

Analysis of Tennessee Wine and Grape Industry Trends, 2020

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Introduction

This publication presents an analysis of recent trends for the Tennessee wine and grape industries. Growth in both the wine and grape sectors has been substantial but has recently slowed. These sectors have begun to lag behind those of key neighboring states. The data for these states are also presented for purposes of comparison. The COVID-19 pandemic has important implications for the Tennessee industry. A set of policy recommendations aimed at leveling the playing field for Tennessee's wine and grape industry with that of other states, bolstering sales, and increasing production of Tennessee wines and Tennessee grapes are also made.

Growth in the Tennessee Wine Industry

Growth in the Tennessee wine industry has been substantial and pronounced over the recent past, increasing to 68 wineries by 2020 (Acampora, 2020). The number of wineries reporting covered employment has almost doubled from 23 in 2013 to 44 by the end of 2019 (**Figure 1**).¹ The level of covered and estimated total employment has also increased from 190 covered and 246 total in 2013 to 577 covered and 648 total employment by the end of 2018, increases of more than 300 percent and 263.4 percent, respectively (**Figure 2**).

However, growth in the Tennessee wine industry has begun to lag behind growth experienced by relevant neighboring states. Based on trend line analysis, we predict that Tennessee will add three wineries in 2021, while Virginia will add 12 to 13, Missouri 12, North Carolina 10, Georgia eight to nine, and Kentucky five.

¹Covered employment are jobs reported by businesses that pay into the unemployment insurance pool. This legal requirement covered most employment except self-employment and employment in certain sectors such as farming.

Growth in the Tennessee Grape Industry

Grape production has also continued to grow based on our analysis of the five-year Census of Agriculture data for Tennessee (2017) and earlier years (2007 and 2012). In terms of number of farms, a healthy growth rate has been maintained, but in terms of number of acres, growth has slowed markedly. Further, new plantings (nonbearing acres) declined from 2012 to 2017, indicating that future growth may be very slow. The average number of acres per farm has also decreased in all categories (per farm, bearing acres per farm, and nonbearing acres per farm) from 2012 to 2017. This result is concerning given that larger farm size (at least 10 acres) was found to be more financially viable in earlier budget work (Hughes, 2016).

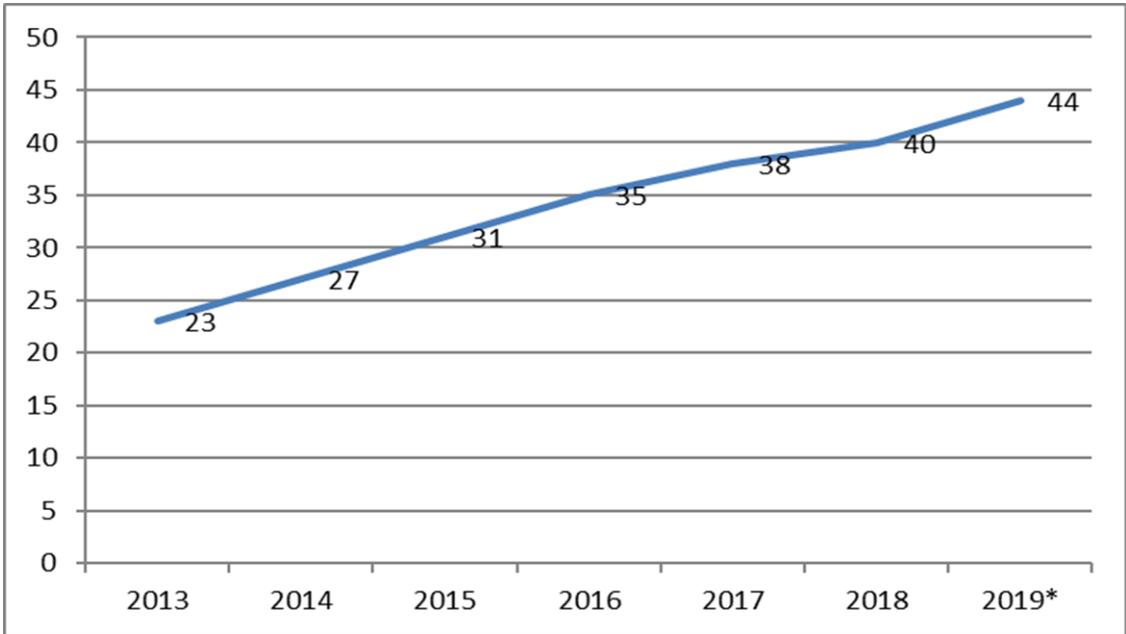


Figure 1. Number of Tennessee Wineries Reporting Covered Employment 2013-September 2019.

