THE ECONOMIC IMPACT OF PENNSYLVANIA WINE AND GRAPES

UPDATE 2007

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This study was commissioned by the **Pennsylvania Winery Association**



a division of

Frank, Rimerman + Co. LLP CPAs

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TABLE OF CONTENTS

TABLE OF CONTENTS

Highlights	3
Executive Summary	5
Juice Grapes	12
Methodology	14
About MKF Research	16

FULL ECONOMIC IMPACT OF WINE, GRAPES AND GRAPE JUICE ON THE PENNSYLVANIA ECONOMY \$2.35 Billion¹

PENNSYLVANIA WINE, GRAPES & GRAPE JUICE	ECONOMIC IMPACT
Full-time Equivalent Jobs	10,537
Wages Paid	\$472 million
Winery Revenue	\$32 million
Cases Produced	387,000
Pennsylvania Grape Value	\$21 million
Number of Wineries	114
Number of Grape Growers	230
Grape Bearing Acres	12,100
Tourism Expenditures	\$179.6 million
Number of Visitors	894,000
Taxes Paid (State and Local)	\$252.5 million

¹ See **Table 1** below.

Table 1
Total Economic Impact (Sum of Total Spending)
of Wine and Wine Grapes

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	Wine and Juice	Wine Only	Juice Only
Winery Sales	\$ 32,200,000	\$ 32,200,000	\$
Wine Grape Sales	7,033,000	7,033,000	
Juice Grape Sales	13,455,000		13,455,000
Juice Retail Sales	11,765,000		11,765,000
Juice Broker Sales	3,530,000		3,530,000
Tourism	179,604,000	179,604,000	
PLCB Sales of PA Wine	1,760,000	1,760,000	
Restaurant Sales of PA wine	466,000	466,000	
Winery Suppliers	2,880,000	2,880,000	
Printers	1,740,000	1,740,000	
Vineyard Suppliers Wine	7,563,000	1,250,000	6,313,000
Research/Education/Consulting	1,035,000	1,035,000	
Charitable Contributions	1,098,000	1,098,000	
Tax Revenues – Federal	151,405,000	53,232,000	98,173,000
Tax Revenues - State & Local	101,150,000	4,004,000	53,146,000
Indirect (IMPLAN)	1,059,192,000	201,271,000	857,921,000
Induced (IMPLAN)	301,246,000	128,325,000	172,921,000
Total Revenue	\$ 1,877,122,000	\$ 659,898,000	\$1,217,224,000

Wages:

Total Impact	\$ 2,349,543,000	\$ 870,489,000	\$ 1,479,054,000	
Total Wages	\$ 472,421,000	\$ 210,591,000	\$ 261,830,000	
Induced (IMPLAN)	96,762,000	41,219,000	55,543,000	
Indirect (IMPLAN)	254,050,000	70,547,000	183,503,000	
Wine Research/Education/Consulting	820,000	820,000		
Vineyard Suppliers	741,000	432,000	309,000	
Printers	261,000	261,000		
Winery Suppliers	432,000	432,000		
Restaurant Sales of PA wine	14,000	14,000		
PLCB Sales of PA Wine	260,000	260,000		
Tourism	69,128,000	69,128,000		
Juice Processor Employees	21,238,000		21,238,000	
Vineyard Employees	5,726,000	4,489,000	1,237,000	
Winery Employees	\$ 22,989,000	\$ 22,989,000		

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EXECUTIVE SUMMARY

The Pennsylvania wine industry has experienced increased growth in the number of wineries and increased demand of Pennsylvania wine and winegrapes. The number of bonded wineries in the state of Pennsylvania has grown from 104 in 2005 to 114 in 2007, and continuing to expand with almost all of the growth coming from the addition of small wineries – wineries producing less than 1,000 gallons per year. Wine production in Pennsylvania has grown by more than 13% over 2005 to 920 thousand gallons produced in 2007, ranking Pennsylvania as seventh in the nation in wine production.

