



The Economic Impact of the Wine and Wine Grape Industries on the Virginia Economy

2019 Summary Report

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Executive Summary

The sum of all economic activity in Virginia related directly or indirectly to wine production, sales and wine grape farming is estimated to be approximately \$1.73 billion in 2019 as compared to 2015 when the sum was \$1.37 billion (+26.5 percent). In 2019, estimated wine-related and induced jobs in Virginia totaled 10,420; related wages topped \$398 million.

VIRGINIA WINE GRAPES AND WINE INDUSTRIES

2019 ECONOMIC IMPACT
\$ 1,728,835,900
+26.5% Since 2015

Summary Categories	2019	2015
Full-time Equivalent Jobs	10,420	8,218
Wages Paid	\$398,789,900	\$291,000,000
Virginia Wine Sold (9L Equivalents)	604,376	515,732
Retail Value of Virginia Wine Sold	\$146,415,200	\$129,340,000
Vineyard Revenue	\$17,788,800	\$17,940,000
Number of Wineries	357	261
Number of Grape Growers	349	338
Grape-Bearing Acres (2020)*	3,809	3,300
Wine-Related Tourism Revenue	\$246,706,200	\$187,747,000
Number of Wine-Related Tourists	2,640,000	2,249,000
Taxes Paid	\$192,200,700	\$183,124,000

* = The acres estimated for 2020 are used here due to being more accurate estimates than 2019.

Virginia’s wine and grape-growing industry experienced significant growth in the number of wineries and demand of Virginia wine since 2015 (the most recent economic impact study). The number of bonded wineries in the Commonwealth of Virginia grew to 357 in 2019 from 261 in 2015. Wine production in Virginia grew by approximately 17% from 2015 to approximately 1.97 million gallons produced in 2019, ranking Virginia as tenth in the nation in wine production.

The wine and grape industry in Virginia connects to many parts of Virginia’s economy beyond agriculture, beverage manufacturing and these industries’ direct vendors. As the number of

Virginia wineries increased between 2015 and 2019, the estimated number of tourists visiting wineries increased from 2.25 million tourists in 2015 to 2.64 million (+17.4 percent). Wine, grapes and related industries accounted for 10,420 jobs in Virginia with an associated payroll of nearly \$398.8 million in 2019.

Additional highlights from this study include:

- Approximately 349 Virginia wine-grape growers produced a crop with a total value in 2019 was \$17.8 million;
- An estimated 357 Virginia wineries or wine companies sold over 604,000, nine-liter (9L) equivalent units of wine in 2019, for a retail value of over \$146.4 million supporting 2,586 jobs at Virginia wineries;
 - Wineries generated revenues of over \$120 million in 2019 from wines sold through multiple channels;
 - Approximately 65.6 percent of 9L equivalent units (cases) were sold direct-to-consumer or DTC by Virginia wineries in 2019, including to visitors that received shipments after visiting a Virginia winery;
 - Virginia's wineries also hosted events and weddings to generate more revenue, estimated to be over \$37 million in 2019; and
 - Distribution, restaurants and state liquor (Virginia ABC) stores sold remaining units, with about five percent of wine produced in Virginia exported to outside markets;
- Direct winery and vineyard income and spending supported 3,060 jobs in 2019;
 - Winery and grape sales supported at least 430 additional jobs at vendors and customers such as distributors, vineyard and winery equipment suppliers, retailers (Virginia ABC), and restaurants;
- Between 2015 and 2019, wine-related tourism revenues increased by 31.4 percent, contributing over \$246.7 million in revenues to Virginia's economy in 2019, supporting 2,263 jobs and over \$79.8 million in wages;
- Wine-related activity in 2019 contributed over \$111.9 million in state and local tax revenues for Virginia, with approximately \$80.3 million in federal tax revenue; and
- Since the last report in 2015, stability in the total number of vineyard acreage continued to 2020, with approximately 509 more acres in net in Virginia from 2015 to 2020 based on the latest data available.

Introduction

The Virginia Wine Board (VWB) has commissioned studies quantifying the economic impact of the wine grape and wine-producing industries in Virginia for 2005, 2010, 2015, and now 2019. The analyses below estimate revenues, jobs and wages associated with all tiers of wine production, distribution and consumers. This report was also commissioned by VWB and shows how the “multiplier” effect from wine-related businesses and their employees spending their wages has changed since 2015 based on industry expansion, contraction and shifting consumer markets. Hundreds of industries in Virginia are affected by Virginia’s wine industry and its economic impacts. It is important to recognize this report’s estimated data consider revenues and not profits; the costs of doing business rising is reflected in part by the rising wages levels across the wine-industry and its allied industries. Because this report describes connections among core wine-industry and specific, allied industries, findings and data within this report can be used for legislative and regulatory advocacy, business or government strategy, investment and academic applications. Let’s start with an overview of wine in Virginia’s economy.

