

ECONOMIC IMPACT OF VIRGINIA GRAPES AND WINE 2005

This study was commissioned by the
Virginia Wineries Association,
Virginia Vineyards Association and
Virginia Department of Agriculture and Consumer Services

 **MKF RESEARCH LLC**

A joint venture of
Global Wine Partners US LLC
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ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

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ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

HIGHLIGHTS

FULL ECONOMIC IMPACT OF WINE
AND GRAPES IN VIRGINIA

\$ 361.8 Million¹

VIRGINIA WINE AND GRAPES	ECONOMIC IMPACT
Full-time Equivalent Jobs	3.2 thousand
Wages Paid	\$84 million
Virginia Winery Sales	\$29.1 million
Sales of Other Wines in Virginia	\$681 million
Farm Gate Value of Grapes	\$7.6 million
Grape Bearing Acres	Over 2 thousand
Wine-Related Tourism Expenditures	\$57 million
Number of Grape Growers	262
Taxes Paid (State and Local) ²	\$37 million
Charitable Contributions	Over \$300 thousand

¹ See **Table 5** below.

² Underestimate as no data available on property taxes paid by wineries or vineyards other than personal property taxes.

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Virginia's wine and grapes and related industries produced nearly \$362 million³ of total economic value to the Commonwealth of Virginia in 2005.

The wine and grape sectors paid over \$21 million in state and local taxes in Virginia.⁴ See **Table 6.1**.

Wine, grapes and related industries account for over three thousand jobs across the Commonwealth, for a payroll of nearly \$84 million.

Table A
Total Virginia Employment - 2005
Wine, Grapes and Related Sectors

Vineyards	482
Vineyard Development Contractors	5
Wineries	439
Tourism	714
Winemaking Equipment, Supplies and Services	17
Wine Distribution	26
Retail/Liquor Store	12
Restaurants	322
Education & Research	9
Indirect	599
Induced	537
Total	<u>3,162</u>

Source: MKF Research

The long-term nature of the production process for wine and grapes requires a continuing commitment contributing investments and employment to the local economy. This commitment is tied to a specific location, unlike most manufacturing and service businesses. Therefore, a commitment to a Virginia vineyard is a long-term commitment to the Virginia economy and its workforce.

³ See **Table B** below.

⁴ IMPLAN

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

EXECUTIVE SUMMARY

Table B
Total Economic Impact (Sum of Total Spending) on Wine and Grapes in Virginia

Revenue:	
Winery Sales	\$ 29,134,000
Retail and Restaurant Wine Sales	12,735,000
Distributors Sales	3,502,000
Tourism	56,983,000
Farm Gate Value of Grapes	7,616,000
Federal Tax Revenues	15,496,000
State Tax Revenues	21,200,000
Vineyard Development (excluding vines)	143,000
Winemaking Equipment, Supplies and Services	3,131,000
Charitable Contributions	304,000
Advertising/Marketing	136,000
Winery Research	572,000
Indirect (IMPLAN)	75,254,000
Induced (IMPLAN)	51,826,000
Total Revenue	\$ 278,032,000
Wages:	
Winery Employees	\$ 9,546,000
Vineyard Employees	8,373,000
Tourism	14,238,000
Vineyard Development - Labor	123,000
Winemaking Equipment, Supplies and Services	745,000
Distributors Employees	1,316,000
Retail/Liquor Stores - Wine Specific	271,000
Restaurant Wages	5,728,000
Education and Research	412,000
Indirect (IMPLAN)	25,846,000
Induced (IMPLAN)	17,204,000
Total Wages	\$ 83,802,000
Total	\$ 361,834,000

CHALLENGES AND OPPORTUNITIES

Challenges

Virginia's grape and wine producers face a complex array of challenges.

Legislation and Regulations

State legislation and county regulation have had a significant impact on Virginia's wine industry.

In 2005, the Federal District Court in Richmond struck down the right of Virginia wineries to "self distribute," to serve as their own distributor and deliver wine directly to shops and restaurants in their own vehicles. The 2006 General Assembly failed to pass a bill to allow small wineries nationwide to self distribution in Virginia and, as a result, the wineries lost the privilege to self distribute on July 1, 2006. In early 2007, a pair of identical bills was introduced to the state legislature that would allow Virginia wineries to distribute up to 3,000 cases of wine through a state-owned, non-profit distribution system.

In 2005, after nearly twenty years of selling only Virginia wines, state ABC stores were barred from exclusively selling Virginia wines. As a result of this ruling and the uncertainty around it, ABC stores did not replenish their stock of Virginia wine and nearly ran out in mid-2006. This ruling was successfully appealed later in 2006 and the stores now again stock Virginia's wines.

Some wineries in certain communities have been impacted by county use permits and related restrictions placed on wineries which could impact volume of business. The 2006 General Assembly passed House Bill 1435 which prohibits localities from requiring wineries to secure special permits for processing wine. Further, the bill requires localities to preserve the status quo with regard to their farm winery regulation only until July 1, 2007. Use permits for other activities are still an open item and are handled very differently from county to county. Urban encroachment on formerly rural lands is giving rise to issues between wineries and their neighbors. Competing with vineyards for land, this same urban encroachment also impacts wineries by limiting farmers from growing grapes on the best possible sites in viticultural terms.