The wine and grape industry in Pennsylvania continues to contribute to the economic strength of the state. Pennsylvania wine, winegrape and related industries have increased the total economic value to the state of Pennsylvania from approximately \$661 million in 2005 to \$870 million in 2007. When including the juicegrape industry, the total economic impact is \$2.35 billion.

Wine, winegrapes and related industries account for nearly 5,686 jobs in Pennsylvania, with an associated payroll in excess of \$210 million. The juicegrape industry adds an additional 560 persons in direct employment, 4,286 in induced and indirect employment resulting in a combined wage total of \$472 million.

EMPLOYMENT

Pennsylvania-produced wine, wine grapes, juice, juicegrapes and related industries generated 10,537 jobs across the state, for a payroll of over \$472 million.

Table 6
Total Employment –2007 Wine and Grape Related Industries

Employment	Number of Jobs
Winery	530
Vineyard	324
Juice Processors	490
Tourism	2,573
On and Off Premise Retail	8
Winery and Vineyard Supplies	25
Research/Education/Consulting	12
Indirect (IMPLAN)	4,156
Induced (IMPLAN)	2,419
Total	10,537

Sources: MKF Research, Pennsylvania Tourism and Lodging Association, Pennsylvania Restaurant Association, and Pennsylvania Liquor Control Board

Wine and winegrapes are long-term investments creating long-term employment. Newly planted vineyards need four years to produce a viable harvest for the making of premium wine. The wine making process adds another one to three years to turn those grapes into wine. Not only are these long-term investments, but they are tied to a specific region or community. Unlike manufacturing or service enterprises, vineyards and wineries are tied to the region that they are located in.

TAXES

The wine and winegrape 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 such as licenses. Pennsylvania wine, grape and allied industries paid \$101 million in state and local taxes and \$151 million in federal taxes in 2007, including over \$414 thousand in direct federal wine excise taxes.

Table 3
Estimated Tax Revenues

Tax Type	Total
Federal tax revenues	
Excise	\$ 5,159,000
Payroll	52,211,000
Income	38,006,000
Other (corporate profits, etc.)	56,029,000
Total federal tax revenues	\$ 151,405,000
State tax revenues	
Sales	\$ 29,803,000
Payroll	948,000
Income	10,841,000
Property	28,719,000
Other (dividends, licenses, fines, fees, etc.)	30,839,000
Total state tax revenues	\$ 101,150,000
Total tax revenues	\$ 252,555,000

Source: IMPLAN, MKF Research LLC

PENNSYLVANIA'S WINEGRAPE VINEYARDS

Pennsylvania vineyards' involvement with wine and winegrapes has continued over the years, and in 2007 there were an estimated 2,000 acres of vineyards in Pennsylvania producing grapes for use in wine, up from 1,800 acres in 2005. These vineyards are tended by approximately 195 growers, up from 150 in 2005. These new vineyard operations represent a continued commitment to supply a growing wine industry. In 2007 they produced 14,500 tons of winegrapes, for a total market value of \$7 million, making Pennsylvania the fifth largest producer of winegrapes in the United States. The winegrape industry in Pennsylvania is continuing to grow in value even with the lower yields of 2007.

Table 4
Pennsylvania Winegrape Crop Production and Value

Harvest Year	2003	2004	2005	2006	2007
Tons Produced	10,500	13,300	15,100	16,200	14,500
Crop Value	\$2,793,000	\$5,360,000	\$6,387,000	\$6,642,000	\$7,033,000
Increase in Crop Value		92%	19%	4%	6%
over prior year					

USDA NASS, "Pennsylvania Agricultural Statistics 2007-2008"

PENNSYLVANIA'S WINERIES

In 2007, the Pennsylvania Liquor Control Board (PLCB) reported that there were 114 licensed Limited Wineries active in the commercial production of wine within the state. This is an increase of 9.6% from 2005.

Table 5
Size Distribution of Pennsylvania Wineries

Gallons Produced	Number of Wineries	Number of Wineries
	2007	2005
Less than 1,000	37	28
1,000-4,999	34	33
5,000-9,999	15	14
10,000-19,999	14	22
20,000-29,999	7	1
30,000-39,999	1	4
40,000-69,999	6	2
Total	114	104

Pennsylvania Liquor Control Board, "Limited Winery Annual Statistics," December 31, 2007

In 2007, Pennsylvania wine makers produced approximately 387,000 cases of wine, an increase of 14% from 340,000 in 2005.