Source: U.S. Bureau of Labor Statistics
*Through September 30

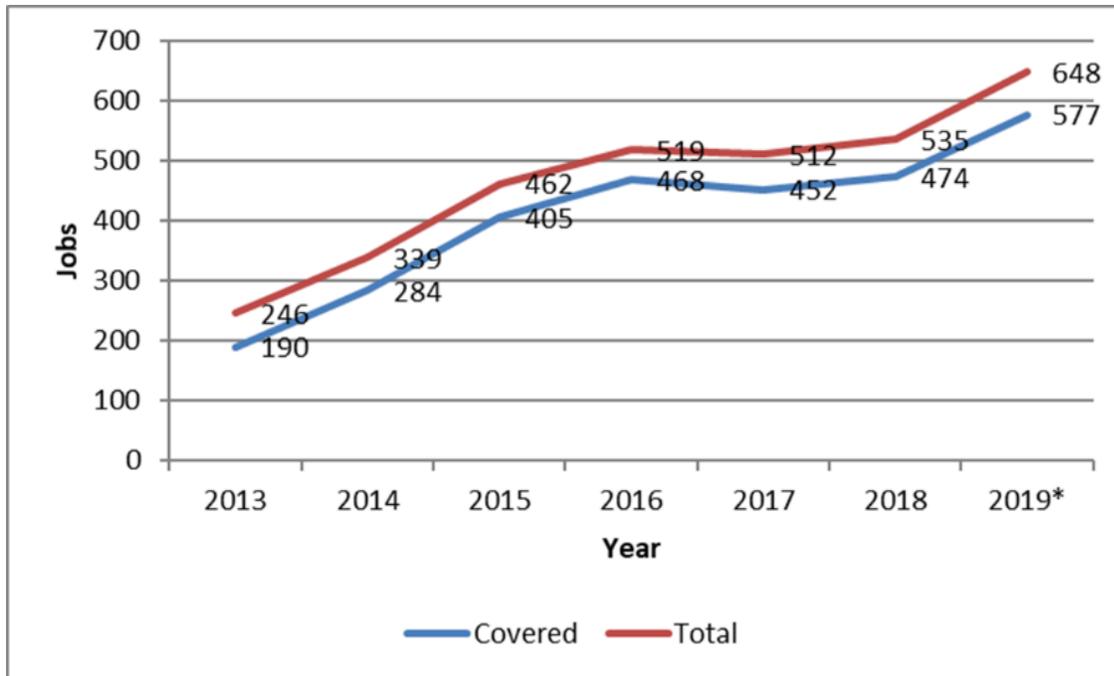


Figure 2. Tennessee Wineries Covered and Total Employment, 2013-September 2019.

Source: U.S. Bureau of Labor Statistics

*Through September 30

In 2017, 462 farms reported commercial grape acreage totaling 959 acres. Compared with 2012, the number of farms increased by 34.7 percent. However, all farms experienced a much smaller percentage of growth (6 percent) or an increase of only 54 acres (**Table 1**). Likewise, the number of bearing acres increased from 645 in 2012 to 747 in 2017, an increase of 15.8 percent, which is a much slower growth rate than 2007 to 2012 (75.7 percent). The number of farms with bearing acres increased from 237 in 2012 to 311 in 2017, an increase of 31.2 percent, which is a markedly higher increase than the 5.3 percent increase from 2007 to 2012. The growth in bearing acres declined from 75.7 percent (2007-2012) to 15.8 percent (2012-2017). An increase of 102 bearing acres from 2012 to 2017 raised the total bearing acres to 747 in 2017. The level of new planting (nonbearing) acres declined from 260 acres in 2012 to 212 acres in 2017 (-18.5 percent), with a slowdown in growth in the number of farms having nonbearing acres from 46.5 percent in the period from 2007 to 2012 to 12.2 percent from 2012 to 2017.

Table 1. Number of Farms and Acres in Tennessee Grape Production, 2007, 2012 and 2017

Category	2007	2012	2017	2007 vs 2012	2012 vs 2017
All Acres	580	905	959	56.0%	6.0%
Acres Bearing	367	645	747	75.7%	15.8%
Acres Nonbearing	213	260	212	22.1%	-18.5%
All Farms	297	343	462	15.5%	34.7%
Farms With Acres Bearing	225	237	311	5.3%	31.2%
Farms With Nonbearing Acres	129	189	212	46.5%	12.2%

Source: NASS, U.S. Census of Agriculture, 2007, 2012 and 2017.