Wine in the Virginia Economy

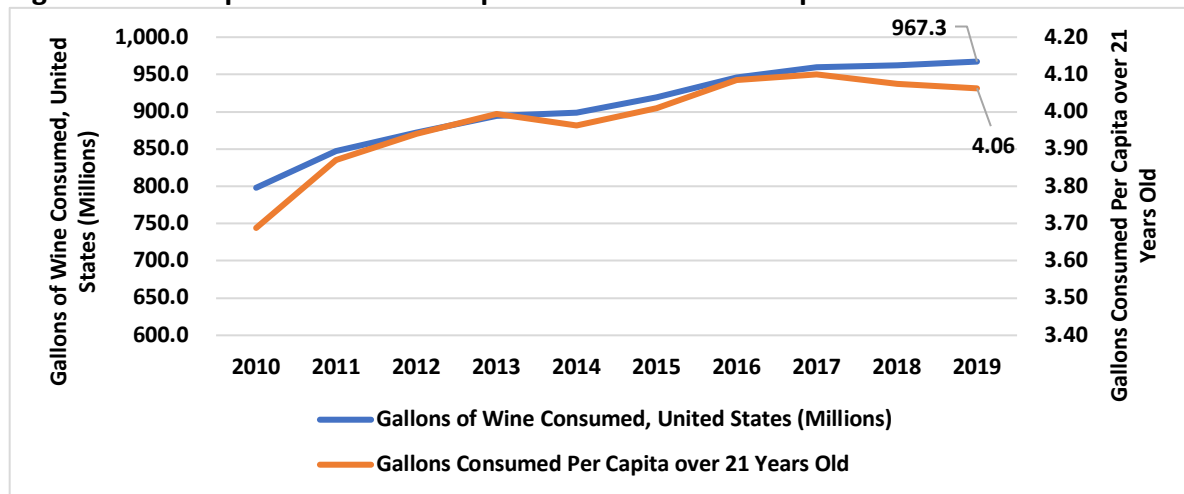
Wine is a product from agriculture, combining farming and a manufacturing process. This combination is reflected in wages, revenues, taxes, and spending on agricultural and production technology and supplies. Growing grapes and making wine is a long-term commitment to a community, both financially and 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 Virginia 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 scores of industries.

A “multiplier” effect is created by vineyards, wineries, distributors, retailers, and visitors purchasing wine through a supply chain that adds value as harvested grapes become bottled wine in state liquor (Virginia ABC) stores, hundreds of restaurants, and wine sold by the wineries themselves directly to final consumers. The affected industries and workers include almost every type of worker and community in the Commonwealth of Virginia.

Wine production is a labor-intensive business and supports other labor-intensive businesses, including warehousing, vineyard and winery maintenance, and retail, restaurants and hotel jobs. Tourists add to the demand for wine and also hospitality industries that also serve Virginia’s residents. The wine industry’s existence expands the support for smaller businesses throughout Virginia, especially in the Shenandoah Valley, central Virginia, the Monticello area near Charlottesville, and also northern Virginia close to Washington, D.C. (Middleburg). Gains from tourists include hotel and motel occupancy at larger levels than without the wine industry, visitors that generate tax revenues on overnight stays and a broad array of retail spending. Wineries have also become popular wedding destinations, enhancing the connection to visitors and their spending throughout Virginia and also provides more tax revenues. Each industry “tier” contributes tax revenues for city, county and state government uses.

As we see below, a large portion of wine produced at Virginia wineries is sold direct-to-consumer (DTC), a trend that has continued to increase over the last decade. Figure 1 shows how U.S. population growth and gallons of wine consumed annually have evolved since 2010. Total gallons consumed have increased annually since 2010, while per capita consumption for the U.S. population over 21 experienced a recent peak in 2017.