The Pennsylvania wine industry is comprised primarily of smaller wineries producing less than 20,000 gallons, or 8,400 cases, per year. This represents 88% of the wineries in the state of Pennsylvania. The larger wineries producing more than 20,000 gallons represent 12% of the industry and produce 59% of all wine produced in 2007.

In 2007, Pennsylvania was the seventh largest wine producer in the United States. The Pennsylvania wine industry continues to be successful in increasing the awareness of Pennsylvania wines. The growing number of wineries producing wine in Pennsylvania and growth in local tourism has been a strong driver of this production increase.

Table 6
Top Ten States' Annual
Gallons Bottled in 2007

			Percentage of Total
State	Production	Rank	Production
California	493,752,148	1	86.30
New York	36,557,267	2	6.39
Washington	16,681,212	3	2.92
Oregon	4,552,997	4	0.80
Texas	2,381,469	5	0.42
Indiana	1,519,730	6	0.27
Pennsylvania	1,256,894	7	0.22
Michigan	1,231,931	8	0.22
North Carolina	1,206,303	9	0.21
Florida	1,205,186	10	0.21
All Others	11,813,212		2.06

Source: TTB

TOURISM

Tourism is a major element in Pennsylvania's wine's overall economic impact. It is estimated that 894,000 tourists visited Pennsylvania wineries in 2007, a slight increase from the 877,000 reported tourist visits in 2005. Supporting these visitors is a diverse labor force of approximately 2,573 employees with total wages of over \$69 million as compared to 2,534 employees with total wages of \$62 million in 2005. The continued increase of tourist visits can be attributed to the increase in the number of wineries in Pennsylvania, providing more destinations and opportunities for visitors to experience Pennsylvania wine regions.

Given that much of their sales are direct-to-consumer, smaller wineries have focused meaningful effort on enticing consumers to come and visit their facilities. Wine tasting tours are being widely promoted with positive sales results. There has been an expansion of related-product offerings and events, private parties, and concerts held on winery properties and, thus, the winery's function has evolved past simple production. Some existing wineries have expanded their facilities to incorporate these additional revenue streams resulting in increased winery employment and support services, and increased rural economic development. Wineries being designed and built in Pennsylvania incorporate this new blend of functions with traditional facilities to take full advantage of these profitable ancillary activities.

COMMUNITY SUPPORT

Wineries and growers throughout the state of Pennsylvania have donated in excess of \$1,098,000 to charities in 2007, including gifts of wine, employee time and cash. The amount of charitable contributions is likely underestimated as many wineries do not track in-kind contributions, which are often substantial.

VINEYARD AND WINEMAKING EQUIPMENT AND SUPPLIES

The number of in-state suppliers or distributors of vineyard and winemaking equipment, supplies and services is relatively small. Many different types of small businesses exist in Pennsylvania that supply the wine and winegrape industry as a portion of their overall business. They include bottle suppliers, farming chemical providers, trucking services, label producers, tank manufactures, warehousing, and a wine lab. As the Pennsylvania wine industry continues to grow, so do the number of ancillary businesses that supply the industry.

Vineyard suppliers service both the wine and juice industries, as well as all other agricultural commodities. Vineyard suppliers provide equipment and tools such as tractors, sprayers, trellising equipment, chemicals and fertilizers for developing, producing and harvesting both winegrape and juicegrape vineyards.

Table 7
Pennsylvania Vineyard and Winemaking Suppliers

Direct Employment	25 Full Time Equivalent employees
Total Wages	\$1,434,000
Total Revenue	\$12,183,000

Source: MKF Research LLC

DIRECT SALES

According to the Pennsylvania Liquor Control Board, "Limited Winery Annual Statistics," December 31, 2007, 87% of the Pennsylvania wine sold in Pennsylvania was sold directly to the consumer, either on the winery premises or through a winery-owned outlet up from 85% in 2005. Almost 11% was sold to the PLCB for distribution within the state. A little over 1% of the wine produced in 2005 in Pennsylvania was sold or shipped by the wineries to licensed resellers, such as restaurants and hotels. The remainder, less than 2%, was sold out of state. Looking back as far as 1981, 2006 and 2007 were the first years where more wine was shipped out of state than sold to Pennsylvania restaurants and hotels.