As shown in **Table 2**, the average number of grape acres per farm, bearing acres per farm and nonbearing acres per farm all declined from 2012 to 2017. The average number of acres per farm declined from 2.64 acres in 2012 to 2.08 acres in 2017 (a 21.3 percent decline) after a marked increase in size from 2007 to 2012 (35.1 percent). The average number of bearing acres per farm decreased from 2.72 acres in 2012 to 2.4 in 2017 (-11.7 percent). The average number of nonbearing acres declined from 1.38 acres to 1 acre in the same period (-27.3 percent), reflecting a dramatic reduction in the establishment of new vineyards.

Table 2. Average Size of Tennessee Farms Growing Grapes, Total, Bearing and Nonbearing

Category	2007	2012	2017	2007 vs 2012	2012 vs 2017
Acres Per Farm	1.95	2.64	2.08	35.1%	-21.3%
Bearing Acres Per Farm	1.63	2.72	2.4	66.9%	-11.7%
Nonbearing Acres Per Farm	1.65	1.38	1	-16.7%	-27.3%

Source: NASS, U.S. Census of Agriculture, 2007, 2012 and 2017.

Analysis of Grape Data for Neighboring States

An annual survey of grape growing farms has been conducted by the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) for Georgia, Missouri, North Carolina and Virginia for several years. Inferences from this survey data provide important insights about the grape production sector in Tennessee. Furthermore, the absence of Tennessee from this survey highlights the need for similar data collection and analysis for grape farming in Tennessee.

Total bearing grape acres for Missouri, North Carolina and Virginia have shown a steady increase from 5,500 acres in 2007 to 8,485 acres in 2018 (**Figure 3**). Trendline

analysis indicates that acreage has increased at an annual rate of 271.1 acres. Trendline analysis of the NASS data versus number of wineries over time (U.S. Department of Treasury, 2020) indicates that for Georgia, one additional winery implies a 9.61 increase in Georgia grape acres; an additional winery in Missouri implies a 1.52 increase in Missouri grape acres; an additional winery in North Carolina implies a 5.53 increase in North Carolina grape acres; and an additional acre in Virginia implies an 8.73 increase in Virginia grape acres. Results from a survey of Tennessee wineries indicate that 20 percent of their fruit is sourced-in-state (Acampora). These trendline analysis results imply a positive relationship between the number of wineries and grape acres because wineries are purchasing some of their fruit in the state. However, because Tennessee wineries are only sourcing 20 percent of their fruit in state, the additional acreage per added winery is probably less than that of the neighboring states surveyed by NASS.

Average grape yields per acre have generally been within 2.5 to 3 tons per acre for Georgia, Missouri, North Carolina and Virginia from 2007 through 2017 (**Figure 4**). Total reported grape production for Missouri, North Carolina and Virginia has been around 21,000 to 24,000 tons in more recent years (**Figure 5**). Trendline analysis shows an average annual increase in production of around 572 tons for the three states from 2007 through 2017.

Prices that farmers received for their grapes are shown in **Figure 6** for Georgia, Missouri, North Carolina and Virginia. While per-ton prices received in North Carolina have tended to trend downward, prices received by farmers in Virginia have increased from \$1,400 per ton in 2007 to \$2,170 per ton in 2017. Averaged together, prices received by grape farmers in the four states have shown a slightly positive trend, increasing from \$1,076 per ton in 2002 to \$1,202 per ton in 2017, at an annual average increase of rate of \$13.62 per year (**Figure 7**). Based on our discussions with several Tennessee wineries, the projected 2018 price of \$1,216 per ton is in line with prices paid by Tennessee wineries for grapes.