Figure 1: U.S. Population and Per Capita Table Wine Consumption 2010-2019



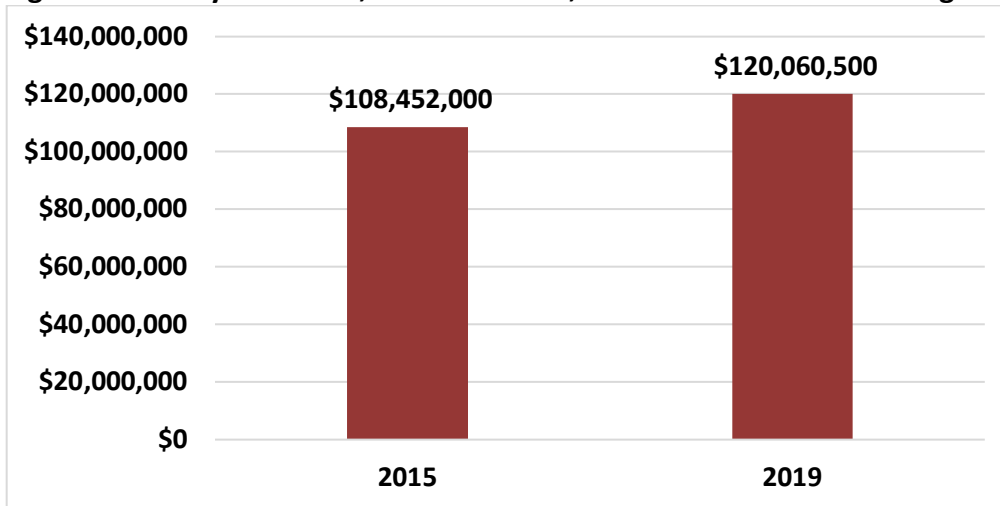
Sources: U.S. Census, Wine Institute

Virginia wineries buy grapes from both Virginia’s vineyards and also use grape juice from outside Virginia to produce wine using equipment like any other food or beverage manufacturing process. What makes this industry unique is the number of unique products and the packaging, marketing, and wholesale services to support that breadth. Unlike many agricultural products, where raw products used as inputs may be exported to other states for processing, the wine industry retains much of its aggregate production

value within the local areas where grapes are grown. Many wineries are owners of their own “estate” vineyards. Such industry concentration supports an array of professional services, industrial wholesalers, producers and sellers of equipment and infrastructure throughout Virginia.

Sales of wines produced in Virginia came to just over 640,000 nine-liter (9L) cases in 2019, an increase of 31 percent over 2015 (according to Virginia ABC estimates). Virginians also drink wines from other wine regions worldwide. Virginia wines constitute a minority of all wine sales within the state. Virginia wineries have diverse revenue streams, including those tied to winery visitors to tasting rooms or those that use wineries for hosting events.

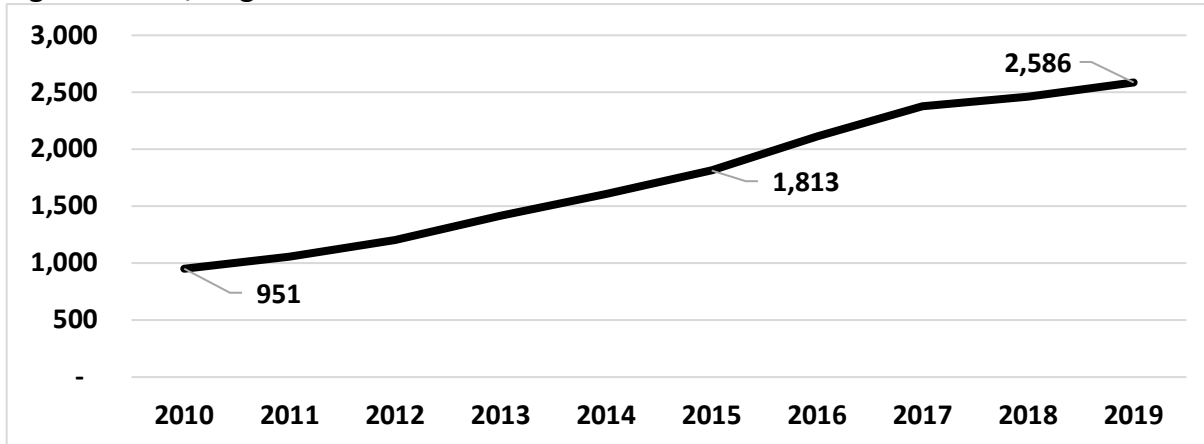
Figure 2: Winery Revenues, 2015 and 2019, Sales of Wines Made in Virginia