Trained Labor and Availability of Training

Virginia faces a shortage of trained viticulture and enology professionals, as do many regions of the country. This shortage has limited the continued expansion of the wine grape industry as well as continuing efforts to improve grape quality.

Limited Expertise in Winery Business Planning

EXECUTIVE SUMMARY

Many small wineries have limited expertise in the financial and capital requirements of operating a winery and in developing sufficient business and financial plans.

Scarcity of Financing

The capital-intensive nature of the winery and vineyard sectors is often underestimated. It appears that some parts of Virginia's winery and vineyard sectors may be under-served by credit and other financial institutions, especially institutions which understand the business of wine and grapes. This will become more of an issue as existing wineries try to grow and more startup vineyards and wineries are launched.

Climate

Virginia grape growers face a challenging natural environment most years. Extreme weather poses the greatest viticultural hazard. In 2003, below average temperatures during bloom, Hurricane Isabel in September and an early frost created a variety of challenges for growers. In early 1996, a significant freeze with temperatures below zero degrees Fahrenheit wreaked havoc on vineyards.

Opportunities

However, opportunities for growth mitigate these challenges.

Direct Shipping Legislation

As a result of relatively new laws, a significant portion of the U.S. population is now accessible for direct to consumer wine shipment, enabling the wineries to ship wine to more of their visitors as wine tourism grows. (Tasting rooms remain the main driver in this winery direct sales market.) This should open up a new channel of high margin direct sales for wineries. Moreover, this legislation might also encourage the growth of wine clubs and winery mailing lists.

The opportunities presented by nationwide direct shipping are just beginning to be explored, but not without challenges. Many states have included complex compliance obligations or costly permit fees that may be a challenge to wineries without the appropriate personnel or monetary resources. Experience in direct shipping from other regions suggests that the greatest challenge to wineries seeking to build their direct sales is developing adequate information management systems and efficient fulfillment structures. Virginia has not had shipping volume sufficient to justify outsourced order fulfillment but such services may become appropriate as the market grows.

Improving Grape and Wine Quality

The quality of Virginia wine and viticulture has been steadily increasing and receiving growing recognition, reflected in rising sales on more profitable terms. A number of Virginia's wineries are making major capital investments to build world class vineyards and wineries. The identification of varieties that perform particularly well in Virginia such as Viognier and Cabernet Franc has helped to carve out a wine identity for the state. Virginia is beginning to get recognized in the national media for the quality of its wines.

Research Programs

Research programs in Virginia have been funded primarily through state funds provided to Virginia Tech. These programs have focused primarily on research involving improvements of viticultural and oenological practices. Neighboring states, such as North Carolina, also draw on this expertise.

Rising Demand for Wine among US Consumers

Virginia's wine and grape industries will benefit from America's steadily rising demand for wine – and for better wine. Wine is that most sought-after consumer good of this era: an affordable luxury.

After slowing from the peak growth rates of the 1990s in the early 2000s, American wine consumption is again rising, increasing overall by 6.9% in the twelve months through June 2007. Wine consumption in Virginia alone grew by 3.6% in 2005.

Wine demand is a function of many complex factors, including demography, health issues and general affluence and preference for premium products. Increases in consumption have been seen with the Baby Boomer generation as well as the adult segment of the "millennial" generation. Wine consumption, especially for red wines, has increased steadily with the acceptance of the "French Paradox," suggesting elements of red wine assist in protecting healthy hearts.

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VIRGINIA'S WINEMAKING INDUSTRY

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Virginia was the twelfth largest overall wine producer in the United States in 2005 based on gallons produced.

Table 1.1
Top Twelve States' Annual Production of Wine (Gallons)
Gallons Produced in 2005

State	Production	Rank	Percentage of Total Production
California	664,764,191	1	90.82
New York	27,950,703	2	3.82
Washington	19,096,074	3	2.61
Oregon	3,144,250	4	0.43
New Jersey	1,703,774	5	0.23
Florida	1,529,095	6	0.21
Kentucky	1,244,227	7	0.17
Ohio	1,106,537	8	0.15
Michigan	994,886	9	0.14
Texas	991,971	10	0.14
Missouri	926,952	11	0.13
Virginia	889,736	12	0.12
All Others	7,586,588		1.04

Source: TTB

Virginia has 129 wineries producing over 3.8 million bottles per year. MKF Research estimates Virginia wineries' revenues from wine sales totaled \$29.1 million in year 2005, taking into account both direct sales and the wineries' share of revenue for wine sold through the three tier system.

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

VIRGINIA'S WINEMAKING INDUSTRY

HISTORY

Wine has been made in Virginia for nearly 400 years, beginning the year after English colonists arrived in Jamestown when colonists produced their first wine from what was believed to be the native scuppernong grape. After 100 years of failed attempts to make quality wine, people realized they must either use native varietals which are much more suited to the climate or seek out specific sites with microclimates which might support French varietals. When Thomas Jefferson planted native grape varietals at his home of Monticello and sold adjoining land to an Italian who planted American-French hybrid grape varietals, it gave much needed credibility to Virginia wine. Throughout the 1800s, hybrid grape varietals became more popular and extensive. With the onset of the Civil War, wine production came to a near halt. In the early 1900's, prohibition, which took hold in Virginia well before the federal government became involved, eliminated virtually any hope of a recovery of the Virginia wine industry.

