u>Total</u>
Federal Tax Revenues	
	A= 004 000
Excise	\$5,894,000
Payroll	\$31,403,000
Income	\$34,985,000
Other (corporate profits, etc.)	\$2,488,000
Total Federal Tax Revenues	\$74,770,000
State Tax Revenues	
Excise	\$786,000
Sales	\$34,259,000
Payroll	\$759,000
Income	\$7,116,000
Property	\$23,254,000
Other (excise, dividends, licenses, fines, etc.)	\$5,715,000
Total State Tax Revenues	\$71,890,000
Total Tax Revenues	\$146,660,000
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TOURISM

Tourism continues to be a material factor in the Ohio wine and wine grape industry's overall impact on the broader state economy. Our survey of Ohio wineries estimates that nearly 1.38 million tourists visited Ohio wineries in 2016. Supporting these winery visitors is a diverse labor force of approximately 3,189 employees with total wages of \$68.3 million. The continued increase of tourist visits over the past several years can be attributed to the increase in the number of Ohio wineries and continued improvement in wine quality, providing more destinations and opportunities for visitors to experience Ohio wine country.

It was determined that in prior economic impact reports for 2012 and 2008, the volume of visitors was overstated and the average spend per visitor was significantly understated. The estimated winery visitor count from the prior report was updated in the summary table on page two to be consistent with the current report's methodology. Other figures from the prior report were not updated.

Wine-related events and facilities at wineries continue to grow at a significant rate. By our estimation, based on direct feedback from the wineries we surveyed, there was over \$15.9 million in revenue generated from these wine-related events and facilities.

WINE PRODUCTION AND SALES

Growing grapes and making wine is a long-term commitment to a community, both financially and physically. New vineyard plantings require three to five years before yielding a full crop, with another one to three years of aging for wine to be ready for sale. Unlike many industries, once vineyards and wineries are established they are effectively rooted and tied in place — an Ohio vineyard cannot simply be relocated to another region or outsourced to another country. Wine and grapes are inextricably tied to the soil from which they are grown. Moreover, wine and their products and allied industries diversify local economies and create employment and new market opportunities.

In 2016, there were 265 wineries in Ohio producing wine, up 51% from 175 wineries in 2012. Based on information we collected from the Ohio Grape Industries Committee and the Ohio Department of Taxation, total wine produced in Ohio in 2016 was 1,227,000 gallons, or approximately 516,000 nine-liter equivalent cases. Several of the state's wineries made wine with grapes sourced from Ohio vineyards, representing approximately two thirds of all wine produced in Ohio being made from Ohio grapes. However, a few of the larger producers continue to rely on bulk wine and grapes sourced from outside of Ohio.

Overall, 90% of the state's wineries had sales or production of less than 5,000 gallons annually (roughly 2,100 cases). Additionally, less than ten wineries had wine production of between 5,000 and 10,000 gallons in 2016. Less than 5% of the remaining wineries had production in excess of 10,000 gallons in 2016, or sales in excess of 5,000 cases.

Table 4.1
Trend of Growth in Ohio Wineries

Year	# of Wineries
2016	265
2012	175
2008	124
2004	109

Source: Wine Institute, OGIC, TTB

The state's overall wine sales are not concentrated within a few large wineries; rather the majority of the state consists of small wineries with production of less than 5,000 cases. There are only a handful of wineries that sell wine through the three-tier system as the majority of the wineries sell their wine direct-to-consumer through their tasting room and various wine events and festivals. However, a few of the larger producers sell a significant portion of their wine through the wholesale channel or directly to restaurants, which skews the state's overall distribution figures. Overall however, winery sales are roughly 60%/40% split between direct to consumer and through either distributors or directly to restaurants. As a result, retail and restaurant sales of wine decreased 10% from 2012 to 2016, down from \$13.5 million to \$12.2 million. This is primarily a result of a slight decrease in overall volume from some of the larger wineries.

The retail value of Ohio wine sold in 2016 is estimated at \$61 million, with actual sales generated by the wineries themselves totaling \$43.8 million. In additional to wholesale channel sales, this total includes sales to consumers in the winery tasting rooms, winery mailing lists and e-commerce/Internet sales. Excluded from these figures was the additional \$16 million generated in non-wine revenue associated with wineries hosting special events/weddings and selling various merchandise on-site.

Based on our research and interviews with winery owners, wineries in Ohio provided employment for 1,045 full-time equivalent jobs in 2016, an increase from 924 full-time employees in 2012, with an overall payroll totaling approximately \$17.2 million.

