The Economic and Fiscal Impact of Alcoholic Beverage Sales in Texas: An Analysis with Emphasis on Various Representative Communities

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Introduction

Alcoholic beverage sales in Texas are governed by a complex set of local laws dividing various regions into either "wet," where alcoholic beverage sales are permitted, or "dry," where they are not. Wet areas can allow a range of options including sales only on premises (such as in restaurants) or only off premises (sold in stores for consumption elsewhere). Off-premise sales may be beer only, beer and wine only, or include distilled spirits. The fact that the wet/dry decision can be made by a county, city, or even precinct adds further complexity.

This system has evolved over many decades, and local elections to change the status (almost exclusively from dry to wet or to expand options) are quite common. A key issue in such elections is the likely effect on the economy and local tax receipts. The economic and fiscal implications of wet/dry status are notable.

The Perryman Group (TPG) was recently asked to examine the overall effects of the alcoholic beverages industry on business activity in the state of Texas. In addition, TPG developed estimates of the effects of alcoholic

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beverage sales on several representative communities of various population sizes and income levels. Because areas frequently consider types of beverages separately in various ballot initiatives, the incremental contribution of distilled spirits is independently evaluated. This report presents the findings from TPG's analysis.

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Highlights of Study Findings

Key findings from this analysis include the following:

- Business activity associated with the **alcoholic beverage industry** in Texas was found to be
  - **$36.6 billion** in total annual spending,
  - **$19.2 billion** in yearly output, and
  - more than **301,400 jobs**.

  Tax receipts to the State total $2.067 billion per year, while local governments see gains of $0.622 billion per year.

- The Perryman Group's analysis of the **distilled spirits segment** of the alcoholic beverage industry indicates that it contributes
  - almost **$10.7 billion** in spending each year,
  - **$5.6 billion** in annual output, and
  - **90,100 jobs**.

  Because of the distilled spirits industry and related economic gains, the State receives an additional $596.7 million per year in taxes, while local governments see an increment to taxes of $181.5 million per year.

- The Perryman Group found that **retail sales in wet regions are higher than in dry locales** (after adjusting for other factors such as income).

- Moreover, even when factors such as income patterns, general economic conditions, and overall retail trends are accounted for,

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TPG's analysis indicates **a statistically significant increase in retail sales following a change from dry to wet**.

- By measuring the **economic impact of the alcoholic beverage and distilled spirits segments on a representative community**, it is possible to approximate not only the current effects, but also the likely gains if such a locale elected to change from dry to wet. TPG developed three representative examples.
    - Results for a representative **small, 25,000-person community** with per-capita income 10% below the state average indicate that the net impact of sales of alcoholic beverages totals almost $19.0 million in annual spending in the local economy, $10.8 million in output, and **185 jobs**. The distilled spirits component of these effects is more than $5.8 million in annual spending, nearly $3.3 million in output, and **55 jobs**.
    - For a **town with a population of 100,000** with average incomes equal to the state as a whole, the impact of alcoholic beverage sales includes $90.1 million in annual spending, $50.8 million in output, and **863 jobs**. Distilled spirits account for $27.8 million in yearly spending, $15.5 million in output, and **264 jobs**.
    - A **community with a population of 150,000** and per-capita income levels 20% above the Texas average generates even larger effects on annual business activity of $134.1 million in spending, $79.7 million in output, and **1,366 jobs**. For distilled spirits, these effects are $43.2 million in spending each year, $25.3 million in output, and **440 jobs.**

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The Perryman Group's Perspective

TPG is an economic research and analysis firm based in Waco, Texas. The firm has more than 25 years of experience in analyzing the Texas economy and assessing the economic impact of corporate expansions, regulatory changes, real estate developments, and myriad other types of events affecting business activity. The key model used in this study, the US Multi-Regional Impact Assessment System, was developed in the early 1980s and has been continually refined, updated, and expanded since that time.

This system has been used in hundreds of public and private sector applications and enjoys an excellent reputation for accuracy and reliability. In particular, the model has played a key role in numerous major policy initiatives in Texas (including, among others, judicial reforms, trucking deregulation, electric competition, tax policy, economic development incentives, telecommunications deregulation, and transportation funding mechanisms).

TPG has conducted hundreds of impact analyses for the US and Texas economies as well as all Texas metropolitan areas, regions, and counties. Impact studies have been performed for hundreds of clients including many of the largest corporations in the world, governmental entities at all levels, educational institutions, major health care systems, public utilities, trade associations, financial entities, and economic development organizations. The firm has also completed a number of projects specifically related to the distribution and sale of alcoholic beverages, as well as numerous studies of the retail and hospitality sectors. In addition, TPG has provided ongoing forecasts of key measures of retail activity by major store category, restaurant performance, and hospitality for Texas and its regions and metropolitan areas since the early 1980s.