In 1950, Virginia was down to only 15 commercial acres of grapes, and all of those were table grapes. Virginia farmers began to experiment with hybrids in the 1960s as agricultural experts were discouraging the planting of European varietals. Farmers continued to refine agricultural methods and sought out microclimates best suited for growing grapes. In the 1970s, European grapes were finally successfully grown in Virginia. By 1982, they were the predominant choice, with Chardonnay, Riesling and Cabernet Sauvignon leading the way.

The Virginia General Assembly simplified business practices for Virginia wineries in 1980 with the Farm Winery Law. Among other exceptions, the law allowed wineries to sell wine at wholesale and retail levels without additional licenses, provided 51 percent of their juice came from vineyards they own or lease. Government-sponsored agricultural outreach programs followed to help wineries improve grape growing and winemaking practices. State marketing programs were also established, including the development of the Virginia Winegrowers Advisory Board.

A STRATEGIC DIRECTION FOR THE VIRGINIA WINE INDUSTRY

In 2004, the governor introduced Vision 2015, the first-ever statewide strategic plan for the Virginia wine industry. Its goal is to double Virginia wine's market share within Virginia and to reach measurable national sales by 2015.

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VIRGINIA'S WINEMAKING INDUSTRY

Vision 2015 serves as a guide to local and state policy affecting Virginia's wine industry, to the need for implementation of new and improved marketing strategies, to new strategies for supporting the industry through rigorous research/extension programs and through development of new financial tools to support entrepreneurs entering or expanding within the industry. Above all, Vision 2015 presents a challenge to all segments of Virginia's wine industry, a challenge to strive for excellence in wine quality and quality verification, production and processing, marketing, distribution, research and extension, and public policy development.

THE VIRGINIA WINERIES ASSOCIATION

The Virginia Wineries Association (VWA) is a professional trade organization open to all Virginia wineries. It actively represents the interests of the Old Dominion's wineries. The mission of the Association is not only to promote quality and marketing of Virginia wines, but to provide information to the general public on wine-related programs and activities throughout the year, including the annual June Vintage Virginia Wine Festival, and the August Virginia Wine Festival, the annual Governor's Cup Wine Competition and awards program and the many individual winery events.

VIRGINIA WINE REGIONS

Grapes are grown in virtually all corners of Virginia. Although the Commonwealth is divided into five separate wine regions for tourism purposes, there are six American Viticultural Areas (AVAs) within its borders. These AVAs include Monticello, Shenandoah Valley, Rocky Knob, North Fork of Roanoke, Eastern Shore and Northern Neck. Some of these AVAs are relatively small as some have only a few vineyards within their borders. A substantial number of Virginia's wineries and vineyards are located outside of these official AVAs.

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VIRGINIA'S WINEMAKING INDUSTRY

Monticello AVA

Thomas Jefferson has been called America's first wine connoisseur. He was also an early advocate of Virginia viticulture. Therefore, it seems appropriate this central Virginia appellation is named for Jefferson's home, Monticello. Centered around Charlottesville, the AVA covers 1,250 square miles over four counties, including Albemarle, Orange, Nelson and Greene. With the area running along the eastern flank of the Blue Ridge Mountains, vineyards benefit from a natural east-southeast exposure and warm summer temperatures. Key varieties include Chardonnay, Cabernet Sauvignon, Cabernet Franc and the region's award winning Viognier.

Shenandoah Valley AVA

Virginia lays claim to the majority of the Shenandoah Valley AVA, although it crosses into the West Virginia panhandle. The region is bordered by mountain ranges, with the Blue Ridge Mountains to the east and the Allegheny Mountains to the west. Most of the wineries in the AVA lie in Virginia and produce a combination of *Vitus Vinifera* varieties, French-American hybrids and a limited amount of the native Norton grapes. The growing season can be distinctly warm and is drier than neighboring regions, which don't receive the same natural protection offered by the Appalachian Mountains. Dry is a relative term in the Mid-Atlantic States, as the average annual rainfall of the Shenandoah Valley is about 33 inches per year, considered wet by many standards. Winter can be difficult in this interior region, with heavy snowfall and winter vine kill a major issue.

Rocky Knob AVA

The original petitioner for the Rocky Knob appellation no longer exists, but two other wineries, Chateau Morrissette and Villa Appalaccia, now operate in the area. The AVA is located in a mountainous area east of the well-traveled Blue Ridge Parkway in southwest Virginia. The area was granted its AVA petition based on having a colder spring, with bloom occurring one week after the surrounding area, and high winds that reduce frost accumulation. Soils in the area are a mixture of silt loam and gravel, providing necessary drainage.

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VIRGINIA'S WINEMAKING INDUSTRY

North Fork of Roanoke AVA

The original petitioner of the North Fork of Roanoke AVA, another small AVA in southwestern Virginia, is also no longer in operation. The 22-mile-long valley appellation running along the eastern side of the Allegheny Mountain range has elevations of 1,200 to 2,200 feet, with the significant viticulture situated toward the higher end of that range. Distinguishing climactic characteristics of the region include cooling morning fog in summer, and prevailing westerly winds which provide good airflow necessary for Virginia's damp weather. The relatively large diurnal variations of temperature help to maintain acidity in the grapes.