Wineries employ full and part-time workers for bottling, storage, maintenance and winemaking needs in addition to the traditional hospitality (tasting room), finance, sales and marketing functions. Many wineries also employ seasonal workers, particularly during harvest season.

In 2016, Ohio was the sixth largest producer in the United States, according to data provided by the TTB (Table 4.2). That being said, the number of new wineries producing wine in Ohio increased dramatically in the last four years (a 51% increase). Ohio's increased number of wineries can be partially attributed to increased tourist visitors throughout the state. In order to continue growing production and attracting interest from visitors and wine consumers in general, the state's wineries need to continue focusing on improving their winemaking and vineyard practices to keep pace with the overall wine industry at large.

Table 4.2

Top States' Annual Gallons Produced in 2016

		Total Produced	
Rank	State	(Gallons)	% of Total
1	California	680,272,512	84.35%
2	Washington	40,747,190	5.05%
3	Ney York	27,696,308	3.43%
4	Pennsylvania	12,405,181	1.54%
5	Oregon	11,822,972	1.47%
6	Ohio	5,938,738	0.74%
7	Michigan	2,576,238	0.32%
8	Kentucky	2,176,059	0.27%
9	Vermont	2,172,526	0.27%
10	Virginia	2,157,395	0.27%
	Others	18,512,772	2.30%
	Total U.S.	806,477,891	100.00%

GRAPE PRODUCTION

According to the National Agricultural Statistics Service ("NASS"), there were approximately 1,500 grape-bearing acres in Ohio in 2016, down from 1,900 acres in 2012. While vineyard acreage in Ohio has decreased over the past several years, yields have remained relatively consistent. On average, the wineries we spoke with had yields of three tons per acre in 2016 and 2012, but ranged anywhere from one to five. This is largely due to occasionally unfavorable weather conditions such as late spring frost and mid-season hail storms, herbicide drift and, to a lesser extent, vine loss due to insects, black rot and phylloxera.

As shown below, Ohio is in the top ten in the United States in terms of both grape production and acreage; however the state lags significantly behind the larger wine-producing states of California, Washington, New York, Oregon, Michigan and Pennsylvania.

Table 5
United States Grape Production, 2016

Rank	State	Total Production (Tons)	Bearing Acreage (all types of grapes)
1	California	6,726,000	841,000
2	Washington	488,000	73,000
3	New York	171,000	37,000
4	Michigan	93,400	12,600
5	Pennsylvania	85,800	13,000
6	Oregon	67,000	23,000
7	Texas	13,600	4,500
8	Virginia	8,500	3,400
9	Ohio	5,500	1,500
10	Missouri	5,330	1,700
	Others	4,900	2,300
	Total U.S.	7,669,030	1,013,000

Source: USDA Non-citrus Fruits and Nuts 2016 Summary

Wineries in the state of Ohio rely heavily on wine grapes grown out of state, which generally adds increased costs. By continuing to increase the grape quality and amount of Ohio acreage available for grape production, the Ohio wine industry can rely less on grapes produced outside the state while in turn building more credibility and a stronger reputation for wine quality as well as potentially increasing profitability.

VINEYARD EMPLOYMENT

Larger Ohio wineries reported utilizing both full-time and seasonal vineyard employees. Often grape production uses seasonal labor for harvests and vineyard development and full-time positions for maintenance of currently-bearing acres and development of new vineyards yet to bear fruit, as well as both full and part-time staff for finance, sales and other business management functions.

However, most grape growers in Ohio manage smaller vineyards and can do so without outside labor. As mentioned above, our research indicates the median vineyard size was approximately six acres for all vineyards, including those owned and operated by both wineries and independent grape growers. Based on surveys with wineries and vineyard owners, as confirmed with information collected by the USDA-NASS and the Bureau of Labor Statistics, approximately 383 full-time equivalent workers were employed in the vineyards in both a development and ongoing vineyard maintenance or development capacity for a total payroll of approximately \$7.9 million in 2016.

COMMUNITY SUPPORT

Based on our estimates, wineries and growers throughout the state of Ohio have donated approximately \$448,000 to charities in 2016. The amount of charitable contributions is likely underestimated as many wineries do not track in-kind contributions, which can be substantial. However, the majority of the wineries we spoke with described their charitable contributions as usually being tours and the like.

WINEMAKING EQUIPMENT, SUPPLIES AND SERVICES

The number of in-state suppliers or distributors of winemaking equipment, supplies and services is relatively small. Only a handful of small businesses exist in Ohio that supply the wine and wine grape industry as a portion of their overall business. They primarily include bottle suppliers, farming chemical providers and label producers. As the Ohio wine industry continues to grow, so will the number of ancillary businesses that supply the industry.