Source: Bureau of Labor Statistics, IMPLAN®, Virginia Wine Board, Virginia Tech

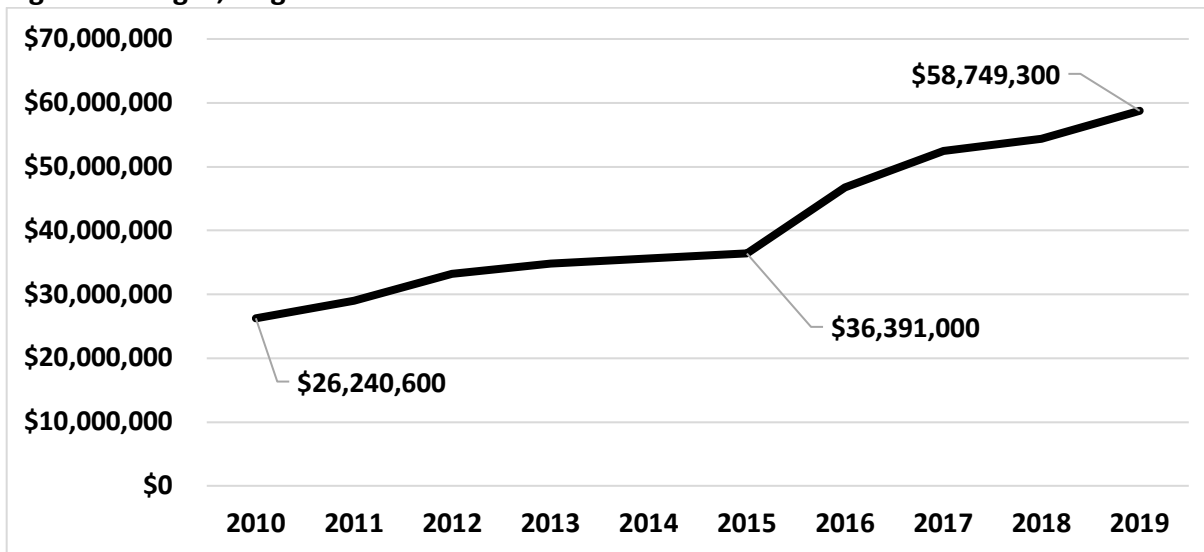
Figures 3 and 4 provide more details on the effects of wineries in terms of jobs supported since 2010 and also the wages paid to workers. As we see below, the combination of winery revenues, tourism spending in Virginia specific to winery visitors, and how related workers spend their wages and salaries on a broad amount of goods and services throughout Virginia’s economy, create indirect and induced impacts from this industry (the “multiplier”). The sum of these economic impacts includes the state, local and federal tax revenues generated by these activities.

Figure 3: Jobs, Virginia's Wineries 2010 to 2019



Source: Bureau of Labor Statistics, IMPLAN®, and EFA

Figure 4: Wages, Virginia's Wineries 2010 to 2019



Source: Bureau of Labor Statistics, IMPLAN®, and EFA

To describe and estimate the size of Virginia's wine industry, we now consider the direct economic impacts created by wineries, grape growers and allied industries. Each of the following sections provides both background information and also the direct economic impact estimates to be used later in the estimated, overall impact on Virginia's economy. **Direct** economic impacts include business revenues, jobs, wages, and taxes paid in each of the industries as described below. We see below that these direct effects create a multiplier or broader effect through vendor spending and worker wages (**indirect**) and broader spending because on how households and workers spend their wages and incomes derived from the wine industry more broadly (**induced**).

Wine Grape Cultivation

Direct Employment: 474 jobs¹

Total Wages: \$11,200,100

Wine Grape Grower Revenues: \$17,788,800

Recent survey data by the Virginia Wine Board estimated that Virginia vineyard owners harvested approximately 7,412 tons of grapes in 2019. Average prices were estimated to be \$2,400 per ton in 2019 (production is down from 8,682 tons harvested at \$2,016 per ton in 2015). From 2015 to 2019, bearing acreage increased from 3,172 acres to 3,409 in 2020 in Virginia, a 7.4 percent increase.² Approximately 215 additional acres are planted but yet to bear fruit from 2015 to 2020.

Not all harvested grapes are sold by an independent farmer to a winery. Vineyards owned by wineries, whose grapes are used in their brands (“estate-bottled” wines), harvest grapes that represent a transfer cost to a winery, but not a cash transaction similar to a winery buying grapes from an independent farmer. Wineries have estate-bottled grapes as part of their costs of goods sold, and ultimately revenues, with value added to the grapes through crush/processing and storage once the grapes are converted to fermenting juice.

Winery Revenues and Employment in Virginia

Direct Employment: 2,586 jobs (including workers supporting events on-site at wineries)