Eastern Shore AVA

Virginia's Eastern Shore is known more for spectacular beaches than for its viticultural prowess. The appellation encompasses Accomack and Northampton counties, in the southern portion of Delmarva Peninsula. Virginia's portion of the peninsula is relatively flat and thin with mostly sandy soils and is heavily influenced by its proximity to the ocean and Chesapeake Bay. Seasons are more moderate than in mainland Virginia, with lower summer daytime temperatures and milder winters.

Northern Neck AVA

The Northern Neck appellation encompasses the most northern of Virginia's peninsulas or 'necks' jutting into Chesapeake Bay. Bordered on the east by Chesapeake Bay, the region is flanked by the Potomac and Rappahannock rivers north and south and in the west by the King George /Stafford County border. The climactic key to the area is its proximity to water, which means less temperature variation, a milder winter and more frost-free days than most of mainland Virginia. Both vinefera and French-American hybrids are grown, with Chardonnay and red Bordeaux varietals constituting the majority.

INDUSTRY STRUCTURE

Farm Wineries

To qualify as a farm winery, a winery must get 51 percent of its juice from vineyards it owns or leases. The Farm Winery Law was passed in 1980 to help bolster wine production by freeing Virginia wineries from certain licensing restrictions. For example, a farm winery may sell wine at both wholesale and retail levels without obtaining additional licenses. A farm winery can also have remote sales licenses enabling up to five retail locations.

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VIRGINIA'S WINEMAKING INDUSTRY

Size Distribution of Wineries

While the major share of Virginia wine, by volume, is produced by the six largest wineries, the vast majority of Virginia's wineries, by number, are very small.

Table 1.2
Size Distribution of Virginia Wineries

Annual Case Capacity	Number of Wineries
Less than 2,000	83
2,000-5,000	30
5,001-20,000	11
20,000 +	5
Total	129

Source: MKF Research

The winemaking industry in Virginia is actually several different types of businesses:

- Five large wineries, selling through all channels with roughly half of sales made through the "three-tier system" through independent, licensed distributors to retailers and some restaurants, with most of the wine remaining in the state of Virginia.
- A large number of medium and small wineries producing everything from fruit wines to ultra-premium Vitis Vinifera varietals. Although there are some sales to restaurants and retailers (primarily in their local regions), direct sales to consumers through tasting rooms and events make up the majority of sales and are critical to these wineries. Given their size, it makes virtually no financial sense to sell through distributors.

The number of wineries in Virginia continues to grow, but most new ventures are very small scale, typically with targeted production of less than 4,000 cases.

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VIRGINIA'S WINEMAKING INDUSTRY

GROWTH OF VIRGINIA WINE SALES

Sales of Virginia wine have experienced tremendous growth over the past two decades, increasing nine-fold in that period of time.

Table 1.3
Historical Table of Wineries and Case Sales

Year	Wineries	Case Sales
1985	29	35,325
1990	40	89,164
1995	47	175,138
2000	64	238,203
2005	129	320,171

The number of wineries in Virginia has grown from 3 in the mid-1970's to 29 in 1985 to 64 in 2000 and all the way up to 129 in 2005. The recent growth has been spurred by small wineries as the number of wineries has increased nearly 100% in the last five years while the volume of case sales has only increased by 34%.

The growth in the number of wineries has a variety of indirect effects. As indicated in Chapter 4, businesses have been formed recently to serve the wineries in the area by providing vineyard, winery and bottling supplies as well as mobile bottling services. As the concentration of wineries grows in these regions, increasing numbers of allied industries will be attracted to these communities to serve their needs. The central location of Virginia on the eastern coast also makes it a natural hub for servicing wineries in other states on the East Coast.

BROAD REGIONAL DISTRIBUTION OF WINERIES

There are wineries today in half, or 47, of Virginia's 95 counties. Only three counties have more than 10 wineries, as noted in **Table 1.4** below, and nearly half of the state's wineries are located in counties with less than 4 wineries.

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VIRGINIA'S WINEMAKING INDUSTRY

Table 1.4
Wineries by County

COUNTY	NUMBER OF WINERIES
LOUDOUN	16
ALBEMARLE	14
FAUQUIER	12
NELSON	8
RAPPAHANNOCK	6
BEDFORD	5
MADISON	4
SHENANDOAH	4
ALL OTHERS	60
TOTAL	129

With wineries spread throughout the state, including 60 wineries in 39 counties, many wineries are missing out on advantages of concentration such as shared visitors. Although the state has successful wine trails containing clusters of nearby wineries, many wineries are located far from other wineries and must entice visitors without the benefit of a common winery destination. In other wine regions around the country, wineries generally benefit through concentration, especially when so much of a smaller winery's success is based on winery visitors and retail direct to consumer sales.

INDUSTRY EMPLOYMENT

Virginia wineries provide employment for nearly 450 full-time equivalent jobs, representing a total payroll of over \$9.5 million.

Wineries employ full and part-time workers labor for bottling, storage, maintenance, and winemaking needs as well as hospitality, finance, sales and marketing functions. Some wineries also employ seasonal labor.

Employment at wineries has grown significantly, in line with the growth in the number of wineries and sales volumes over the past two decades. As Virginia's wine industry grows, there is likely to be continued growth in sales and marketing professionals.

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

VIRGINIA'S WINEMAKING INDUSTRY

DISTRIBUTION CHANNELS FOR VIRGINIA WINE

The primary distribution channel for Virginia wineries is direct to consumer out of tasting rooms. The five largest wineries account for approximately 80% of sales through distributors. Of the \$29.1 million of winery sales, it is estimated that \$11.7 million are made through the wholesale channel. Small and medium sized wineries often augment retail sales with direct sales to local restaurants and wine shops.