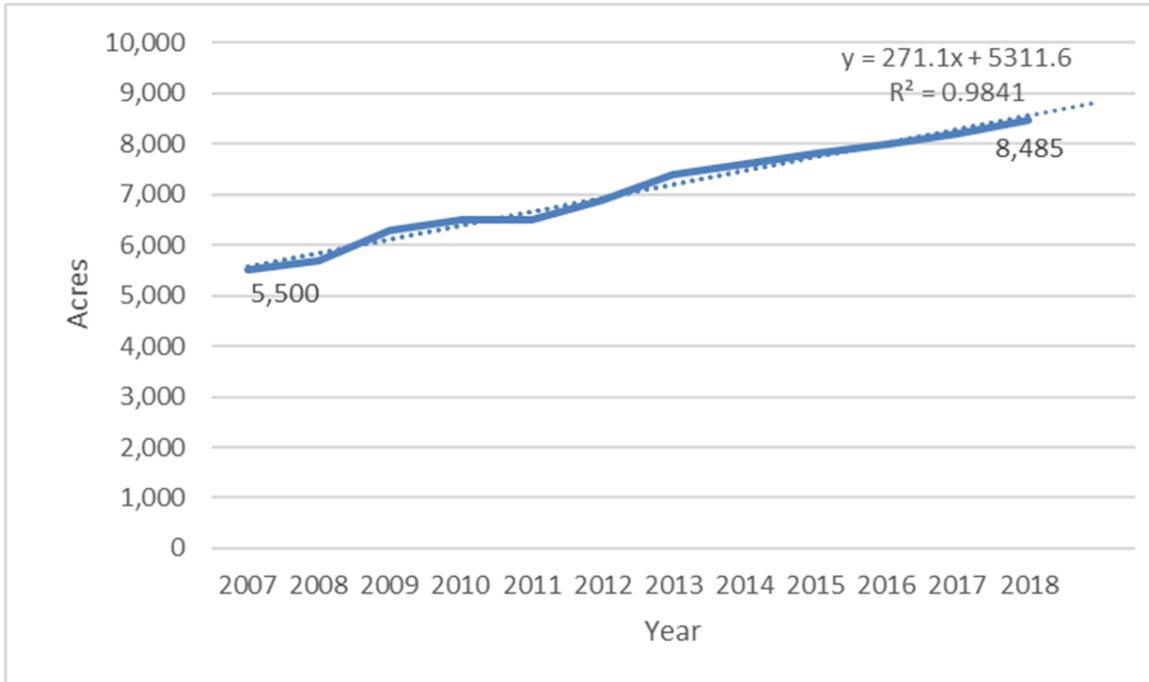


Figure 3. Total Bearing Grape Acres, Missouri, North Carolina, Virginia, 2007-2018.

Source: National Agricultural Statistics Service (NASS), 2020.

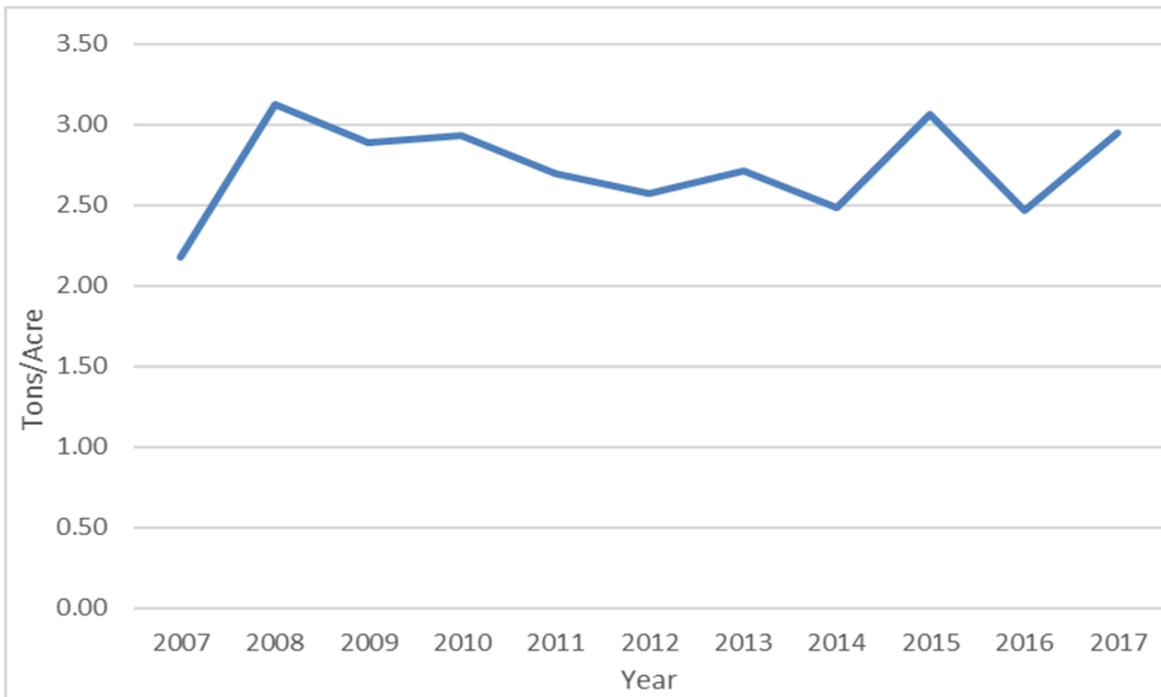


Figure 4. Average Grape Yields Per Acre, Georgia, Missouri, North Carolina, Virginia, 2007-2017.