Total Wages: \$58,749,300

Total Revenue: \$120,060,500

Total Revenue from events and weddings: \$37,005,900

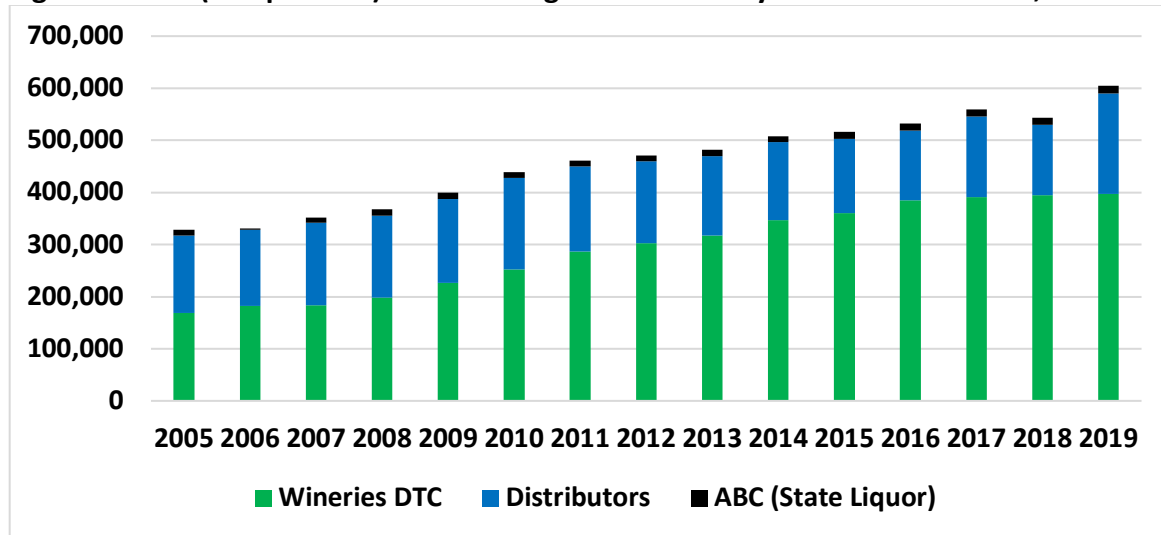
Winery sales of bottled products are primarily direct-to-consumer or DTC in Virginia. There are many states where wine can be sold in an array of retail outlets and not restricted to restaurants and state liquor (Virginia ABC) stores. In 2019, 65.7 percent of wine sales by Virginia wineries were through the DTC channel. Figure 5 shows 9L equivalent case sales by main sales channels from 2005 to 2019. The main channels include: DTC, distribution (export and restaurant sales) and retail at ABC stores. Virginia wines are approximately 4.5 percent of all wine sold in Virginia on average from 2005 to 2019 (in 2019, that proportion was slightly above 5.3 percent). Tourism becomes more wine sales through wine clubs and the DTC channel through tasting room visits becoming

¹ Employment and wages come from Bureau of Labor Statistics (www.bls.gov) for calendar year 2019.

² Data were available for wine grape acreage in 2020 at the time of this writing and are slightly more accurate than the 2019 estimate. Data in acreage and tonnage is not consistently tracked between 2015 and 2019 by any entity in Virginia.

long-term, Virginia winery customers; wineries that host events and weddings are estimated to have made another \$37 million in revenue beyond wine sales in 2019.

Figure 5: Case (9L Equivalent) Sales for Virginia Wineries by Destination Market, 2005-19



Sources: Virginia ABC Reports 2005-2019, Virginia Wine Board

The Direct-To-Consumer (DTC) Phenomenon

One way that wineries vertically integrate (where different links or tiers in the supply chain are connected by the same businesses internally) is through direct-to-consumer or DTC sales. Wine clubs are a classic example of direct sales for wineries. Direct sales have expanded into third-party wine clubs, online wine stores and many other ways that consumers can purchase wine without leaving their home. Two related but separate trends are emerging toward 2025: (1) growth in DTC sales for wineries, both to club members and from winery website visits through online stores; and (2) growth in online sales by virtual stores beyond wineries that then deliver sold products directly to homes. Expanding shipping and logistics networks have also supported DTC sales outside of classic wholesale-retail tiers, including distribution.

Distribution (Wholesalers, brokers, importers)

Direct Employment: 35 jobs
Total Wages: \$2,289,500
Total Revenue: \$8,784,900

For various legal (taxation), management and economic reasons, wines in Virginia are sold through a “three-tier system”, where wineries, state liquor (ABC) stores, distributors, and restaurants, are points of sale. This includes wines from other states and countries. Winery shipments move to distributor-wholesaler businesses that then

sell to restaurants (on-premise sales)³ Figure 5 shows the case-sales progression from 2005 to 2019 in distribution for both export and restaurant sales for Virginia wineries.

The wholesale tier acts as a conduit to the broader market for Virginia wineries, but this tier also connects Virginia consumers with wines from around the world. The total amount of wine sold through Virginia's three-tier distribution system was 640,000 cases (9L equivalent volume) in 2019.

The distributor tier adds value to winery supply chains by providing delivery, bill collection, warehousing and promotion services. Wineries discount their wines substantially when selling to distributors versus what they could sell for in the winery, providing space for price markups to pay for and profit from these value-add services. Such distribution adds to winery marketing and to tourism to Virginia to visit the winery areas throughout the state.