There are 66 licensed wholesale distributors in Virginia, most of which carry some Virginia wine. Currently, this is the only way Virginia wineries can sell to local retailers and restaurants. In April 2005, a federal ruling found that Virginia wineries' self-distribution rights, which had been put into place with the original Farm Winery Law in 1980, were unconstitutional because out-of-state wineries were not granted the same privileges as in-state wineries. Ultimately, the state Department of Alcohol and Beverage Control mandated that all Virginia wineries stop all self-distribution after July 1, 2006. In early 2007, a pair of identical bills was introduced to the state legislature that would allow Virginia wineries to distribute up to 3,000 cases of wine through a state-owned, non-profit distribution system.

Few wineries, other than the largest, distribute a significant amount of Virginia wine out of state through out-of-state distributors. Even then, it is typically less than 5% and never more than 10% of total sales.

RETAIL DISTRIBUTION

Wine can be sold in a variety of locations across Virginia. There are over 38,000⁵ establishments in the state with a license as a beer and wine merchant. This number includes bars and restaurants in addition to retail stores and state ABC stores. In 2005, after nearly twenty years of selling only Virginia wines, state ABC stores were barred from exclusively selling Virginia wines. As a result of this ruling and the uncertainty around it, ABC stores did not replenish their stock of Virginia wine and nearly ran out in mid-2006. This decision was successfully appealed later in 2006.

⁵ Virginia Department of Alcoholic Beverage Control

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

VIRGINIA'S WINEMAKING INDUSTRY

DIRECT SHIPPING

Wine consumers have greater access to hard-to-find wines from emerging wine regions, including Virginia, under new state laws passed during 2005 and 2006. As a result of these laws relating to the shipment of wine directly to consumers, direct shipping offers significant potential for growth in the Virginia wine industry as well as a risk of increased competition due to importing of wine from other states. It is too early to assess the sales impact of these new opportunities but much excitement and interest has been generated by the change in laws.

SHORTAGE OF TRAINED LABOR FORCE

To meet the rising standards for wine quality in the state, the scarcity of skilled viticulture and winemaking staff becomes an increasing constraint on Virginia winemaking, as is the case with other emerging U.S. wine regions. While not offering specific degrees, Virginia Tech's viticulture and enology programs are regionally strong. However, due to the demand for trained labor throughout the industry nationwide, it is not easy to retain trained staff in the local area.

LIMITED EXPERTISE IN WINERY BUSINESS PLANNING

Many of the smaller wineries have limited expertise in the financial and capital requirements of operating a winery and in developing sufficient business and financial plans. This is not surprising, given the relative short history of Virginia's modern wine industry, and is not unusual among other emerging wine industries. The limited expertise is reflected as perhaps over-diversification of varietals and in location decisions which often and understandably grew out of long term land ownership and the complexity of the wine market.

CAPITAL INVESTMENT

As in other emerging wine regions, many local banks are not very supportive of the industry as they do not fully understand the business model. The long period of time between investment (whether it be in a vineyard, winemaking facility, grapes or winemaking operations) and cash flow from the sale of product is not understood by many local lenders.

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

VIRGINIA'S WINEMAKING INDUSTRY

PROMOTION

Several wine trails have been very successful, although many wineries are still located in remote locations. Wine trails in Virginia include the Bedford Wine Trail, the Blue Ridge Wine Way, the Heart of Virginia Wine Trail, the Loudoun Wine Trail, the Monticello Wine Trail, the Northern Neck Wine Trail and the Shenandoah Valley Wine Country Wine Trail.

Virginia has been less successful than some other emerging wine regions in terms of wine marketing. Its neighbor to the South, North Carolina, has been very successful integrating wine into tourism promotion. New York State has successfully developed several cross promotion efforts for New York wine and food.

WINEGRAPE INDUSTRY IN VIRGINIA

Virginia has a long history of growing wine grapes, perhaps the longest history of any region in the United States. With the recent improvements in viticulture practices and identification of microclimates supporting particular grape varieties, there is potential in Virginia becoming a good environment for growing grapes which can produce world class wines.

Viognier and Cabernet Franc are two varieties which have shown some promise. According to Michael Green, Wine & Spirits Consultant for Gourmet magazine, “the quality of a Virginia Viognier can rival first-class Viogniers around the world. Many of Virginia’s versions blend richness and fruit-forward combinations coupled with an irresistible texture in the mouth.” Furthermore, “Cabernet Franc is one of the most food-friendly red wines on the planet, and Virginia has the potential to produce world-class versions of it marked by high-note red and fruit flavors, as well as refreshing acidity. This grape is a perennial sommelier favorite and works well with a variety of foods.”

HISTORY

As discussed in the previous section, the history of grape growing in Virginia goes all the way back to the founding of Jamestown 400 years ago.

THE VIRGINIA VINEYARDS ASSOCIATION

The Virginia Vineyards Association (VVA) originated in 1979 as a joint effort for information exchange and cooperation among viticulturists, wineries, and Virginia Tech. The goals and objectives of the VVA include managing the viticulture interests of the state, promoting the growth of commercial grape-growing as a major component of the Virginia agricultural sector, cultivating all species of grapes, promoting public recognition of the products made from Virginia's grapes, establishing and maintaining mutually beneficial relationships with local, state, and federal government agencies, and encouraging free interchange of information and ideas with professional and amateur enthusiasts.