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The Alcoholic Beverage Industry in Texas

As noted, Texas consists of a patchwork of wet, dry, and partly wet (moist) political subdivisions made possible by local option liquor elections. Such elections have been embodied in the Texas Constitution since 1891, and governing law is set forth in the Texas Election Code and the Texas Alcoholic Beverage Code. After national prohibition of alcohol ended in 1933, political subdivisions in Texas were generally "dry" by default, and legalization of liquor sales reverted to State law under a petition-driven election process.

Counties, justice of the peace precincts, and municipalities all qualify to exercise local option elections, making the current liquor laws in Texas confusing and extensive. Not only can the political subdivision vote on whether to allow liquor sales, but also what types of liquor will be allowed to be sold and whether it can be sold on or off premises. For example, a political subdivision may distinguish between on- and off-premise sales as well as the sales of mixed beverages and beer, wine, and spirits. The result of elections over the years is a state with

- counties that are totally wet, although often differing in types of alcohol sales in various segments;
- counties that are totally dry, not allowing any alcohol sales; and
- counties that are partly wet in that some municipalities or justice of the peace precincts within the county are wet while other parts of the county are dry (at times with differences in the types of sales allowed in varying parts of the county).

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In 2003, legislation was passed to simplify procedures for getting wet/dry issues on the ballot. From 2003 to 2007, there were 214 local elections, with 81% of the propositions passing.

As of May 2008, Texas Alcoholic Beverage Commission data indicate there are 35 dry counties. Many of these are rural, and 23 of the dry counties have a population of less than 10,000. Together, these counties comprise only 1.7% of the population. Of the remaining non-dry counties, 134 are partly wet (71.7% of the population), and 85 counties are wet containing 26.6% of Texans. Most counties that allow some sale of alcohol allow for the sale of distilled spirits. Of the 134 partly-wet counties, only 15 do not allow distilled spirits sales at some locations. Of those that are wet across the entire county, only 9 do not allow distilled spirits sales.

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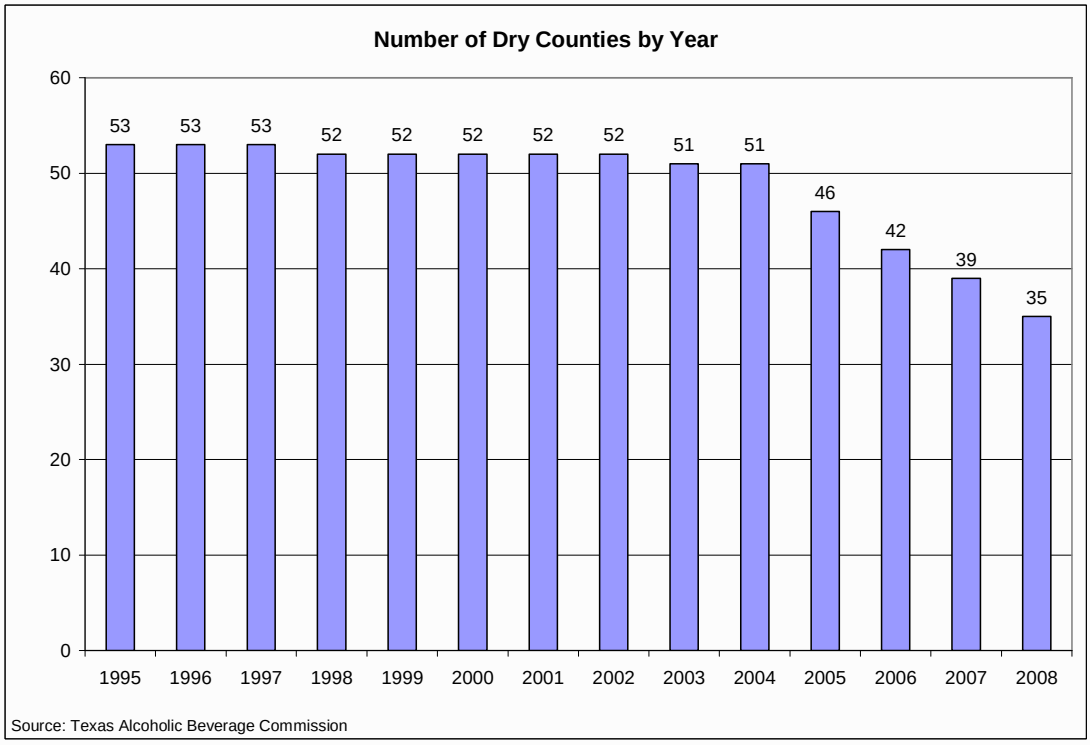

Based on the varying alcohol regulations within a political subdivision, the state collects and allocates back various taxes on alcoholic beverages. The state taxes alcohol through an excise tax on quantity sold from wholesalers to retailers, through a mixed beverage tax on mixed drinks sold to the public, and through a sales tax on all alcoholic sales to the public (except when the mixed beverage tax applies).