Tourism

Direct Employment: 2,263 jobs

Total Wages: \$79,844,200

Total Revenue: \$246,706,200

Virginia welcomes millions of visitors that visit wineries annually. These visitors are important because they do more than simply spend money and stay overnight while in Virginia. These visitors become wine-club members, customers of wineries when they visit tasting rooms, and perhaps also consider events and weddings in winery facilities. In 2019, weddings and events at wineries provided another \$37 million in winery revenues beyond wine sales.

In 2019, Visit Virginia contracted with TravelTrakAmerica to survey visitors to wineries about their spending and reasons for coming to Virginia as well as Tourism Economics to estimate aggregate tourism outcomes. The following points helped our estimates of visitors and spending related to wineries:

- On average, \$717 was spent per trip, with the average overnight stay equal to 3.7 nights;
 - Approximately \$239 per day per party with an average party size of 2.4 people;
 - This allows an estimation of \$99.58 per visitor per day spending;

³ Wineries may sell wine through the three-tier system to other US states. Approximately 5% of all Virginia winery volume is sold in this manner.

- Most were there visiting friends or relatives also, with top activities beyond wineries being sightseeing historical sites and rural areas, and also visiting craft breweries;
- Over one-half of the visitors surveyed came from Virginia, New York or Pennsylvania;
- Over 61 percent were between 25 and 54 years of age.

Retail and Restaurant Wine Sales in Virginia

Direct Employment: 308 jobs

Total Wages: \$8,001,300

Total Revenue: \$17,569,800 from all sources⁴

The impact of wine sales in the retail and restaurant tiers originate from two different sources: (1) wine sold by Virginia wineries to state liquor (Virginia ABC) stores; (2) wine sold by restaurants inside the state of Virginia purchased from distributors that purchase wine from Virginia wineries. Retail and restaurant sales are important core industries for wineries and vineyards as these industries are yet another link connecting grapes to final consumers.

As Figure 5 shows, ABC stores sell a small amount of volume of Virginia wine versus other outlets (DTC, distribution), as ABC stores provide a wide array of imported (wines from other parts of the United States and international) brands. Off-premise sales' share of total retail dollar sales at Virginia ABC stores is relatively small versus the total market for wine made in Virginia; average prices in ABC stores for Virginia wine were close to \$11 per 750ml bottle versus \$25 for wineries selling in DTC channels. Restaurants tend to mark-up their wine purchases from distributors in a range from two to 2.5 times their purchase price from distributors for on-premise consumption.

Allied Industries and Charitable Contributions

	Allied Industries, 2019
Jobs	87
Wages	\$3,216,700
Revenues	\$8,259,900
Charitable Contributions	\$1,507,000

Ties to complementary industries, such as vineyard and winery equipment and maintenance, vineyard development, winery and vineyard

⁴ This number does not include tasting room sales at wineries or winery shipments to consumers in Virginia.

consulting all expand the **direct** economic impacts of the wine industry and provide revenues and jobs in “allied” industries that would not have the same revenue levels but for the wine industry’s presence in Virginia. For example, vineyard and winery development, design and maintenance businesses and jobs would not exist if grape vineyards and wineries were not in Virginia at a scale that supported them. Wine and Beer Supply in Virginia is an example of such a vendor. Further, vineyard development can be a two- to five-year process from raw dirt to viable harvest, which suggests incomes are made by the allied industries before vineyard owners or wineries generate subsequent revenues.

For other industries, revenues are more tied to a winery’s costs of production (e.g. labeling, glass, corks, tanks, trucking, warehousing), or administrative and marketing costs (e.g. printing and professional services). These businesses are supported because Virginia’s wine industry has enough scale for these vendors to have specific lines of business and investments to serve the wine industry directly. We used IMPLAN®, as well as changes from the 2015 data in terms of estimated production, winegrape acreage, jobs, and wages to estimate the 2019 effects in these allied industries.

Taxes & Regulation

The wine industry generates significant tax dollars, benefiting federal, state and local governments. In Virginia, tax dollars are raised through excise taxes, income taxes, estate and gift taxes, payroll taxes, property taxes, and other business taxes and fees, such as transient occupancy taxes or TOT, licenses, building permits, and other taxes and fees. Wine production and sales are licensed and regulated at the state and federal levels.

A state liter tax on wine is assessed through Virginia ABC (the tax is \$0.40 per liter, a large proportion of which is transferred to the Virginia Department of Behavioral Health and Developmental Services). Industry employers also pay payroll taxes to federal and state governments for their employees along with a percentage of their net income in the form of income taxes, which is paid at the corporate level or passed through to individuals, depending on the ownership structure. The 2017 Tax Cuts and Jobs Act or TCJA at the federal level provided lower tax rates for businesses and individuals such that the federal taxes the Virginia wine industry pays fell per dollar of economic impact in 2019 from 2015. Figure 6 provides a summary of estimated taxes paid and other governmental fees throughout Virginia based on the combined economic impacts (direct, indirect and induced).