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WINEGRAPE INDUSTRY IN VIRGINIA

GRAPE PRODUCTION TODAY

There are approximately 262 vineyards in the state with over 2,000 bearing acres, which produced 5,600 tons of grapes in 2005 for a total market value of over \$7.6 million.⁶

Table 2.1
Virginia Grape Production in Tonnage

	2001	2002	2003	2004	2005
Vinifera	3,264	3,918	2,963	2,866	4,296
Hybrid	689	566	475	615	920
Native	247	116	162	219	384
Total Wine Grapes	4,200	4,600	3,600	3,700	5,600

Source: NASS-USDA Annual Fruit Summary

CURRENT VIRGINIA VARIETALS

Grapes are grown in all corners of Virginia. The major grape varieties currently grown in Virginia include Vinifera varieties like Chardonnay, Cabernet Franc, Cabernet Sauvignon, Merlot, Pinot Noir, Viognier and White Riesling. Some hybrid varieties such as Seyval, Vidal Blanc, Chambourcin as well as the native Norton grape have significant plantings in Virginia. Chardonnay is the most widely planted variety, accounting for 20% of bearing acres in 2005, followed by Cabernet Franc, Cabernet Sauvignon and Merlot, each around 10%.

⁶ NASS Agricultural Statistics 2005-2006

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WINEGRAPE INDUSTRY IN VIRGINIA

GRAPE PRICES

Table 2.2
Average 2005 Grape Prices and Tons Produced by Major Varietal Category

Varietal	Tons Produced	Tons per Bearing Acre	Average Price
Chardonnay	1,145	2.73	\$1,389
Cabernet Franc	751	3.10	\$1,442
Merlot	731	3.60	\$1,613
Cabernet Sauvignon	448	2.11	\$1,619
Vidal Blanc	431	3.48	\$843
Viognier	276	2.23	\$1,834
Chambourcin	192	2.70	\$916
Norton	173	2.22	\$1,124
Seyval	152	3.23	\$938
White Riesling	103	2.15	\$1,183
Pinot Noir	61	2.35	\$1,384

Source: NASS and MKF Research

Grape prices are variable with vinifera grapes generally selling for higher prices than natives and hybrids. Virginia native and hybrid grape growers face a challenge as it appears that yields are not significantly different for these varieties versus the higher priced vinifera varieties. Although farming costs can be lower for natives and hybrids, yields should be higher than the averages in Table 2.2 to provide a profit to growers of these varieties.

CLIMATE AND OTHER ISSUES

Periodically, severe winters can damage harvests. Sudden changes in temperature and effects from hurricanes pose the greatest viticultural hazards. In many years, this has seriously impacted the industry. An example of a very difficult year was 2003. Below average temperatures during bloom resulted in poor fruit sets for many growers. Hurricane Isabel in September of that year caused further damage to leaves and bunches. Grapes which hadn't been harvested by early October met an early frost, delaying harvest by another couple of weeks. In early 1996, a significant freeze with temperatures below zero degrees Fahrenheit wreaked havoc on vineyards.

Further experimentation is required to identify the appropriate varieties for individual microclimates within the state.

IMPROVING VITICULTURE PRACTICES

Given advancements in viticulture – the quality of the plantings, matching rootstock and clone type to location, and improved trellis systems – the vineyards of today are of a much higher quality than even ten years ago. Research on vine propagation and management has advanced significantly. Growers and winemakers are learning to work together to produce higher quality fruit, which is resulting in a larger variety of wines of competitive quality.

More in-state resources such as researchers, teachers, and consultants will be needed to provide growers and producers newer techniques of vineyard management that will improve profitability and sustained growth.

VINEYARD EMPLOYMENT

Winegrape production uses seasonal labor for harvests and vineyard development and with relatively few full-time positions for maintenance of currently bearing acres as well business management staff for finance, sales and other functions. The majority of Virginia vineyards are relatively small, with the owners themselves providing much of the labor.

An estimated total of 482 persons were employed by vineyards in Virginia in 2005, according to the Virginia Department of Labor and MKF Research, with wages totaling \$9.5 million.

VINEYARD DEVELOPMENT

Vineyard development is the process of converting land into a developed vineyard. The land must be prepared to plant vines. Once the vine is planted it must be trellised and trained, and, from the time a vine is planted in the ground, it can take between two and four years before the vine bears fruit. During this time, pre-productive (non-fruit bearing) vines must be tended and cared for in accordance with sound viticultural practices to ensure healthy productive (fruit bearing) vines.

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

WINEGRAPE INDUSTRY IN VIRGINIA

The vineyard development process is very capital and labor intensive, with development costs in Virginia averaging over \$10,000 per acre, excluding land acquisition costs (including all land preparation; vine layout, planting and trellising; vines; irrigation; materials and equipment; farming costs; direct and allocated overhead, utilities, property taxes, and financing costs during the pre-productive period). The per-acre development cost can be quite variable, depending on the specific location of the vineyard and planting density. The most important determinant of the cost of planting a vineyard is the vine spacing. Grape growing regions use various vine spacing based upon environmental site attributes, desired grape flavors, and development cost considerations. Regardless of the ultimate development plan selected, the investment required is significant.