Source: NASS, 2020.

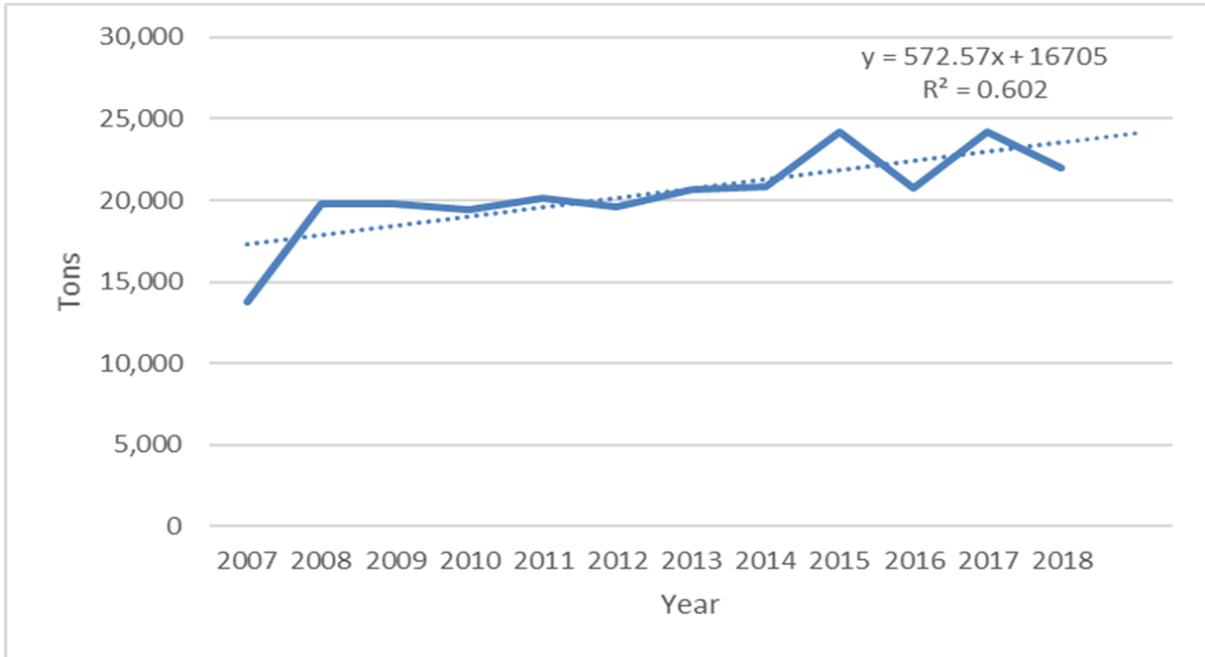


Figure 5. Total Grape Production, Missouri, North Carolina, Virginia, 2007-2018.
Source: NASS, 2020.