When wineries sell their wine directly to the consumer, they receive the full retail price of the wine. When selling directly to restaurants, they receive about 80% of the full retail price. When selling to the PLCB, wineries receive approximately 50% of the full retail value. Any wines sold through licensed distributors out of state would also return just 50% of retail to the winery.

EDUCATION, CONSULTING AND WINE INDUSTRY RESEARCH

As the Pennsylvania wine and wine grape industry continues to expand, it is experiencing a growing need for trained viticulture and enology professionals specializing in the conditions found in Pennsylvania. A long-term shortage of these types of professionals within the state will constrain the ability of the wine and wine grape industry to continue its current efforts towards growth and increased product quality.

Aside from one winemaker who also hires out as a consultant to other wineries, our survey of Pennsylvania wineries did not identify any private-sector consultants for either wine grape growers or wineries. Penn State has a viticulture extension educator; funding for this individual is provided in equal part by the Pennsylvania Winery Association, Pennsylvania Association of Winegrowers, Pennsylvania Wine Marketing Research Board and Penn State. Penn State also has three other extension educators working at least part-time with people in this industry. With a total of 12 full time equivalent employees and funding and wages totaling \$820,000, education and research in the Pennsylvania wine and grape industries have a significant resource to help improve crop and product quality.

Aside from resources provided by the University and other regional colleges, wine grape growers and winemakers in Pennsylvania need to either rely upon themselves, their peers, or go out of state for the needed expertise.

The Pennsylvania Winery Association and the Pennsylvania Wine Marketing Research Board are currently supporting the creation of a curriculum for a certificate program and Association Degree program in both enology and viticulture at the Harrisburg Area Community College. The classes will be offered in an online format with scheduled lab requirements. This program is projected to offer the classes beginning in the Fall of 2010. The long-term strength of Pennsylvania's wine and grape industry will likely benefit from the development of viticulture and enology programs such as these.

PENNSYLVANIA'S JUICE GRAPE INDUSTRY

The impact of the grape juice industry on the Pennsylvania economy is estimated at \$1.479 billion.

Table 8
Economic Impact of Pennsylvania Grape Juice Industry 2007

Direct Revenue and Wages	\$ 57,847,000
Federal and State Taxes	\$ 151,319,000
Indirect and Induced Revenue and Wages	\$1,269,888,000
Total	\$1,479,054,000

Source: MKF Research LLC, IMPLAN

HISTORY

Commercial Concord grape juice grade production in the United States started in 1869 when Dr. Thomas Welch picked 40 pounds of grapes from the trellis in front of his house in New Jersey. In 1886, Charles Welch transferred the juice operation to Watkins Glen, New York and the following year to Westfield, New York. 300 tons of Concords were processed in 1897.

Welch's was sold to the National Grape Cooperative Association, Inc. in 1952 and today operates as the cooperative's processing and marketing arm. Welch's and the National Grape Cooperative moved their headquarters in 2001 from Westfield, New York to Concord, Massachusetts. The Cooperative and Welch's process grapes in all of the major Concord grape producing states, with about 60% of production originating in Pennsylvania.

Other major grape juice and grape juice processing companies with facilities in Pennsylvania include Cliffstar, one of the largest private label juice manufacturers in the United States, based in Dunkirk, New York.

Grower's Cooperative Grape Juice Company, Inc., based in Chautauqua County, is a grower-owned cooperative raising and processing Concord grapes into juice and concentrate. First organized in 1929, there are now 150 growers with 3,400 acres of Concord grapes, producing about 20,000 tons of Concord grapes each harvest season.