These taxes generate significant revenue for the state and local governments. The current Texas excise tax rate is $2.40 per gallon of liquor, 19.4 cents per gallon of beer, 20.4 cents per gallon of low wine, 40.8 cent for high wine, 51.6 for sparkling wine, and 19.8 cents per gallon of malt liquor. The mixed beverage tax is 14% (a portion of which is allocated to city and county where the sales occur). All other alcohol is taxed at the sales tax rate of up to 8.25% (6.25% to the State and up to

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2.0% for local entities). In addition, there is an airline/passenger train beverage tax which charges a 5.0% tax on drinks served while in Texas airspace or borders, although the provision generates only minimal revenue.

The funds collected through different alcohol taxes help to pay for a number of services at the state and local level. The excise tax revenue on alcohol goes into the State's General Revenue Fund. Regarding the mixed beverage tax, about 79% goes to the General Revenue Fund, and the remaining 21% is allocated back to counties and cities in which the taxpayers are located.

Alcoholic Beverages Taxes Revenue*

Source	2006 Revenue	2007 Revenue
Mixed Beverage Tax	$503,406,900.28	$550,827,343.68
Liquor Tax	$57,897,012.83	$60,762,604.21
Airline/Passenger Train Beverage Tax	$296,894.64	$325,129.19
Beer Tax	$104,418,084.20	$103,882,094.71
Wine Tax	$8,681,345.54	$9,319,869.94
Malt Liquor (Ale) Tax	$6,047,900.53	$6,560,183.26
Total Alcoholic Beverage Taxes	**$680,748,138.02**	**$731,677,224.99**

*Excluding retail sales tax
Source: Texas Annual Cash Report, Fiscal 2007, Texas State Comptroller

The State also collects revenue through permit fees and licenses for alcohol-related activity. In 2007, the Comptroller reported over $50 million in revenue from alcohol-related licenses and fees.

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Other Licenses and Fees Revenue for Alcohol-Related Activity		
Source	**2006 Revenue**	**2007 Revenue**
Liquor Permit Fees	$24,387,140.29	$22,068,073.90
License/Permit Surcharges–General	$18,184,066.13	$16,960,657.32
Wine and Beer Permit Fees	$6,325,822.75	$6,021,242.50
Brew Pub Licenses	$20,303.80	$12,725.00
Temporary Charitable Function Permit–Alcoholic Beverages	$1,525.00	$1,675.00
Alcoholic Beverage Code Money Penalty in Lieu of Cancellation or Suspension	$2,994,380.00	$3,679,641.00
Alcoholic Beverage Import Fee	$1,173,309.61	$1,213,161.68
Alcoholic Beverage Seller Training Programs	$566,018.00	$502,881.00
Alcoholic Beverage Samples and Labels Certificate of Approval	$326,475.00	$387,900.00
Alcoholic Beverage Commission Administrative Fees	$13,622.00	$139,650.00
Total Alcohol Related Fees	**$53,992,662.58**	**$50,987,607.40**

Source: Texas Annual Cash Report, Fiscal 2007, Texas State Comptroller

Size of the Industry

The alcoholic beverage industry contributes millions of direct jobs and billions of dollars in economic activity and state and local taxes in the United States. Alcoholic beverages supplement the hospitality industry, generating both increased sales revenue and jobs. Other types of businesses, such as advertising, also see increased revenue due to the industry.

Evidence from areas across the US which have extended alcoholic beverage sales indicates that additional sales revenue is the usual result.

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For example, when Idaho, Kansas, Kentucky, Louisiana, Virginia, and Washington expanded Sunday sales, hundreds of million of dollars in new retailer revenues were reported.