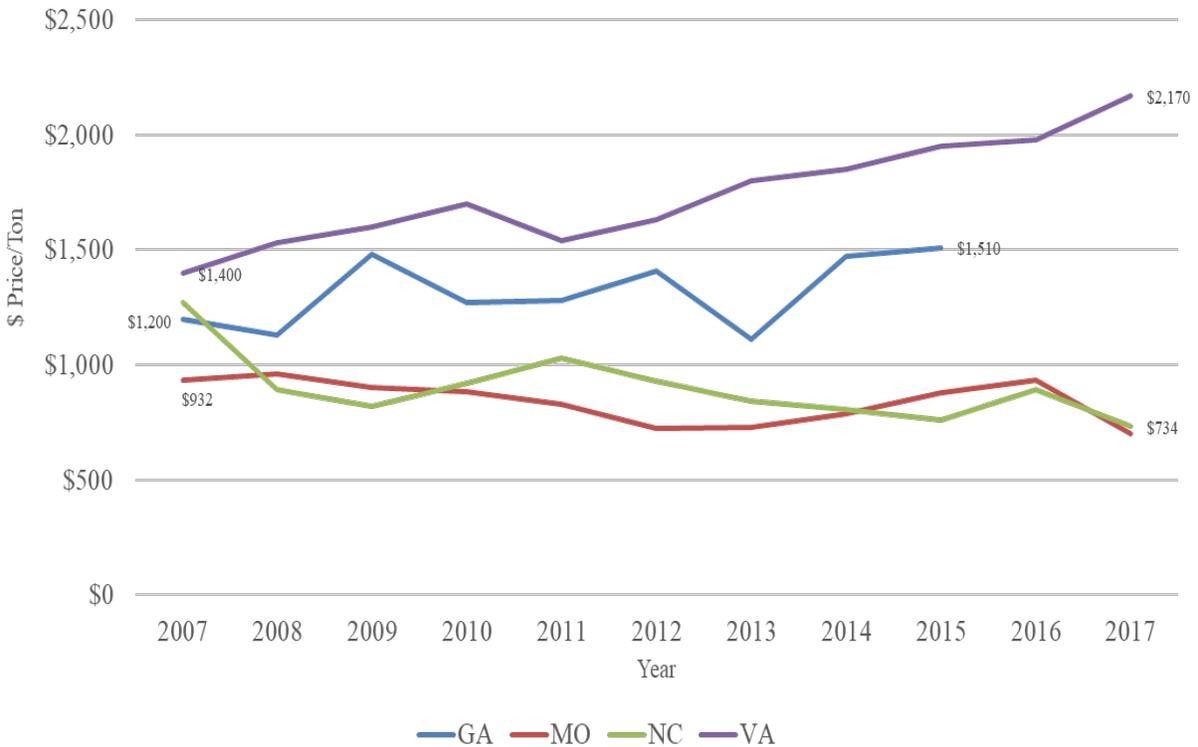


Figure 6. Grape Price Received, Neighboring States, 2007-2017.
Source: NASS, 2020.

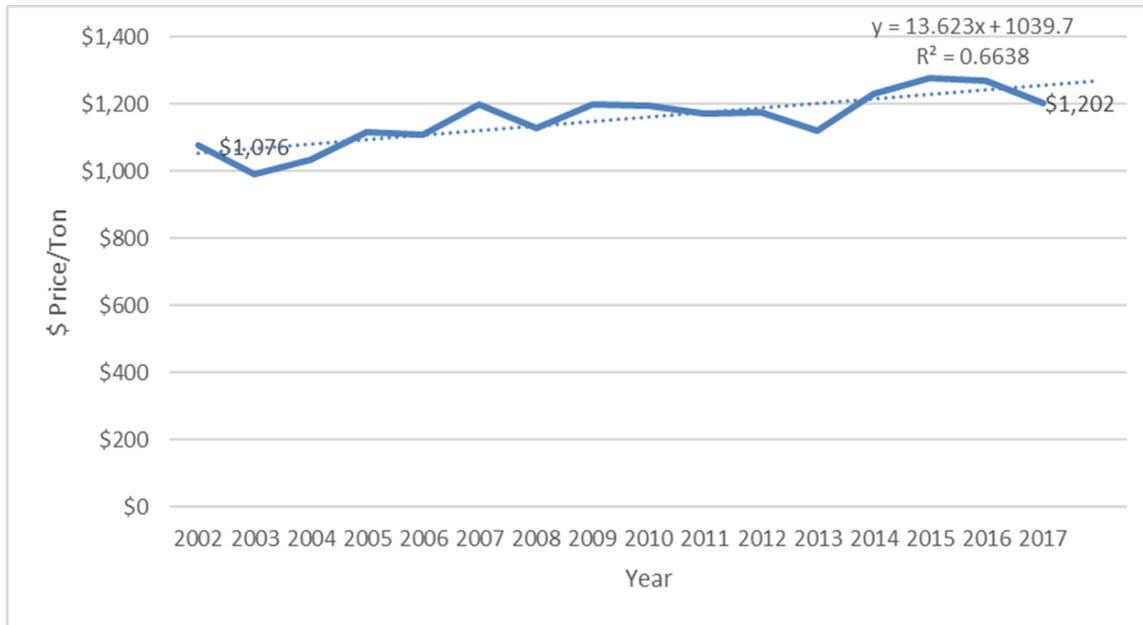


Figure 7. Average Grape Prices Received, Georgia, Missouri, North Carolina, Virginia, 2007-2017.

Source: NASS, 2020.

COVID-19 and the Wine Industry

The COVID-19 pandemic has had a major impact on the U.S. wine industry and, by inference, the Tennessee wine industry. According to one industry expert (Swindell, 2020), the U.S. industry could lose up to \$6 billion in sales due to the pandemic. Wineries that produce 1,000 to 5,000 cases annually could experience revenue loss of 47.5 percent, while those producing less than 1,000 cases annually could see a 66 percent decline in revenue. Revenue for wine grape growers could decline by 25 percent. The recent survey conducted by the Tennessee Farm Winegrowers Alliance (TFWA) (Acampora) indicated that 31 percent of respondents produced less than 1,000 cases per year, while 27 percent produced 1,000 to 5,000 cases annually. Because Tennessee wineries tend to be smaller and also tend to depend on direct sales especially to tourists, the state industry may be especially hard hit. A weekly survey being conducted of small businesses (with 1-500 workers and having a single location) indicates that for 67 percent of U.S. beverage manufacturers, the pandemic has had a large negative impact on sales for May 16-23 (2020), with an additional 30.6 percent experiencing a moderate negative effect (**Figure 8**) (Hughes, 2020). The former value is markedly higher than the counterpart level (45 percent) reported by all surveyed businesses. Our analysis of the most recently available survey data only shows slight improvements in sales for the beverage manufacturing industry nationally.