Based on our research and discussions with wineries and trade professionals, we estimate there were four full-time employees working at wine and grape industry-related suppliers. Total wages were \$390,000 while total revenue was \$1.5 million.

EDUCATION, CONSULTING AND WINE INDUSTRY RESEARCH

Approximately seven people were employed on a full-time basis in Ohio in wine-related education, consulting and research at various universities and trade organizations, with a total payroll of roughly \$418,000. Total funding/revenue was \$1.4 million in 2016.

SUPPORT BY STATE AND REGIONAL ORGANIZATIONS

State and regional organization support is critical to the success of the renewed industry. Ohio's state, regional and private organizations are becoming more effective and organized at supporting and promoting the local wine industry. Two of the most prominent and widely recognized organizations are the Ohio Grape Industries Committee and the Ohio Wine Producers Association. Wineries we spoke with also mentioned they belong to other trade organizations, albeit to a less degree; examples included Wine Growers of Ohio, Central Ohio Wine Country and Wine America. In general wineries we surveyed belonged to an average of one to two Ohio trade organizations.

Additionally, most of the wineries we surveyed participated in at least one wine festival in Ohio annually. On average, wineries get involved in roughly three Ohio wine festivals each year, with some wineries participating in over ten annually. There were several festivals that wineries we spoke with participated in throughout the year in all areas of the state; however, below are the most frequently mentioned festivals:

- North Market Food & Wine Festival
- Glass City Wine Festival
- Vintage Ohio
- Giant Eagle Grapes & Ale
- Waterfront Wine Festival
- Grove City Wine & Arts Festival

In order for the Ohio wine industry to continue growing, it is critical wineries and all associated organization and vendors receive significant support from the state and local governments, particularly with funding dollars that will enable better marketing of the industry as a whole. In addition to improving winemaking and vineyard practices, it is this kind of financial support that will help the industry's growth better reflect that of many of its neighboring states.

A CONSERVATIVE MEASURE OF VALUE

Statistics alone do not adequately measure the intangible value the wine industry brings in terms of overall enhanced quality of life, limitation of urban sprawl and greater visibility for the state of Ohio worldwide. Accordingly, the figures provided in this report should be viewed as a conservative baseline measure of the economic impact, as the true impact of the Ohio wine industry, including intangible benefits is much greater. That measure of economic impact is approximately \$1.31 billion within the state of Ohio, for an industry that is a unique partnership of nature, entrepreneurship, artistry and technology.

Ohio wine and wine grape producers face sizable challenges to their continued growth and success. Working to support the Ohio wine industry and to ensure its long-term success will protect the significant benefits the industry provides to the Ohio economy.

METHODOLOGY

DATA COLLECTION

Data for this study was collected from a variety of public sources supplemented by primary research with wineries, suppliers, growers and other economic entities and supported by a variety of studies undertaken by industry and professional organizations. For several data items the numbers provided are only partial, given the limited availability of information, and therefore are considered conservative. For this analysis, we relied upon 2015 IMPLAN figures for Ohio.

DIRECT, INDIRECT AND INDUCED EFFECTS (IMPLAN)²

All economic activities have "ripple" effects: employment of one person creates economic activity for others, whether the salesman who sells the employee a car or the restaurant where she eats lunch. Economic impact studies endeavor to measure those "ripples" as well as the direct activity, to help assess the impact of the potential gain or loss of an industry.

Economic impact studies estimate the impact of an industry in a defined geographic region by identifying and measuring specific concrete and economic events, such as the number of jobs, the wages, taxes and output generated by each job.

IMPLAN¹ is the acronym for "**IM**pact analysis for **PLAN**ing." IMPLAN is a well established and widely used economic model that uses input-output analyses and tables for over 500 industries to estimate these regional and industry-specific economic impacts of a specific industry.

The IMPLAN model and methodology classifies these effects into three categories, Direct Effects, Indirect Effects and Induced Effects.

Direct Effects are economic changes in industries *directly* associated with the product's final demand. Thus, direct effects consider the direct employment and spending of wineries, vineyards, distributors and immediately allied industries.

Indirect effects are economic changes – income created through job creation in industries that supply goods and services to the directly affected industries noted above. For example, the purchases of electricity and gasoline by wineries and of cash registers purchased for a tasting room.

on IMPLAN, go to www.implan.com.