Figure 6: Tax Receipts in Virginia, Related to the Wine Industry, 2015 and 2019

Tax Type	Estimated 2019	Estimated 2015
Federal Level Taxes		
Excise	\$ 8,687,100	\$8,956,000
Payroll	\$ 26,875,800	\$27,356,000
Income	\$ 22,639,000	\$34,775,000
Other Taxes	\$ 22,076,300	\$17,890,000
Totals	\$ 80,278,200	\$88,977,000
State Level Taxes		
Excise Taxes	\$ 2,455,000	\$2,531,000
Sales Taxes	\$ 42,226,200	\$34,219,000
Payroll Taxes	\$ 10,260,700	\$8,092,000
Property Taxes	\$ 43,091,900	\$38,050,000
Other Taxes and Fees	\$ 13,888,700	\$11,255,000
Totals	\$ 111,922,500	\$94,147,000
Grand Totals	\$ 192,200,700	\$183,124,000

Sources: Virginia ABC, EFA, and IMPLAN®

A CONSERVATIVE MEASURE OF VALUE

The figures provided in this report should be viewed as a conservative baseline measure of the economic impact, as the true impact of the Virginia wine industry, including intangible benefits is much greater. Virginia wine and wine grape producers face sizable challenges to their continued growth and success. Working to support the Virginia wine industry and to ensure its long-term success will protect the significant benefits the industry provides to the Virginia economy.

The measures of economic impact within the state of Virginia of \$1.73 billion in 2019 reflect a unique partnership of nature, entrepreneurship, artistry and technology. We now conclude this study with an overview of the economic impact methodology and then detailed data on the economic impacts from Virginia’s wine industry as described above.

Economic Impact Estimation

IMPLAN® Modeling

IMPLAN® is derived from the phrase “Impact analysis for PLANning.” IMPLAN® is an economic model that uses input-output tables for over 400 industries. Initially developed by the U.S. Forest Service, it is currently used hundreds of universities, government agencies, corporations and economic consulting firms doing research to estimate regional and industry-specific economic impacts. As shown below, this study supplemented primary data for employment, wages, and revenue with IMPLAN® estimates when not directly available or survey data may have had some ambiguity.

The broader effects of the main industry tiers (vineyards, wineries, distribution, and retail) and shown above including allied industries. The best way to think about the ripple or multiplier effects that the IMPLAN® In the IMPLAN® model, these effects are categorized as follows:

Direct effects are changes in the industries associated directly with final demand. For example, in this study, winery revenue is the direct effect of all wine sold by Virginia’s wineries. Direct jobs and wage (income) effects represent the employees hired by, or income derived directly from, the production and sale of wine – from vineyard down through retail sales. IMPLAN® was not used for these calculations, but help generate the indirect and induced effects.

Indirect effects are the changes in industry sectors that supply goods and services to industries directly affected by the changes in demand for wine or grapes. Examples of indirect effects are the purchase of glass bottles, corks, utilities, and goods and services by the wine industry. Some indirect effects were estimated based on primary research, but where this research was insufficient they were supplemented or replaced by IMPLAN®.

Induced effects are changes in economic activity resulting from households spending of income earned from direct or indirect sales. For instance, employees of wineries and printers spend their wages and salaries in Virginia, resulting in additional output, income, and jobs in Virginia. These effects were entirely estimated using IMPLAN®.

VIRGINIA WINE - Summary Table 2019 (Compared to 2015)

