

MISSOURI WINESTM

THE ECONOMIC IMPACT OF MISSOURI WINE AND WINE GRAPES – 2013

A Frank, Rimerman + Co. LLP Report

PUBLISHED APRIL 2015

This study was commissioned by

MISSOURI WINE AND GRAPE BOARD

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FULL ECONOMIC IMPACT OF MISSOURI WINE AND WINE GRAPES -- 2013

\$1.76 Billion Annually

MISSOURI WINE AND WINE GRAPES	2013 ECONOMIC IMPACT
Full-time Equivalent Jobs	14,959
Wages Paid	\$454 million
Wine Produced (Gallons)	1.25 million
Retail Value of Missouri Wine Sold	\$52 million
Number of Wineries	128
Grape-Bearing Acres	1,700
Number of Grape Growers	425
Wine-Related Tourism Expenditures	\$220 million
Number of Wine-Related Tourists	950,000
Taxes Paid: Federal / State and Local	\$120 million / \$96 million

Table 1 – Total Economic Impact of Wine and Vineyards in Missouri

Revenue	2013
Winery Sales	\$34,351,000
Retail and Restaurant Sales of MO wine	\$13,210,600
Distributors Sales	\$4,582,400
Non-Wine Revenue (Weddings, Events, etc.)	\$4,321,700
Tourism	\$220,000,000
Wine Grape Sales	\$4,345,000
Federal Tax Revenue	\$119,611,000
State Tax Revenue	\$96,306,000
Vineyard Development (excluding vines)	\$1,433,300
Charitable Contributions	\$521,400
Allied Industries	\$39,380,200
Wine Research/Education/Consulting	\$3,840,400
Indirect (IMPLAN)	\$425,437,000
Induced (IMPLAN)	\$339,386,700
Total Revenue	\$1,306,726,700

Wages	2013
Winery Employees	\$11,631,400
Vineyard Employees	\$7,500,000
Tourism	\$154,111,200
Vineyard Development and Materials - Labor	\$215,000
Distributors Employees	\$2,092,300
Retail/Liquor Stores - Wine Specific	\$236,800
Restaurant Sales of MO Wine	\$8,087,600
Allied Industries	\$15,441,500
Wine Research/Education/Consulting	\$1,200,700
Indirect (IMPLAN)	\$143,065,900
Induced (IMPLAN)	\$110,915,300
Total Wages	\$454,497,800
Total	\$1,761,224,400

EXECUTIVE SUMMARY

IMPACT OF WINE AND VINEYARDS ON THE MISSOURI ECONOMY

The Missouri wine industry continues to grow as the number of wineries and cases produced both grew since 2009. The number of wineries in the state of Missouri grew from 97 in 2009 to 128 in 2013, an increase of 32%, while the cases produced increased 7% from 492,000 cases to 526,000 cases in 2013. The majority of the industry's growth is coming from increased tourism and increased consumer demand for wine. According to the Alcohol Tax and Trade Bureau (TTB), Missouri was the 14th largest wine producer in the United States in 2013.

The wine and grape industry in Missouri contributed greatly to the economic strength of the state in 2013. Missouri's wine, grape and related industries had a total economic value to the state of \$1.76 billion in 2013. The continued increase in the wine industry's economic impact to the state of Missouri is based on increased tourism revenue, wages and jobs while production and the number of wineries in Missouri also are on the rise. We estimate that roughly 950,000 people visited Missouri wineries in 2013. Wine, grapes and related industries account for 14,959 jobs in Missouri with an associated payroll of roughly \$454 million. As shown below, most of these jobs were in the tourism industry.

Table 2 – Total Missouri Wine/Grape Industry Employment

Employment	2013
Winery	735
Vineyard	500
Distributors	36
Tourism	7,128
Vineyard Materials	6
Restaurants	558
Retail/Liquor Stores - Wine Specific	14
Allied Industries Glass, Closures, Chemicals	475
Research/Education/Consulting	23
Indirect (IMPLAN)	2,762
Induced (IMPLAN)	2,721
Total Employment	14,959

Sources: Frank, Rimerman + Co., IMPLAN, Missouri State, University of Missouri, MWGB, Bureau of Labor Statistics and various Missouri wineries, consultants and suppliers.