Historically, Virginia Tech has advised Virginia growers to space rows about 9 feet apart and vines within each row 6 feet apart (depending on soil conditions, rootstock, and other factors), resulting in about 800 vines per acre.

In 2005, 5 full-time equivalent workers were employed in vineyard development for a total payroll of approximately \$123,000. Additional contracted labor used for vineyard development is included in vineyard labor.

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

ALLIED INDUSTRIES IN VIRGINIA

ALLIED INDUSTRIES IN VIRGINIA

This chapter discusses the impact of the wine, grape and grape juice industry on a variety of industries which either provide products or services to the wine industry or benefit directly from the presence of related facilities and services. These include: tourism, winemaking equipment, supplies and services, education and research. It estimates employment, wages and revenues and provides additional economic data where available.

TOURISM

Table 3.1

Direct Employment	714
Total Wages	\$14,238,000
Total Revenues	\$56,983,000

Tourism is a major element in the overall economic impact of wineries in Virginia. It is estimated that over 1,000,000 visitors visited Virginia wine festivals or Virginia wineries and related attractions in 2005. Supporting these visitors is a diverse labor force of over 700 employees with total wages of over \$14 million.

The estimated amount of average tourism spending per visitor to Virginia wineries is \$55. This results in an overall direct effect on the economy of tourist spending of nearly \$57 million.

WINEMAKING EQUIPMENT, SUPPLIES AND SERVICES

Table 3.2

Direct Employment:	17
Total Wages	\$745,000
Total Revenues	\$3,131,000

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

ALLIED INDUSTRIES IN VIRGINIA

The number of in-state suppliers or distributors of winemaking equipment, supplies and services is relatively small. To protect the confidentiality of included suppliers, we are consolidating the data for multiple suppliers. Types of businesses which exist in Virginia include winemaking equipment suppliers, distributors of bottles, corks, capsules, and oak barrels, a producer of wine glasses, insurance providers, mobile bottling service providers, trucking companies and sellers of vineyard equipment including tractors.

Stainless steel is a primary storage unit for grape juice and is also used during the fermentation process of wine. Some white wine can be aged in stainless steel, while red wine is often aged in wooden barrels. Steel tank prices vary widely based on capacity and tank features usually ranging from 250 to 4000 gallons. There are no manufacturing facilities for stainless steel tanks in Virginia, but there are a couple of producers with offices in Virginia.

Cooperage refers to the use of wooden barrels, usually made of oak, for the aging of wine. The average cost of a French barrel is in excess of \$800, while American barrels average \$300. There are currently no barrel makers (coopers) in Virginia, although there is a broker of barrels. Barrels are generally imported from other states or from overseas.

Wineries generally bottle and sell wine in 750ml bottles, which are packaged in bundles of 12, or “cases.” Bottling supplies consist of glass bottles, corks, capsules, labels, and cardboard boxes. Cost for a typical configuration of these supplies is around \$10/case, but can easily be in excess of \$15/case. There is a relatively new Virginia-based business which acts as a broker for these bottling supplies as well as oak barrels. This particular business is a great example of someone seeing the need to create a local business to provide services to the growing wine industry in Virginia and other Eastern states.

Virginia has a large producer of wine glasses for tasting rooms whose customers are all over the country.

There are multiple mobile bottling line businesses which provide bottling services to wineries. This is generally economical for smaller wineries as the high capital cost of bottling line equipment which is only used for a small portion of the year does not make financial sense. Virginia Tech began providing a commercial lab service in March 2006. Virginia has an insurance company which has developed some industry specialization around wineries. As the industry becomes larger, more suppliers will be attracted to serving it.

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

ALLIED INDUSTRIES IN VIRGINIA

There are multiple trucking firms which provide grape and finished wine transportation throughout the Commonwealth. Most small wineries and growers provide their own trucks and labor. Virtually all Virginia wineries store wine on premise and do not require warehousing services. Thus, warehousing is not a major factor for wineries. Distributors typically own their own warehouse facilities as well.

Vineyard equipment is generally bought locally through dealers who specialize in farming equipment but not necessary vineyard equipment.

EDUCATION AND WINE INDUSTRY RESEARCH

Historically, Virginia Tech and its Cooperative Extension have been a solid source of wine education and research, with specialists in both enology and viticulture. Unfortunately, many of the trained students take their skills to other states and regions.

Virginia Tech has been successful in aiding the Virginia wine industry, with an active applied research program designed to help Virginia winemakers. The research focuses on two overriding objectives of increasing wine quality and lowering wine cost.

Virginia Tech has also made numerous contributions to viticulture, including multiple studies on the economics of wine grape production in Virginia and throughout Eastern North America. Between professors, research associates, graduate students and co-op extension agents, there were 9 full time employees involved with education and research in Virginia in 2005.

Table 3.3

Direct Employment:	9
Total Wages	\$412,000
Research Expenditures	\$572,000

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

OTHER ECONOMIC BENEFITS

OTHER ECONOMIC BENEFITS

This chapter discusses other benefits derived from the wine industry, including tax revenues, financing revenues, charitable contributions, and other indirect and induced economic benefits not specifically addressed elsewhere in this report.

TAX REVENUES

The wine and grape industries generate 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, such as occupational taxes, licenses, and import duties.