Revenues	Total 2019	Total 2015
Winery Sales	\$120,060,500	\$108,452,000
Retail and Restaurant Sales of Virginia wine	\$17,569,800	\$15,130,000
Distributors Sales	\$8,784,900	\$5,758,000
Non-Wine Revenue (Weddings, Events, etc.)	\$37,005,900	\$23,636,000
Tourism	\$246,706,200	\$187,747,000
Wine Grape Sales	\$17,788,800	\$17,940,000
Federal Tax Revenue	\$80,278,200	\$88,977,000
State Tax Revenue	\$111,922,500	\$94,147,000
Vineyard Development (excluding vines)	\$2,581,100	\$2,650,000
Charitable Contributions	\$1,507,000	\$1,293,000
Allied Industries -- Glass, Closures, Chemicals	\$3,900,400	\$3,203,000
Wine Research/Education/Consulting	\$1,778,400	\$3,632,000
Indirect (IMPLAN®)	\$370,789,600	\$314,122,000
Induced (IMPLAN®)	\$309,372,600	\$208,303,000
Total Revenue	\$1,330,045,900	\$1,074,990,000
Wages		
Winery Employees	\$58,749,300	\$36,391,000
Vineyard Employees	\$11,200,100	\$19,904,000
Tourism	\$79,844,200	\$43,704,000
Vineyard Development and Materials - Labor	\$1,049,700	\$398,000
Distributors Employees	\$2,289,500	\$2,066,000
Retail/Liquor Stores - Wine Specific	\$1,016,400	\$602,000
Restaurant Sales of Virginia Wine	\$6,984,900	\$3,505,000
Allied Industries -- Glass, Closures, Chemicals	\$1,704,400	\$825,000
Wine Research/Education/Consulting	\$462,600	\$2,280,000
Indirect (IMPLAN®)	\$141,034,000	\$115,031,000
Induced (IMPLAN®)	\$94,454,900	\$66,603,000
Total Wages	\$398,790,000	\$291,309,000
Total Impact	\$1,728,835,900	\$1,366,299,000
Employment (Full-Time Equivalents)		
Winery	2,586	1,813
Vineyard	474	972
Distributors	35	35
Tourism	2,263	1,826
Vineyard Materials	44	15
Restaurants	281	205
Retail/Liquor Stores – Wine Specific	27	23
Allied Industries -- Glass, Closures, Chemicals	38	25
Research/Education/Consulting	5	32
Indirect (IMPLAN®)	2,589	1,801
Induced (IMPLAN®)	2,078	1,471
Total Employment	10,420	8,218

Sources

Employment and wage data for all line-item industries come from the Bureau of Labor Statistics and the IMPLAN® estimates for indirect and induced industries. EFA provided a survey of Virginia vineyard owners, vineyard managers and wineries asking for data on costs of goods sold, employment levels, and revenues for vineyards and wineries to provide a second source of data to corroborate IMPLAN® estimates for 2019 data when needed. Special acknowledgements and thanks go out to the staff of the Virginia Wine Board.

Revenues	Sources
Winery Revenue	Virginia ABC data reported by Virginia Wine Board (VWB), IMPLAN®
Restaurant and Retail Revenue (Markup)	Percent of Distributor sales based on Distributor survey and interviews and Virginia ABC data, IMPLAN®
Wine Grape Sales	VWB survey results, recent data from surveys have low sample sizes from 2016-19
Distributor Sales	ABC reporting on wine sales reported by VWB
Tourism	Visit Virginia, Virginia Tax
Winery Suppliers	IMPLAN® based on glass, printing, tanks, barrels, corks, capsules,
Vineyard Suppliers	IMPLAN® based on fencing, trellis, nursery
Vineyard Development	IMPLAN® based on services for vineyards
Allied Industries	IMPLAN® based on winery and distributor and retail revenues
Wine Research/Education/Consulting	IMPLAN® based on winery revenues
Charitable Contributions	IMPLAN® based on winery revenues
Tax State	Mix of IMPLAN® results, ABC reported liter tax, sales taxes
Tax Federal	IMPLAN® + Federal Excise Taxes
Indirect	IMPLAN® model for Virginia in 2019
Induced	IMPLAN® model for Virginia in 2019
Wages/Employment	Sources
Wineries	Quarterly Census of Employment and Wages (QCEW), Census
Restaurants	IMPLAN® based on markup
Retail/Liquor Stores	IMPLAN® based on markup
Vineyards	QCEW (Bureau of Labor Statistics)
Distribution	IMPLAN® based on wine sales through distribution
Tourism	IMPLAN® based on revenues
Winery Suppliers	IMPLAN® based on revenues
Vineyard Suppliers	IMPLAN® based on revenues
Allied Industries	IMPLAN® based on revenues
Wine Research/Education/Consulting	IMPLAN® based on revenues
Indirect	IMPLAN® model for Virginia in 2019
Induced	IMPLAN® model for Virginia in 2019
Number of Wineries	Federal Alcohol and Tobacco Trade and Tax Bureau (TTB), QCEW, Wines and Vines Buyer's Guide, Census Bureau
Number of Vineyards	QCEW, Wines and Vines Buyer's Guide
Acres Bearing and Non-Bearing	VWB Annual Survey of Vineyards, Virginia Tech

Research Team

About Economic Forensics and Analytics, Inc. (EFA)

Economic Forensics and Analytics, Inc. (EFA) is an independent research and consulting firm located in Sonoma County, California. Since 2000, we've been dedicated to providing clients with customized economic analysis at reasonable costs when compared to our larger, local competitors. We keep overhead low and pass the savings onto you. We have a wide range of clientele in the private and public sectors throughout the state of California. EFA provide clients with economic impact reports for economic development support. For government and businesses alike, EFA can also provide economic impact analysis using the latest data and a proven method of describing the effects of decisions. EFA's president, Robert Eyler, PhD, has a doctorate in economics from the University of California at Davis. See more at www.econforensics.com.