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. Missouri's wine, wine grape and allied industries generate \$120 million in federal taxes and \$96 million in state and local taxes in 2013, including almost \$9 million in total excise taxes. It is important to note that Missouri has the one of lowest wine excise tax rates in the country.

Table 3 – Estimated Tax Revenues

<u>Type of Tax</u>	<u>Total</u>
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Federal Tax Revenues	A 0.44 = 000
Excise	\$8,145,000
Payroll	\$58,979,000
Income	\$31,285,000
Other (corporate profits, etc.)	\$21,202,000
Total Federal Tax Revenues	\$119,611,000
State Tax Revenues	
Excise	\$525,000
Sales	\$43,816,000
Payroll	\$9,636,000
Property	\$32,127,000
Other (dividends, licenses, fines, fees, etc.)	\$10,201,000
Total State Tax Revenues	\$96,306,000
Total Tax Revenues	\$215,917,000

TOURISM

Tourism continues to be a material factor in the Missouri wine and wine grape industry's overall impact on the broader state economy. Our survey of Missouri wineries estimates that approximately 950,000 tourists visited Missouri wineries in 2013. Supporting these winery visitors is a diverse labor force of approximately 7,128 employees with total wages of \$154 million. The continued increase of tourist visits over the past several years can be attributed to the increase in the number of Missouri wineries and continued improvement in wine quality, providing more destinations and opportunities for visitors to experience Missouri wine country. Additionally, the continued improvement in the broader U.S. and local Missouri economies also contributed to the impressive tourism impact.

Wine tasting tours are being widely promoted with positive sales results. In order for the industry to continue growing and attracting new visitors, wineries not only need to continue focusing on improving wine quality, but consider expanding into more wine-related events like private parties, weddings, and festivals held on winery properties. Some existing wineries have expanded their facilities to incorporate these additional revenue streams, resulting in increased winery revenue, employment and support services. Some wineries we surveyed in Missouri incorporated these new functions with traditional facilities to take full advantage of these profitable ancillary activities. By our estimation, based on direct feedback from the wineries we surveyed, there was over \$4 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 — a Missouri 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 2013, there were 128 wineries in Missouri producing wine, up 32% from 97 wineries in 2009. Based on information from the TTB, total wine produced in Missouri in 2013 was 1.25 million gallons, or approximately 526,000 nine-liter equivalent cases. The majority of the state's wineries made wine with grapes sourced from Missouri vineyards, resulting in more than 75% of all wine produced in Missouri being made from Missouri grapes. However, there are a few wineries that also relied on fruit, juice or concentrates sourced from outside of Missouri, which skewed the data somewhat in terms of overall wine produced with non-Missouri fruit by volume.

Overall, 90% of the state's wineries had production of less than 5,000 gallons annually (roughly 2,100 cases). Similar to the distribution of winery production, less than 5% of the state's wineries had sales exceeding \$1.0 million in 2013. The overwhelming majority of the state's wineries had sales of less than \$0.5 million in 2013.

Table 4 - Trend of Growth in Missouri Wineries

Year	# of Wineries
2013	128
2009	97
2007	72
2005	50

Source: Wine Institute, TTB

While the majority of the state consists of small wineries with production of less than 5,000 gallons, the state's overall wine sales are concentrated within a few larger winery producers. Similarly, there are only a few wineries that sell wine through the three-tier system, typically the larger ones. The vast majority of Missouri wineries by number and by sales, however, sell direct to consumers through winery tasting rooms or direct to retail and restaurants, allowing them to obtain higher margins on their product. Based on our research, we estimate roughly two-thirds of Missouri wine was sold direct to consumers in 2013.

The retail value of Missouri wine sold in 2013 is estimated at \$52 million, with actual sales generated by the wineries themselves totaling \$34 million. This includes sales to consumers in the winery tasting rooms, winery mailing lists and e-commerce/Internet sales. Excluded from these figures was the additional \$4 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 Missouri provided employment for 735 full-time equivalent jobs in 2013 with an overall payroll totaling approximately \$12 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.