The **distilled spirits** segment accounts for a notable component of this activity. According to the *Distilled Spirits Council 2007 Industry Review*, the distilled spirits industry has seen 6.5% average annual revenue growth and 2.9% average annual volume growth since 2000. The distilled spirits industry contributed a combined $10.3 billion in direct federal, state, and local tax revenues in 2005.[1] National consumption of distilled spirits totaled 441,033,366 (wine gallons) for 2007, a 2.5% increase over 2006. Texas had a total consumption of 25,984,409 (wine gallons) representing a 5.2% change since 2006.[2] In terms of dollar values, approximately 33% of alcoholic beverage sales are derived from this segment.

The US **beer** industry includes in excess of 2,000 brewers and importer establishments, over 2,700 beer distributor facilities, and more than 531,000 beer selling retail establishments. Direct and indirect employment totals 1.7 million, with nearly $55 billion in wages and benefits. The beer industry in Texas provides approximately 70,000 direct jobs and over $1.9 billion in wages. The state has in excess of 36,500 retail establishments, and the beer industry supplies more than $1.8 billion in total business and personal taxes as well as another $1.1 billion in total consumption taxes. Texas ranks 14th in the nation in per-capita beer

[1] DISCUS, *Distilled Spirits Council 2007 Industry Review*, New York, January 25, 2008.
[2] DISCUS *Apparent Consumption of Distilled Spirits by State, in Wine Gallons*, December 2007, Preliminary Report.

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consumption (36.2 gallons per person 21 years or older) and 2nd in beer shipments.[3]

US total **wine** consumption continues to increase. Consumption totaled 197.5 million 9-liter cases in 1995, rising to 231.4 million in 2000 and 283.0 million in 2006.[4] According to The Nielsen Company, wine sales rose by 6.2% in 2007.[5] Per capita consumption of wine in Texas in 2006 totaled 806.6 9-liter cases per 1,000 adults, ranking the state 36th in the nation.[6] Although Texans tend to drink less wine per capita than other parts of the nation, the size of the state's population leads to a ranking among the top 10 states for total table wine consumption. In 2005, Texas consumed 12.07 millions of 9-liter cases which rose to 12.38 in 2006, an increase of 3%.[7] In 2005, the wine and grapes industry in the state contributed 8,000 full-time equivalent jobs, paid $234.6 million in wages, and provided $39 million in state and local taxes. At that time, Texas was home to 113 wineries. Since then the number of wineries has grown substantially, and there are now 170 wineries producing over 2 million gallons of wine per year.

The alcoholic beverage industry also supports many other types of business activity in the state. As demonstrated in more detail below, the sector is a sizable contributor to the Texas economy.

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[3] Beer Institute, *Shipment of Malt Beverages and Per Capita Consumption by State 2007 (Preliminary)*, May 8, 2008.
[4] Texas Wine Marketing Research Institute, *A Profile of Texas Wine and Wine Grape Industry 2007*, May 2008.
[5] Tinney, Mary-Colleen, "Retail Sales Report: Year in Review, Higher Price Points have Highest Growth, Even After Downturn in Sales," *Wine Business Monthly*, May 2008, Winebusiness.com.
[6] Texas Wine Marketing Research Institute, *A Profile of Texas Wine and Wine Grape Industry 2007*, May 2008.
[7] Texas Wine Marketing Research Institute, *A Profile of Texas Wine and Wine Grape Industry 2007*, May 2008.

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Economic Impact Results

Clearly, the alcoholic beverage industry is an important economic contributor to the US and Texas economies. In addition, the segment generates significant tax receipts. The Perryman Group quantified the magnitude of these effects as well as the potential gains in business activity and tax receipts associated with a shift from dry to wet.

Methods Used in This Analysis

The methods used in this study include dynamic input-output assessment, which essentially uses extensive survey data, industry information, and a variety of corroborative source materials to create a matrix describing the various goods and services (known as resources or inputs) required to produce one unit (a dollar's worth) of output for a given sector. Once the base information is compiled, it can be mathematically simulated to generate evaluations of the magnitude of successive rounds of activity involved in the overall production process.

The first phase of the analysis involves estimating the size of the alcoholic beverage and distilled spirits industries in Texas. Because of limitations in available data, it was necessary to utilize both a variety of information sources and a complex modeling process. Information sources included the Texas Comptroller's office, the Texas Alcoholic Beverage Commission, and various industry groups; the process for determining direct inputs is described more fully in the Appendices, which also contain

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a detailed explanation of the methods and terms used in this study (including the pertinent input-output and econometric systems).

Economic Impacts Measured

TPG analyzed the impact of the entire alcoholic beverage industry on business activity in Texas; the effects of the distilled spirits component were also quantified separately. In addition, gains in business activity that could be expected with a switch from dry to wet for a set of communities with representative characteristics were calculated.

