TEXAS TECH UNIVERSITY
College *of* Human Sciences
Texas Wine Marketing Research Institute

THE ECONOMIC IMPACT OF MODEL WINERIES IN TEXAS

Industry Report

by

Pati Mamardashvili, PhD
International School of Economics at Tbilisi State University, Tbilisi, Georgia

Tim Dodd, PhD
Texas Tech University, Lubbock, Texas

Natalia Velikova, PhD
Texas Tech University, Lubbock, Texas

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INTRODUCTION

A recent report by Wine America (2017) ranks the total wine industry in Texas as the third largest in the US in terms of its total economic impact, preceded by California and New York. The report estimated that the total economic impact of the Texas wine industry is over $13 billion. Furthermore, the total Texas wine industry creates and supports 104,627 jobs, of which 60,716 are directly employed in the wine industry. The remaining jobs are generated in other industries that supply goods (production inputs) and services to the wine industry, and also include industries whose sales depend on the expenditures of workers employed both in the wine and supplier industries. Considering all types of impacts (direct, indirect and induced impacts), the wine industry within the state contributes $4,334,040,100 to total wages, with an average annual wage of $41,424 per job (John Dunham & Associates, 2017a).

In the above-mentioned report, the wine industry is defined as "wine growing, wine production, the wholesaling, retailing and direct-to-consumer sales of wine". When only considering *local grape growing and local wine production*, the economic impact figures are as follows: The wine and wine grapes industry of Texas generates around 13,000 full-time equivalent jobs and contributes around $500 million in wages. The full economic impact of wine and wine grapes on the Texas economy is estimated to be $2.27 billion (Frank, Rimerman + Co. LLP, 2017).

Regardless of the source, it is evident that the Texas wine industry has experienced a rapid growth over the last few decades. Whereas only a couple of dozen wineries operated in the state less than four decades ago, nearly 400 operate in Texas today.[1]

This fast growth comes with challenges for individual Texas wineries who must compete in an increasingly competitive business environment. Certain challenges, such as facing international and national competition, gaining leverage with high quality wines, and capitalizing on tourism related opportunities are common for all Texas wineries; however, individual wineries differ widely in regard to their size, business models, and many other characteristics. Production volume determines many business decision made by wineries; so it is an important consideration of the business model.

While there have been numerous studies on the economic impacts of the Texas wine industry[2][3], there has been very little work with respect to the impacts of individual wineries. Nonetheless, understanding these impacts is extremely vital for wineries who aspire to demonstrate to community leaders, banking organizations, politicians, and many others, the value their business has to their region. Individual communities often offer tax breaks, grants, loans and other financial assistance programs to new businesses; by providing a quantitative summary of their value to their region, wineries could capitalize on these funds.

[1] This number includes all registered G Permits and therefore all different categories of wine business operators (e.g., pure wineries, wine shops, boutique tasting rooms who do not produce or bottle, etc.). According to sales data and the suggested classification of wineries by TWGGA (https://www.txwines.org/), 286 wineries are in the category of pure wineries (producing and bottling wines). Out of them, around 30 wineries did not report sales in 2016 or 2017 (probably are new or about to close). Thus, as of August 2017 around 250 wineries produced and bottled their own wine in the State of Texas.

[2] https://www.depts.ttu.edu/hs/texaswine/reports.php

[3] http://wineamerica.org/wp-content/themes/wineamerica/pdfs/impact/reports/Texas-Report.pdf

The current report describes a research study conducted by the Texas Wine Marketing Research Institute in the fall of 2017. The goal of the study was to collect data from individual wineries in different regions of Texas and demonstrate the economic impacts and characteristics of three "*model wineries*" of different sizes.

METHODOLOGY

Data collection and definition of model wineries

After reviewing the literature (e.g., reports on state and national economic impacts of the wine industry, research studies on the Texas wine and grape industry), exploring the secondary data (e.g., wine sales data provided by the TWGGA) and meeting with several experts, the winery size categories were defined based on the production volume and the survey questionnaire was developed.