Table 4.1
Estimated Tax Revenues

Federal tax revenues	\$15,496,000
State tax revenues	\$21,200,000

Source: IMPLAN

CHARITABLE CONTRIBUTIONS

Wineries and growers throughout the Commonwealth donated over \$300 thousand to charity in 2005, including wine, employee time and cash. For industry and non-industry alike, wine has become an increasingly attractive fundraising vehicle. The amount of charitable contributions is likely underestimated as many wineries do not track in-kind contributions, which are often substantial.

DIRECT, INDIRECT AND INDUCED EFFECTS (IMPLAN)

The wine and grape industry has ripple effects on Virginia's economy. 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 purchase of goods and services.

IMPLAN is the acronym for "IMpact analysis for PLANing." IMPLAN is a well established and widely used economic model that uses input-output analyses and tables for over 500 industries to estimate 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.

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

OTHER ECONOMIC BENEFITS

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.

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.

MEASURING THE FULL ECONOMIC IMPACT OF THE VIRGINIA WINE AND GRAPE INDUSTRY

Virginia's wine and grape industry has a "multiplier" effect, extending across the state in a broad network of economic benefits to the Commonwealth. The wine and grape industry becomes income for other workers and firms, who spend more money on other goods and services.

Table 5 tabulates the full \$362 million in economic benefit derived by Virginia from grapes, grape juice and wine industries.

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

ABOUT MKF RESEARCH

APPENDIX - ABOUT MKF RESEARCH

MKF Research 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.

MKF Research provides business advisory services to the wine industry, conducts original research on the business of wine and wine market trends and publishes a number of industry studies. MKF Research also conducts a number of industry seminars on its research work including the annual invitation-only MKF Research Executive Wine Summit and various open workshops on key industry issues.

MKF RESEARCH CUSTOM PROJECTS

The major part of MKF Research's business is providing confidential custom consulting to wine industry enterprises, investors and suppliers. Recently, MKF Research consulting projects have included:

- Feasibility and market studies for new wine industry related businesses, products and investments;
- Strategic and market analyses and market, brand and financial benchmarking;
- Economic impact studies for a variety of wine and vineyard related businesses and public and private organizations in the industry; and

MKF Research also conducts the leading research on Winery Direct Sales and Winery Direct consumers and the benchmarking of winery direct activities and has expanded its consumer and trade research capabilities to among the best in the industry.

MKF RESEARCH PUBLICATIONS

MKF Grape Trends (annual)

By combining the crush and acreage reports into one easy-to-use quick reference guide in electronic form, MKF Research's *Grape Trends* allows readers to examine the interaction of supply, price, varietal and region for California's wine grape industry. It includes a complete summary of current, past (since 1991) and projected tons, prices, and bearing acres for all major grape growing regions and counties for seven major varietals: *Chardonnay, Sauvignon Blanc, Cabernet Sauvignon, Merlot, Syrah, Zinfandel, and Pinot Noir*.

Economic Impact Reports

MKF Research LLC has completed the first study of the Impact of Wine, Grapes and Grape Products on the American Economy, for Wine America, the Wine

ECONOMIC IMPACT OF VIRGINIA WINE AND GRAPES 2005

ABOUT MKF RESEARCH

Institute, Winegrape Growers of America and the National Grape and Wine Initiative, as well as wine and grape impact studies for 11 other states. Similar studies for Tennessee and Missouri are to be completed in 2007.

Economic Impact Studies published by MKF Research LLC include the following, all available for purchase from MKF Research LLC:

- *Impact of Wine, Grapes and Grape Products on the American Economy, 2007*
- *Economic Impact of Wine and Grapes on the State of Texas 2007*
- *Economic Impact of California Wine - Update 2006*
- *Economic Impact of Wine and Winegrapes in Michigan 2005*
- *Economic Impact of Wine and Winegrapes in North Carolina 2005*
- *Economic Impact of Wine and Winegrapes in Illinois 2005*
- *Economic Impact of Pennsylvania Wine and Winegrapes 2005*
- *Economic Impact of Michigan Grapes, Grape Juice and Wine 2005*
- *Economic Impact of New York Grapes, Grape Juice and Wine 2005*
- *Economic Impact of Wine and Vineyards in Sonoma County 2005*
- *Economic Impact of Wine and Vineyards in Napa County 2005*
- *Economic Impact of California Wine 2004*
- *Economic Impact of the Washington State Wine and Winegrape Industries*

Visit our website at www.mkfresearch.com to stay informed of our new research projects.

MKF RESEARCH OWNERSHIP

MKF Research LLC is a division of Frank, Rimerman + Co. LLP, CPAs.

Frank, Rimerman + Co., LLP, founded in 1949, is the largest, locally-owned provider of accounting and consulting services in northern California. With offices in San Jose, Palo Alto, San Francisco and St. Helena and over 180 professionals, Frank, Rimerman + Co., offers strategic business and information consulting services, tax consulting and planning, audit and financial reporting, accounting services, litigation and valuation services.

Frank, Rimerman + Co. is affiliated with Baker Tilly International, an international network of high quality, independent accountancy and business services firms, all of whom are committed to providing the best possible service to their clients, in their own marketplaces, and across the world, wherever the client needs help.

Frank, Rimerman + Co. continues to build its wine industry practice, based in St Helena (formerly the CPA practice of Motto, Kryla and Fisher), committing the full resources of this major professional services firm to the industry.