Impact of the Entire Alcoholic Beverage Industry

TPG's estimate of the economic impact of the alcoholic beverage industry includes both on- and off-premise sales as well as manufacturing. **Business activity associated with the industry was found to include some $36.6 billion in total annual spending, $19.2 billion in yearly output, and more than 301,400 jobs.**

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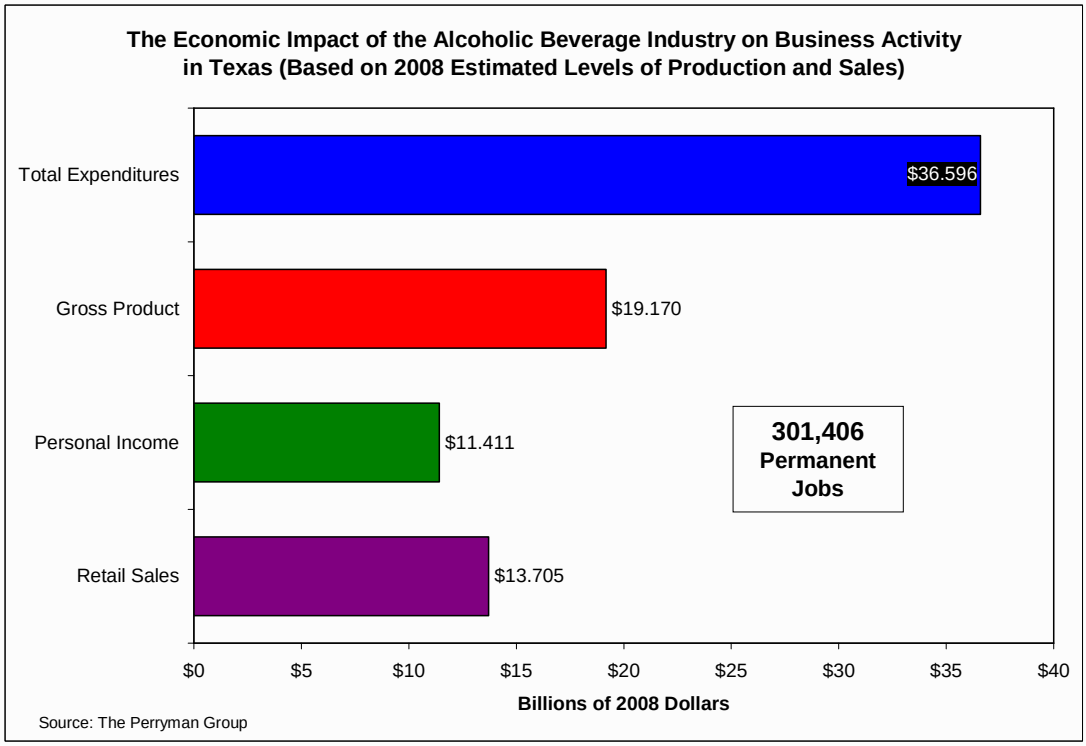

Detailed results by sector are presented in Table 1 of Appendix C.

The industry also generates a substantial level of tax revenue to the State and to local governments. There are specific taxes associated with alcoholic beverages, and the additional business activity through the economy leads to further fiscal receipts. **TPG estimated the total tax receipts to the State to include $2.067 billion per year, while local governments see gains of $0.622 billion per year.**