Based on expert suggestions, the size categories of wineries were defined as follows:

- **Small**: wineries producing less than 5,000 cases of wine per year
- **Medium**: wineries producing between 5,000 and 40,000 cases of wine per year
- **Large**: wineries producing more than 40,000 cases of wine per year

For each size category, several wineries located in different regions of Texas were selected for an interview. Face-to-face interviews with winery owners or representatives in various parts of Texas were conducted from September 28 to October 3, 2017.

The field survey included questions such as: the main motivation of starting the winery business, the plans for business development, the number of jobs created by the

winery, and questions on production costs and revenues from various activities (e.g., vineyard, wine production, tasting room, events).

After the field trip, the questionnaire was adjusted (incorporating insights from the interviews) and then mailed out to several other wineries. The data from the field trip and online survey were consolidated for the final analysis. To ensure confidentiality, no other parties except for the research team were given access to the data provided by the individual wineries.

In total, data were collected from 10 wineries in Texas. For each of the three identified size categories, aggregated data were used for analyzing model wineries characteristics and their potential economic impact.

Estimation of economic impact

The economic impacts typically consider generated jobs, wages and outputs. A single economic activity in one industry usually benefits several other industries. These are so-called "ripple" effects of a particular industry on the entire economy.

The economic impact studies distinguish between direct, indirect (supplier) and induced effects (John Dunham & Associates, 2017b):

- **Direct Effects**. When an activity or event in a particular industry results in production changes (e.g., producing a certain amount of wine) or in expenditures made by consumers, (e.g., purchasing certain amounts of wine, making certain wine tourism related purchases) the generated impacts (e.g., jobs, output) are considered to be a direct economic impact on the industry.

- **Indirect (Supplier) Effects.** These effects are related to local industries that provide goods and services for the main industry in question (e.g., chemicals, bottles, labels, etc.) To calculate this impact, input-output models need to be used. So-called "multipliers" are applied to an industry's direct effects to estimate indirect (supplier) contribution of the industry to the economy.
- **Induced Effects.** Re-spending of people employed in a particular industry as well as supplier industries contribute to the economy via induced effects. Examples of induced effects include: spending by workers employed in the wine and supplier industries on groceries, medical services, and insurance services, etc. The input-output models and the respective multipliers are used to estimate the induced effects of an industry.

The **total economic impact** is the sum of the direct, indirect and induced impacts. Additionally, an industry contributes to the economy with different taxes such as sale, excise and consumption taxes.[4]

Thus, the contribution of the Texas wine industry[5] is not only about its direct contribution of jobs and output to the State's economy but also includes the impact generated in supplier industries (indirect or supplier impact) as well as the spending by employees of the wine and supplier firms (induced impact).

Several tiers are considered in the estimation of the direct economic impact of wine industry. The first tier is comprised of vineyards and wineries. The second and the third tiers

[4] For more details on the estimation of economic impacts, see John Dunham & Associates (2017b).

[5] According to John Dunham & Associates (2017b), the wine industry is defined as wine growing, wine production, wholesaling, retailing, and direct-to-consumer sales of wine.

are wholesaling and retailing, respectively. Additionally, the direct economic impact of the wine industry includes the impact generated from wine-related tourism activities. For indirect effects, firms related to the wine industry, such as suppliers include the producers of machinery and materials for producing grapes and wines (e.g., fertilizers, chemicals, bottles) as well as providers of supporting services (e.g., financial, advertising, transportation, consultation, regulation) (John Dunham & Associates, 2017b).

The supplier and induced impacts are usually calculated using input-output models. Based on national input-output accounts, the IMPLAN Group, LLC developed an input-output model of the US economy. The IMPLAN model[6] is frequently used to calculate the total impacts of the wine or other industries on the US economy, both at the national and the state levels.