JUICE GRAPE PRODUCTION

Pennsylvania is the third largest producer of juice grapes in the United States. In 2007, 83,500 tons of Pennsylvania juice grapes were processed with a farm gate value of \$13.5 million. Planted acreage has actually remained relatively flat over the past six years, and production continues to be extremely variable due to the weather. Total revenue in Pennsylvania from sales of grape juice and concentrate products from Pennsylvania grapes is approximately \$11.8 million. Total national retail value of grape juice and concentrate products from Pennsylvania grapes is estimated at \$420 million.

Juice grape processing provided employment for approximately 490 persons in Pennsylvania with a payroll of \$21 million. Juice and juice product production and brokerage generated more than \$3.8 million in revenue in the state.

GRAPE VARIETIES

Concord and Niagara are the major grape varieties that are used for juice and other non-wine products.

Concords are Native American grapes while Niagara grapes were developed in 1868 in Niagara County by fertilizing Concord seeds with the white Cassady grape. Typically Concords are used for the traditional purple grape products and Niagara for white grade juice and products. Concord accounts for 88 percent of the juice grape utilization in the most recent 5 years but Niagara is growing steadily. The Lake Erie Regional Grape Program, with approximately 30,000 acres of vineyard in Pennsylvania and New York, covers the major eastern regions producing grapes for grape juice products. Erie and Chatauqua counties comprise the New York segment of this region. 98 percent of this acreage is Concord and Niagara grapes used for juice and other grape products.

Staff at Pennsylvania State and Cornell Universities provide extension support within the Lake Erie Regional Grape Program to improve yields, vines and vineyard management practices.

GRAPE PRICES

According to the Pennsylvania Agricultural Statistics 2007 Fruit Review, the average price per ton for juice grapes in Pennsylvania has remained below \$300 per ton for most of the current decade. Concord concentrate prices are now strengthening due to increased domestic and export demand as a result of the published health benefits of Concord juice, and the increasing price of competing California and imported concentrates. The average price per ton has increased from a low of \$210 in 2004 to \$245 in 2007.

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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.

DIRECT, INDIRECT AND INDUCED EFFECTS (IMPLAN)

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.

IMPLAN² 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.

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² 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 1500 organizations, including most federal, state and local organizations. For more information on IMPLAN, go to www.implan.com.

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.

A CONSERVATIVE MEASURE OF VALUE

Statistics alone do not adequately measure the intangible value the wine and juice industries bring in terms of overall enhanced quality of life, limitation of urban sprawl and greater visibility for the state of Pennsylvania 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 Pennsylvania wine and juice industries, including intangible benefits is much greater. That measure of economic impact is now \$2.35 billion within the state of Pennsylvania, for industries that are a unique partnership of nature, entrepreneurship, artistry and technology.

Pennsylvania wine, winegrape and juicegrape producers face sizable challenges to their continued growth and success. Working to support the Pennsylvania wine and juice industries and to ensure its long-term success will protect the significant benefits these industries provide to the Pennsylvania economy.

ABOUT MKF RESEARCH LLC

MKF Research LLC is the leading research source on the US wine industry. We continue to strive to raise the bar on the quality of information and analysis available to the wine industry.

MKF Research LLC provides business advisory services and custom business research for individual companies, organizations and investors.

MKF RESEARCH LLC 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 seven major varietals: *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

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

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

- Economic Impact of Wine and Winegrapes on the State of Texas 2007
- Economic Impact of Washington Grapes and Wine 2007
- Economic Impact of Wine and Grapes on the Missouri Economy 2007
- Economic Impact of Wine and Winegrapes in Tennessee 2007
- Impact of Wine, Grapes and Grape Products on the American Economy, 2007
- Economic Impact of California Wine 2006
- Economic Impact of Wine and Winegrapes in North Carolina 2005
- Economic Impact of Wine and Winegrapes in Illinois 2005
- Economic Impact of Michigan Grapes, Grape Juice and Wine 2005
- Economic Impact of New York Grapes, Grape Juice and Wine 2005

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MKF Research LLC is owned by Frank, Rimerman + Co. LLP, CPAs.

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Frank, Rimerman + Co. LLP 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.