As mentioned above, over 90% of Missouri's wineries are considered small producers, producing less than 5,000 gallons (2,100 cases). Based on the data we received directly from the wineries and extrapolated for data we did not directly receive, approximately 20-25% of the wine produced in Missouri was made from grapes or fruit grown outside of Missouri in 2013. The growth of wineries in the state appears to be outpacing the grapes available to wineries in recent years. However, many wineries produce and sell wines made from fruit other than grapes to accommodate consumers' increased demand for Missouri wine.

The continual growth in number of wineries and planted acreage that only moderately increased over the past several years has led many wineries to look elsewhere for bulk wine, grapes or fruit juice/concentrate to meet its production needs. The industry needs to quickly consider how to alleviate what appears to potentially become a larger problem down the road if the industry wants to have the potential to grow and develop into a profitable business for local wineries, as opposed to paying higher prices for grape/wine sourced outside of the state.

In 2013, Missouri was the 14th largest producer in the United States, according to data provided by the TTB. That being said, the number of new wineries producing wine in Missouri increased dramatically in the last eight years since 2005 (growing 156%). Missouri'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 5 - Top States' Annual Gallons Produced in 2013

		Gallons	% of
Rank	State	Produced	Total
1	California	728,939,759	87.18%
2	Washington	34,144,441	4.08%
3	New York	27,150,759	3.25%
4	Oregon	7,948,408	0.95%
5	Pennsylvania	7,948,408	0.95%
6	Vermont	4,315,420	0.52%
7	Ohio	3,277,838	0.39%
8	Kentucky	2,241,527	0.27%
9	Michigan	2,180,359	0.26%
10	Florida	2,026,230	0.24%
11	North Carolina	1,351,975	0.16%
12	New Jersey	1,329,932	0.16%
13	Virginia	1,261,104	0.15%
14	Missouri	1,250,654	0.15%
	All Others	10,739,679	1.28%
	Total U.S.	836,106,493	100.00%

GRAPE PRODUCTION

According to the National Agricultural Statistics Service ("NASS"), there were approximately 1,700 grape-bearing acres in Missouri in 2013, 500 acres more than in 2005. Additionally, we estimate that there were approximately 425 grapegrowers in Missouri in 2013. While vineyard acreage in Missouri slightly increased over the past several years, yields have also varied. On average, the wineries we spoke with had yields of three to four tons per acre in 2013, but ranged anywhere from half a ton to six tons per acre. This is largely due to occasionally unfavorable weather conditions such as late spring frost and midseason hail storms, harmful herbicide drift from neighboring fields and, to a lesser extent, vine loss due to insects, black rot and phylloxera, among others.

Given the harsh climate in this part of the country, low yields are not entirely uncommon; however, if Missouri is to gain traction and continue producing enough wine in state to meet consumer demand, the industry will need to improve yields going forward, if possible, and also continue increasing the available grape-bearing acreage. As shown below, Missouri is in the top ten in the United States in terms of both grape production and acreage.

The majority of the wineries we spoke with had vineyards of their own from which they source fruit. The average vineyard size based on surveys we received from Missouri wineries was 30 acres, although the median was closer to seven acres since a few wineries had larger vineyards that skewed the overall data. Most of these vineyards were located on-site, at the winery's estate property. A few wineries we surveyed also indicated that they sell grapes, other fruit and/or juice to other wineries as well. Every one of them sold grapes and/or bulk wine to other wineries in Missouri, although only a few also indicated they sold to wineries out of state as well.

Table 6 – United States Grape Production, 2013

Dank	State	2013 Bearing Acreage	2013 Total Production
Rank	State	(all types of grapes)	(Tons)
1	California	820,000	7,717,000
2	Washington	69,000	390,000
3	New York	37,000	208,000
4	Pennsylvania	13,000	111,000
5	Michigan	14,700	94,000
6	Oregon	18,500	49,000
7	Virginia	3,200	6,600
8	Ohio	1,900	6,490
9	Missouri	1,700	6,040
10	Texas	3,500	5,800
	Others	4,620	11,600
	Total U.S.	987,120	8,605,530

VINEYARD EMPLOYMENT

Larger Missouri 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 Missouri manage smaller vineyards and can do so without outside labor. As mentioned above, our research indicates the median vineyard size was approximately seven 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 500 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 \$7.5 million in 2013.