¹ IMPLAN is the standard economic model for economic impact studies, developed by the University of Minnesota and the US Forestry Service in the 1980s and currently used by over 1,500 organizations, including most federal, state and local organizations. For more information

ECONOMIC IMPACT OF OHIO WINE AND WINE GRAPES

Induced effects are the effects of these new workers spending their new incomes, creating a still further flow of income in their communities and a flow of new jobs and services. Examples are spending in grocery and retail stores, medical offices, insurance companies and other non-wine and grape related industries.

Beginning in late 2009, the Minnesota IMPLAN Group released version 3.0 of its flagship IMPLAN software product, which makes it possible to include Trade Flows in an impact analysis. We used this latest version with its increased functionality to produce this report.

ABOUT FRANK, RIMERMAN + CO. LLP

Frank, Rimerman + Co. LLP, founded in 1949, is the largest, locally-owned provider of accounting and consulting services in California. With offices in San Jose, Palo Alto, San Francisco and St. Helena, California, and over 250 professionals, Frank, Rimerman + Co. LLP offers strategic business and information consulting services, tax consulting and planning, audit and financial reporting, accounting services, litigation and valuation services.

Frank, Rimerman + Co. LLP is the leading research source on the U.S. wine industry. We continue to strive to raise the bar on the quality of information and analysis available to the wine industry.

Frank, Rimerman + Co. LLP produces original research on the business of wine and wine market trends, publishes a number of industry studies and provides business advisory services and conducts custom business research for individual companies and investors.

Frank, Rimerman + Co. LLP has a dedicated Wine Business Services practice which lists many wineries, vineyards, industry suppliers and industry trade organizations as clients. Services provided include:

- Economic impact studies
- Custom industry research
- Financial benchmarking
- Financial audits, reviews and compilations
- Income tax consulting and compliance
- Business valuation
- Financial modeling and business plan development
- Accounting services
- Enterprise sustainability
- Transaction readiness
- Business planning and general winery consulting

FRANK, RIMERMAN + CO. LLP PUBLICATIONS

Grape Trends

By combining the annual crush and acreage reports into one easy-to-use quick reference guide, Grape Trends provides, in one source, all the information needed to make informed decisions about California's grape supply for production planning. Provided in electronic form, Grape Trends includes a complete summary of current, past (since 1997) and projected tons, prices, and bearing acres for all of California's major grape growing regions and counties for all varietals recorded, including: Chardonnay, Sauvignon Blanc, Cabernet Sauvignon, Merlot, Syrah, Zinfandel, and Pinot Noir.

Grape Price Analysis Tool

The Grape Price Analysis Tool enables users to take a deep dive into the California Grape Crush Report and analyze estimated bottle prices in relation to tonnage prices. The tool makes the data from the Crush Report easy to access and provides actionable results to help determine tonnage prices based on an estimated finished bottle price.

Economic Impact Reports

Frank, Rimerman + Co. LLP completed the first study of the Impact of Wine, Grapes and Grape Products on the American Economy for Wine America, the Wine Institute, Winegrape Growers of America and the National Grape and Wine Initiative as well as the first economic impact study of the Wine and Grape Industry in Canada. Additionally, Frank, Rimerman + Co. LLP produced economic impact studies for the following US states: Arkansas, California, Illinois, Iowa, Michigan, Missouri, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Virginia and Washington.

ECONOMIC IMPACT OF OHIO WINE AND WINE GRAPES

Recent Economic Impact Studies and Updates published by Frank, Rimerman + Co. LLP include the following:

- Economic Impact of Wine and Grapes in Canada 2016
- Economic Impact of Texas Wine and Vineyards 2015
- Economic Impact of Virginia Wine and Vineyards 2015
- Economic Impact of Kentucky Wine and Wine Grapes 2014
- Economic Impact of North Carolina Wine and Wine Grapes 2013
- Economic Impact of Missouri Wine and Wine Grapes 2013
- Economic Impact of Texas Wine and Vineyards 2013
- Economic Impact of Wine and Wine Grapes in Iowa 2012
- Economic Impact of Wine and Wine Grapes in Ohio 2012
- Economic Impact of the Wine and Grape Industry in Canada 2011
- Economic Impact of Wine and Grapes in New Jersey 2011
- Economic Impact of Wine and Wine Grapes in Illinois 2011
- Economic Impact of Wine and Grapes in Canada 2011
- Economic Impact of Texas Wine and Vineyards 2011
- Economic Impact of Pennsylvania Wine, Grapes and Juice 2011