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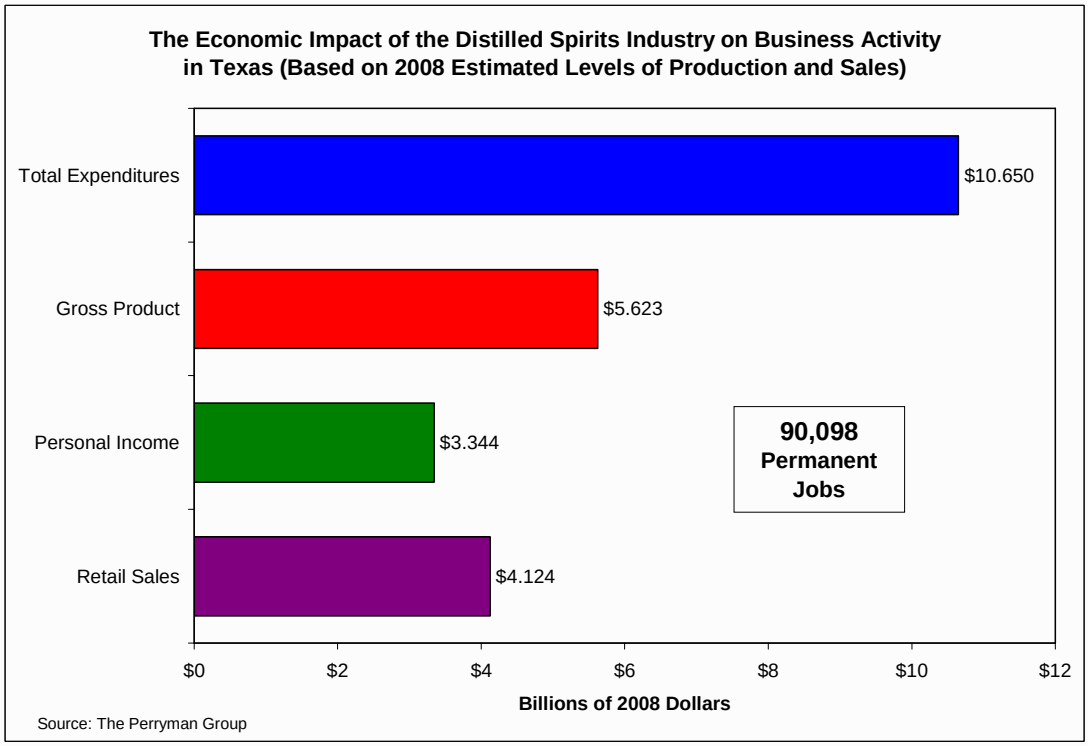
Impact of Distilled Spirits

The Perryman Group's **analysis of the distilled spirits segment of the alcoholic beverage industry indicates that it contributes almost $10.7 billion in spending each year, $5.6 billion in annual output, and 90,100 jobs.**



Results by industry are located in Table 2 of Appendix C.

The tax effects of the distilled spirits segment are also notable. **Because of the distilled spirits industry and related economic gains, the State receives an additional $596.7 million per year in taxes, while local governments see an annual increment to revenues of $181.5 million per year.**

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Representative Community Scenarios

By measuring the economic impact of the alcoholic beverage and distilled spirits segments on a representative community, it is possible to approximate the likely gains if such a locale elected to change from dry to wet. TPG developed three representative examples.

- Case I assumes a community of 25,000 persons with a per-capita income level slightly below (at 90% of) the statewide average.
- Case II is a hypothetical town of 100,000 residents with a per-capita income level equal to that of Texas.
- Case III involves 150,000 residents and a per-capita income equal to 120% of the statewide level.

The magnitude of the effects on these hypothetical areas is based on an analysis of the probable incremental sales associated with allowing the sale of alcoholic beverages.

Recent changes in policy regarding sales for some areas show a substantial gain in reported retail sales taxes the year following a passing local option alcohol election. Even when other factors such as income patterns, general economic conditions, and overall retail trends are accounted for, The Perryman Group found that there was still a statistically significant increase in retail sales following a change from dry to wet. Moreover, TPG's investigation of retail patterns in areas that are dry compared to those that are wet also revealed that retail sales in wet regions are higher than in dry locales after adjusting for other factors such as income. The approach is described more fully in the Appendices.