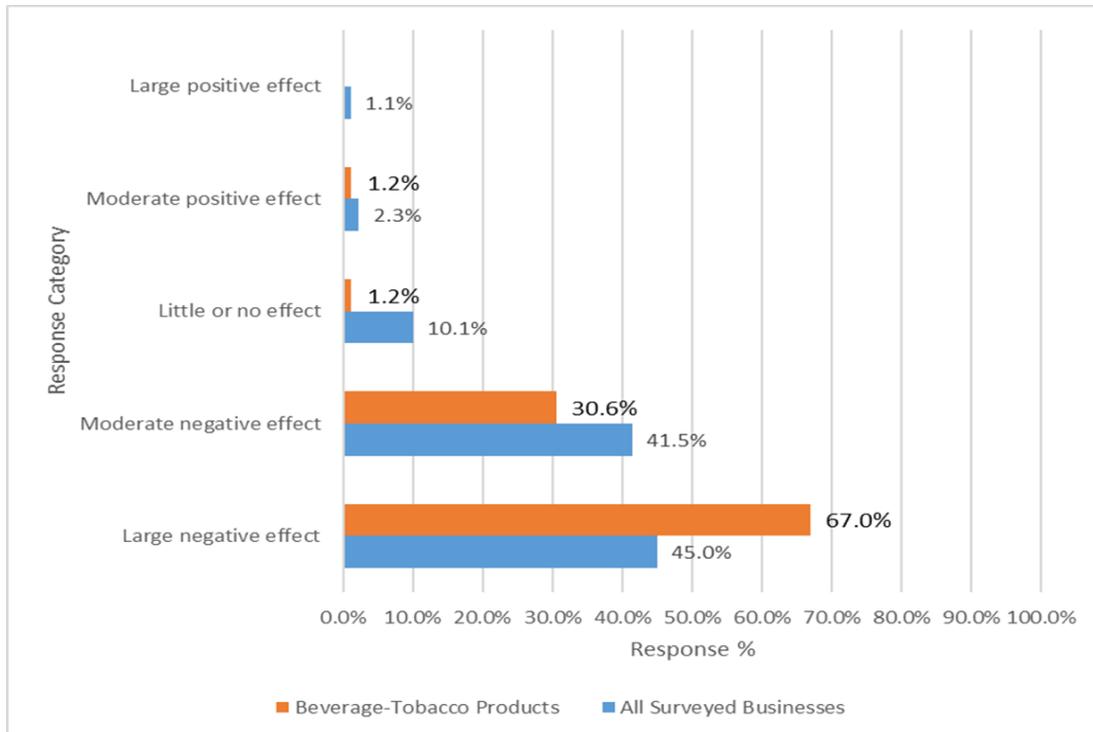


Figure 8. Effect Of COVID-19 on Sales, May 16-23, 2020, U.S. Beverage Manufacturers.

Source: (Hughes, 2020) Based on U.S. Census Bureau, Economic Pulse Survey, businesses with 1-500 workers at a single location.

Policy Recommendations

Our research indicates that the Tennessee wine and grape industry has experienced strong growth, but that growth is starting to slow and lag behind that of neighboring states. One potential reason for weaker growth compared with neighboring states may lie in excise tax rates placed on wines. According to the presentation by personnel with the TFWA (Acampora), the state excise tax rate on Tennessee wine, at \$1.21 per gallon, is markedly higher than those paid in Kentucky (\$0.50 per gallon), Missouri (\$0.42 per gallon) and North Carolina (\$1.00 per gallon). Also, in the reported period (2016-2017 fiscal year), more than \$2 million in state support was received by the Virginia wine and grape industry; the Missouri industry received \$1.9 million; North Carolina received \$500,000; and the Kentucky industry received \$400,000. In all four states, these funds are used to support marketing efforts, while in Virginia and Missouri funding also went to university research. However, in that same time period, the Tennessee wine and grape industries did not receive any similar funding.