For this study, the recently published figures on the total economic impact of the Texas wine industry (John Dunham & Associates, 2017a) were used for estimating the economic impact of individual wineries. For calculating direct impacts, the data collected for this study were used as the starting point for the analysis. The average figures for each size category of winery was then adjusted to consider other direct contributions (e.g., retail, wholesale, and tourism[7]) as well as the indirect (supplier) and induced impacts of wineries. The sum of all three impacts provided the final estimate of the total economic impact of model wineries (small, medium, large) in Texas. Taxes related to the economic activity of

[6] http://implan.com/

[7] The necessary adjustments were made based on collected data (interviews and survey). For example, if a respondent reported 90% of their sales to be via direct-to-consumer (DTC) and only 10% via distributors (wholesale and retail), the respective share was assumed when using figures on wholesale and retail from John Dunham & Associates (2017a).

wineries were estimated using the respective figures reported in John Dunham & Associates (2017a).

RESULTS

General

Texas wineries are involved in a **wide range of activities** related to wine business. Having one or several tasting rooms, offering a venue for weddings, hosting special events, offering custom crush (for processing grapes) or providing warehouse (for storing wines) services to other wineries are among the activities in which Texas wineries diversify their business portfolio. **Wine tourism** provides a significant portion of the revenues of Texas wineries of all size categories. However, small and medium-sized wineries in particular are dependent on revenues related to touristic activities[8].

In general, the study finds that medium-sized wineries are **the most diversified** in their business activities. Although small wineries often have their niche of products and large wineries trade in large quantities (enjoying the economies of scales effects), the medium-sized wineries usually need to have a diversified business portfolio to survive in the increasingly competitive industry. For instance, medium-size wineries may offer custom crush services (on average, this service generates $2,000 per ton of processed grapes), or

[8] Experts point out that no good data exist on the number of visitors in particular areas of Texas, but various study reports rely on some anecdotal evidence and expert estimations. In the Texas Hill Country (the second fastest growing wine destination in the Unites States), the average Gillespie County wine visitor visits about two other wineries/wine shops on their trip to the County (LCRA, 2012). According to the recent by John Dunham & Associates (2017a), Texas "wine country" regions are attracting around 1.7 million tourist visits per year, contributing to local economies in annual tourism expenditures of about $717 million.

they may rent their venue for weddings (this can generate around $4,000 per wedding). These two examples are the types of activities that are of particular interest.

Almost all of the wineries interviewed have a **vineyard**. On average, around **20%** of the wine production comes from grapes grown at the wineries' owned vineyards, with the remaining grapes coming from an outside source.

On average, the surveyed wineries purchase **90%** of their grapes in **Texas**. The price of Texas grapes varies depending on the varietal and the grape quality. The average overall price for all grapes noted was between $1,500 and $2,000 per ton.

The surveyed wineries market most (85-95%) of their wines via the Direct-To-Consumer (**DTC**) channel.

Operating a **wine club** is very common (all surveyed wineries have a wine club). The wine clubs include several hundred to several thousands of members. Wine is delivered with 3 to 5 shipments (2-6 bottles each) per year. Small and medium wineries market 25%-40% of their wine (in terms of cases sold) via a wine club.

The surveyed wineries **donate** to communities in the form of wine, services, certificates for weekend stays, dinners, and tours. The donations differ with the size of the winery.

Characteristics of model wineries

Table 1 presents the characteristics of model wineries. The average numbers for each size category were used to represent each model winery.

Table 1. Characteristics of model wineries

	Small winery	Medium-size winery	Large winery
Number of jobs (winery & vineyard)	6	14	72
Total payroll ($)	240,000	410,000	2,450,000
Wine sales (in cases)	2,000	12,500	52,000
Revenues from wine sales ($)	370,000	1,900,000	7,500,000
Share of wine sales via DTC (%)	95	88	45
Sales price per bottle of wine ($)	15	13	12
Number of visitors per year	12,500	40,500	120,000
Vineyard owned (in acres)	15	15	40

Investment and spending by wineries

The initial capital investment (for all winery sizes) for wine production facilities ranges between $500,000 and $600,000. The average annual investment is $10,000, $30,000 and $240,000 for small, medium and large wineries, respectively.

The production cost per bottle of wine is between $3.00 and $4.00 per bottle. Out of this, $1.00-$1.50 is for bottles and $2.00-$2.50 is for wine production (grapes and all other inputs).