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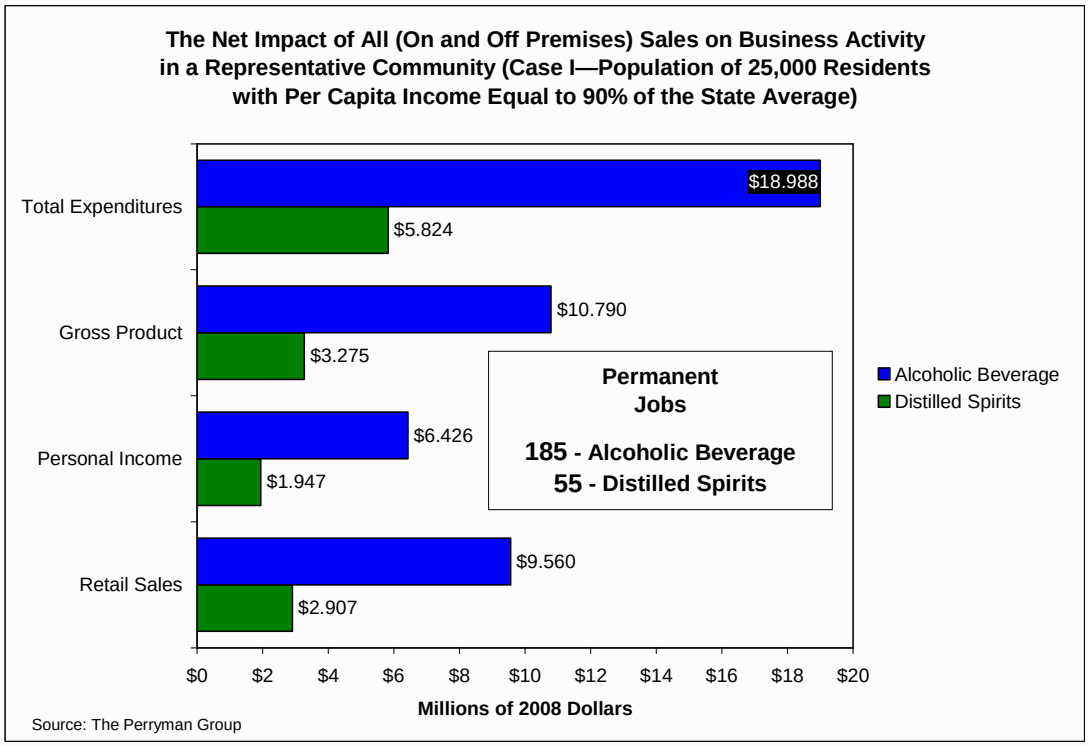
Results from the Case I (small community with per-capita income 10% below the state average) example indicate that the net impact of sales of alcoholic beverages totals almost $19.0 million in annual spending in the local economy, $10.8 million in output, and 185 jobs. The distilled spirits component of these effects is more than $5.8 million in annual spending, nearly $3.3 million in output, and 55 jobs.



See Tables 3 and 4 of Appendix C for detailed findings by industrial sector.

For Case II, a town with a population of 100,000 with average incomes equal to the state as a whole, the impact of alcoholic beverage sales includes $90.1 million in annual spending, $50.8

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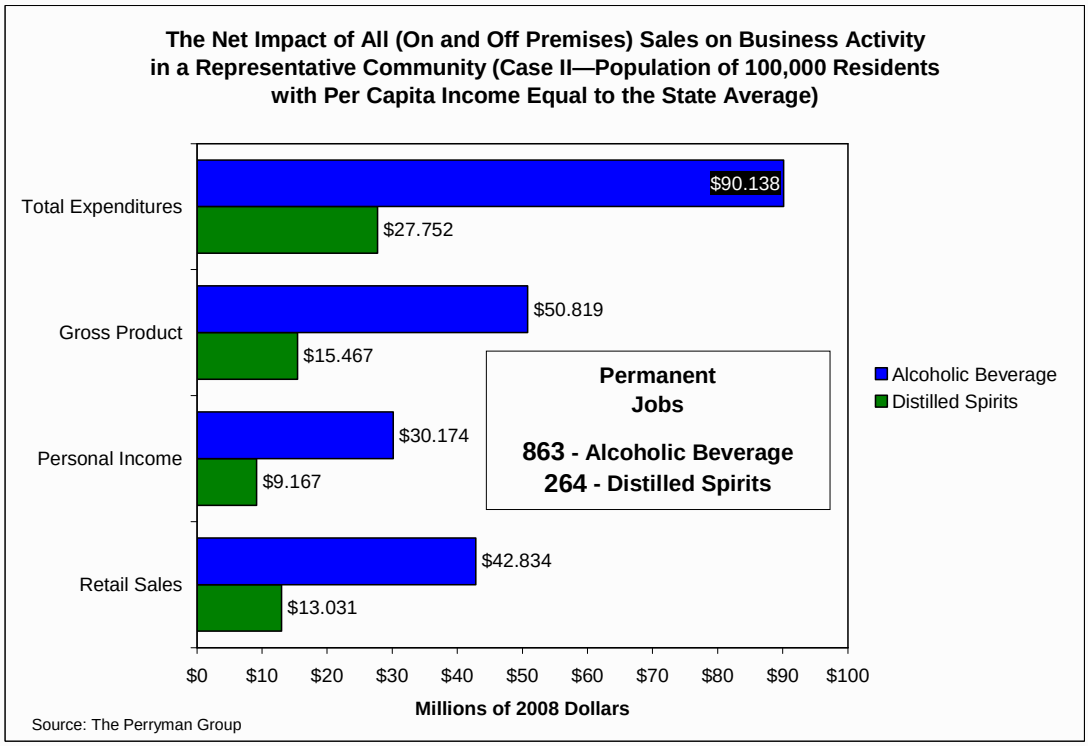
million in output, and 863 jobs. Distilled spirits account for $27.8 million in yearly spending, $15.5 million in output, and 264 jobs.