COMMUNITY SUPPORT

Based on our estimates, wineries and growers throughout the state of Missouri have donated approximately \$521,000 to charities in 2013 (1% of total winery sales), including gifts of wine and gift certificates. 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 in-kind donations of wine, tasting/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 Missouri 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 Missouri wine industry continues to grow, so will the number of ancillary businesses that supply the industry. However, the state is also home to a number of American oak producers, supplying a significant amount of American oak barrels to wineries all over the world. Our estimates of the total allied industry revenue, jobs and compensation include a sizeable contribution from these cooperages.

Based on our research and discussions with wineries and trade professionals, we estimate there were 475 full-time employees working at wine and grape industry-related suppliers. Total wages were \$15.4 million while total revenue was \$39.4 million.

EDUCATION, CONSULTING AND WINE INDUSTRY RESEARCH

Approximately 23 people were employed on a full-time basis in Missouri in winerelated education, consulting and research capacity at various universities and trade organizations, with a total payroll of roughly \$1.2 million. Total funding/revenue was \$3.8 million in 2013.

SUPPORT BY STATE AND REGIONAL ORGANIZATIONS

State and regional organization support is critical to the success of the renewed industry. Missouri's state, regional and private organizations are becoming more effective and organized at supporting and promoting the local wine industry. The Missouri Wine and Grape Board in particular significantly helped support and drive industry growth for Missouri's wine and grape organizations. In order for the Missouri wine industry to continue growing, it is critical wineries and all associated organizations and vendors receive significant financial 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 Missouri 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 Missouri wine industry, including intangible benefits is much greater. That measure of economic impact is approximately \$1.76 billion within the state of Missouri, for an industry that is a unique partnership of nature, entrepreneurship, artistry and technology.

Missouri wine and wine grape producers face sizable challenges to their continued growth and success. Working to support the Missouri wine industry and to ensure its long-term success will protect the significant benefits the industry provides to the Missouri 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 2013 IMPLAN figures for Missouri.

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.

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.

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, New York, New York and over 300 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.

Recent Economic Impact Studies and Updates published by Frank, Rimerman + Co. LLP include the following, all available for purchase from Frank, Rimerman + Co. LLP:

- Economic Impact of Wine and Wine Grapes in Texas 2013
- Economic Impact of Wine and Wine Grapes in Iowa 2012
- Economic Impact of Wine and Wine Grapes in Ohio 2012
- Economic Impact of Wine and Wine Grapes in Illinois 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 Grapes in Canada 2011
- Economic Impact of Texas Wine and Vineyards 2011
- Economic Impact of Pennsylvania Wine, Grapes and Juice 2011
- Economic Impact of Arkansas Wine and Vineyards 2010
- Economic Impact of Oklahoma Wine and Vineyards 2010
- Economic Impact of Virginia Wine and Vineyards 2010
- Economic Impact of Texas Wine and Vineyards 2009
- Economic Impact of Wine and Wine Grapes in North Carolina 2009
- Economic Impact of Wine and Wine Grapes in Iowa 2008
- Economic Impact of Wine and Wine Grapes in Ohio 2008
- Economic Impact of Wine and Wine Grapes in Illinois 2007
- Economic Impact of Pennsylvania Wine and Grapes 2007
- Economic Impact of Wine and Grapes on the State of Texas 2007
- Economic Impact of Wine and Grapes in Missouri 2007
- Economic Impact of Wine and Wine grapes in Tennessee 2007
- Impact of Wine, Grapes and Grape Products on the American Economy 2007
- Economic Impact of California Wine 2006
- Economic Impact of Washington Grapes and Wine 2006
- Economic Impact of Wine and Wine Grapes in North Carolina 2005
- Economic Impact of Wine and Wine Grapes in Texas 2005
- Economic Impact of Michigan Grapes, Grape Juice and Wine 2005
- Economic Impact of New York Grapes, Grape Juice and Wine 2005