While earlier research (Hughes, 2016; Everett et al., 2017) shows consumer interest in Tennessee wines, most consumers are not well-informed about Tennessee wines and lack the perception that Tennessee wines are always high quality in nature. Efforts to improve the quality of Tennessee wine grapes and wines could greatly benefit the industry. In addition, programs expanding consumers' awareness about Tennessee wines and marketing the state's industry could also benefit the image of Tennessee wines among consumers and enhance sales. For example, continuing efforts aimed at establishing two American Viticultural Areas (Nine Lakes and Cumberland Highlands) (Appalachian Region Wine Producers Association, 2020) can enhance the image of the state's industry and improve sales. Labeling wines based on the use of state-grown fruit is also very important (as indicated in the TFWA industry survey data). Research (Carpio and Isengildina-Massa, 2009) has demonstrated that a primary reason people support local foods is their desire to support local farmers. Research by Hughes et al. (2016) also indicates that interest in Tennessee wines is in part tied to a desire to support local farmers.

Summary and Conclusions

In summary, although Tennessee's winery industry has experienced strong growth, it appears to be lagging behind that experienced by key neighboring states. The growth in grape acreage within Tennessee is also slowing. While winery growth in the state facilitates some growth in the grape industry, there is potential for the increased use of Tennessee-grown grapes in Tennessee wines. Policy instruments, such as excise tax rates and incentives, could enhance growth in the state's industry. Furthermore, educational and other programs focused on improvement in the quality of grapes could build the share of Tennessee wine that uses Tennessee grapes. In addition, marketing programs and educational programs about wine marketing could help bring sales growth in line with that of neighboring states. Improved levels of state support and efforts to better market and improve the quality of wines and grapes in the state should aid in the growth of the state's industry and enhance its contribution to the state economy.

References

- Acampora, A. 2020. "Presentation to the Tennessee Wine and Grape Board."
Nashville, May 6.
- Appalachian Region Wine Producers Association, 2020. Online:
<http://www.ninelakeswinecountry.com/nine-lakes/arwpa/>
- Carpio, C. and O. Isengildina-Massa. 2009. "Consumer Willingness to Pay for Locally Grown Products: The Case of South Carolina." *Agribusiness, An International Journal* 25(3):412-426.

- Everett, C., K.L. Jensen, D. Hughes, and C. Boyer. 2017. "Consumer Willingness to Pay for Local Wines and Shopping Outlet Preferences." *Journal of Food Distribution Research* 48(3):31-50.
- Hughes, D.W. 2016. "Growth Prospects for the Tennessee Wine Industry: An Overview, Demand and Cost of Production-Based Analysis." University of Tennessee Extension publication, PB 1844. Report prepared for the Tennessee Farm Winemakers Alliance, the Tennessee Office of the U.S. Department of Agriculture Rural Development and the Tennessee Department of Agriculture. Available at <https://ag.tennessee.edu/cpa/CPA%20Publications/PB1844%20web.pdf>
- Hughes, D.W. 2020. "COVID-19 Impact on Activity for Smaller Agricultural Processing and Marketing Firms During May 17-23, 2020." University of Tennessee Extension publication, D101: <https://extension.tennessee.edu/publications/Documents/D101.pdf>
- Swindell, B. 2020. "U.S. Wine Industry Could Lose \$6 Billion as a Result of the Coronavirus." *The Press Democrat*. April 16. Available at <https://www.pressdemocrat.com/business/10903100-181/us-wine-industry-could-lose?sba=AAS>
- U.S. Department of Agriculture. 2015. National Agricultural Statistics Service. "Census of Agriculture, 2012, Census Volume 1, Chapter 2, State-Level Data." Available at <https://www.nass.usda.gov/Publications/AgCensus/2012/>
- U.S. Department of Agriculture. 2020. National Agricultural Statistics Service. "Census of Agriculture, 2017, Census Volume 1, Chapter 2, State-Level Data." Available at https://www.nass.usda.gov/Publications/AgCensus/2017/index.php#full_report
- U.S. Department of Agriculture. 2020. National Agricultural Statistics Service. "Grape Industry Survey Data, 2002-2017, Georgia, Missouri, North Carolina and Virginia." https://www.nass.usda.gov/Data_and_Statistics/index.php
- U.S. Department of Labor. 2020. U.S. Bureau of Labor Statistics. "Quarterly Covered Employment and Wages, 2013-2019." Available at <https://www.bls.gov/cew/downloadable-data-files.htm>
- U.S. Department of the Treasury. 2020. Alcohol and Tobacco Tax and Trade Bureau. "Number of Wineries by State, 1999-2020." Available at <https://www.ttb.gov/resources/data-statistics/wine>



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