The initial capital investment in vineyards varies between $11,000 and $20,000 per acre. The average annual investment is between $360 and $780 per acre of vineyard.

Annual spending on vineyard inputs (fertilizers, pesticides, and fuel) was reported to be between $200 and $400 per acre. Additionally, an average of $1,700 per acre is spent on contracting labor (e.g., for pruning, spraying, etc.).

The initial capital investment for a tasting room was reported to be between $250,000 and $400,000.

Total economic impact of model wineries

Table 2 shows the economic impact of model wineries. For each type of impact (direct, indirect and induced), the number of jobs, wages and output are presented. The total economic impact is the sum of direct, indirect and induced impacts. The last row of Table 2 shows the total taxes (excise, sales, and consumption taxes) associated with the activities of wineries and the related sectors.

Table 2. Economic impact of wineries

	Small winery	Medium-sized winery	Large winery
Direct impact			
Jobs	29	94	1175
Wages (US$)	1,081,092	2,423,802	36,471,677
Output (US$)	1,686,895	9,515,720	59,515,943
Indirect impact			
Jobs	8	26	328
Wages (US$)	627,308	1,406,432	21,162,852
Output (US$)	1,388,079	7,830,110	48,973,312
Induced impact			
Jobs	13	42	513
Wages (US$)	833,983	1,869,798	28,135,202
Output (US$)	1,794,006	10,119,932	63,294,973
Total economic impact			
Jobs	**50**	**161**	**2025**
Wages (US$)	**2,542,383**	**5,700,050**	**85,769,730**
Output (US$)	**4,868,979**	**27,465,763**	**171,784,227**
Taxes (US$)	794,987	4,484,495	28,048,211

CONCLUSION

The roughly 400 registered wineries in the State of Texas differ widely in their size and other characteristics. In this study, three size categories - small, medium and large, were defined for further analysis. Based on the collected data and the secondary data/reports, this study estimated the total economic impact of model wineries for each size category.

The estimated total economic impact includes not only direct impacts associated with a winery but also indirect (changes in backward-linked industries) and induced (changes in household spending resulted from changes in workers income generated from both direct and indirect effects) impacts.

For each size category of winery, the estimated contribution to the economy of Texas are as follows:

- A small model winery producing approximately 2,000 cases of wine per year generates around $4,870,000 of total economic output
- A medium-sized model winery with wine production of around 12,000 cases per year contributes a total output of around $27,470,000
- A large model winery with wine production of around 50,000 cases per year contributes a total output of around $171,780,000.

In terms of job creation and respective wages, the model small, medium and large wineries contribute 50, 161 and 2,025 jobs and generate around $2,540,000, $5,700,000 and $85,770,000 in annual wages, respectively. Additionally, the small, medium and large wineries attracted around 12,500, 40,500 and 118,000 tourists per year, respectively.

Moreover, model wineries benefit the local economy with the tax revenues that they generate. Nearly $795,000, $4,484,000 and $28,050,000 of total taxes are associated with the economic activities of small, medium and large wineries, respectively.

There are many assumptions and estimates for these model wineries that were developed for this study. However, the numbers represented give a reasonable estimate of the impacts that various size wineries can produce. The study provides an individual winery with an estimate that can be adjusted based on the relative size and activities of their particular business.

REFERENCES

Frank, Rimerman + Co. LLP (2017). The Economic Impact of Wine and Wine Grapes of the State of Texas- 2015. Updated January 2017. The study commissioned by the Texas Wine and Grape Growers Association (TVGGA) in conjunction with the Texas Wine Marketing Research Institute.

John Dunham & Associates (2017a). 2017 Economic Report on Wine. Texas Report. Prepared for the National Association of American Wineries (WineAmerica) by John Dunham & Associates, New York.

John Dunham & Associates (2017b). 2017 Economic Impact Study of the Wine Industry. Methodology and Documentation. Prepared for the National Association of American Wineries (WineAmerica) by John Dunham & Associates, New York.

LCRA (2012). The Gillespie County Wine Industry. A Survey of Selected Economic Impacts. The analysis developed by LCRA's Community & Economic Development Department for the Gillespie County Economic Development Commission.