Tables 5 and 6 of Appendix C provide additional detail.

A community with a population of 150,000 and per-capita income levels 20% above the Texas average generates even larger effects on annual business activity of $134.1 million in spending, $79.7 million in output, and 1,366 jobs. For distilled spirits, these effects are $43.2 million in spending each year, $25.3 million in output, and 440 jobs.

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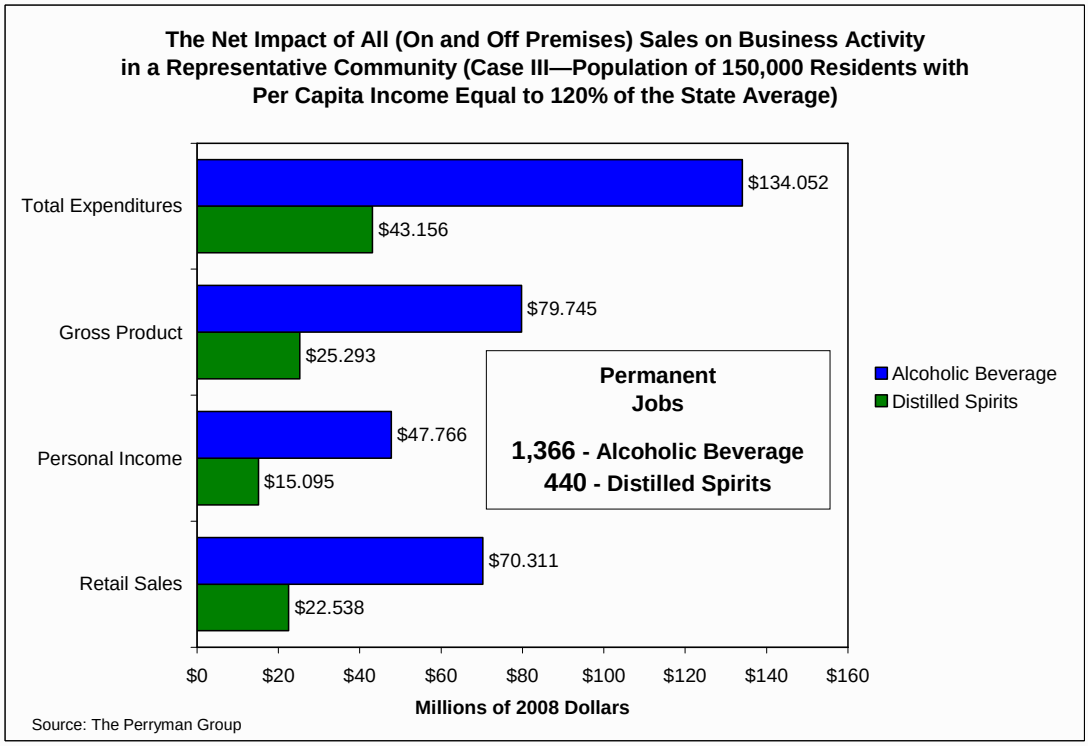

Further detail is provided in Tables 7 and 8 of Appendix C.

Fiscal Effects: Representative Cases

As noted, sales of alcoholic beverages generate notable tax revenues, both directly and through enhancing economic activity of other kinds. Using the hypothetical cases outlined above, TPG estimated fiscal effects as indicated in the following tables.

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The Fiscal Effects Associated Sales of All Alcoholic Beverages: Representative Cases			
	State Tax Receipts	**Local Tax Receipts**	**TOTAL TAX RECEIPTS**
CASE I: Community of 25,000 and Per-Capita Income Equal to 90% of the Texas Level	$1.386 million (per year)	$0.429 million (per year)	**$1.815 million (per year)**
CASE II: Community of 100,000 and Per-Capita Income Equal to 100% of the Texas Level	$6.267 million (per year)	$1.913 million (per year)	**$8.180 million (per year)**
CASE III: Community of 150,000 and Per-Capita Income Equal to 120% of the Texas Level	$10.449 million (per year)	$3.141 million (per year)	**$13.590 million (per year)**

The Fiscal Effects Associated with Distilled Spirits Sales: Representative Cases			
	State Tax Receipts	**Local Tax Receipts**	**TOTAL TAX RECEIPTS**
CASE I: Community of 25,000 and Per-Capita Income Equal to 90% of the Texas Level	$0.405 million (per year)	$0.123 million (per year)	**$0.528 million (per year)**
CASE II: Community of 100,000 and Per-Capita Income Equal to 100% of the Texas Level	$1.833 million (per year)	$0.566 million (per year)	**$2.399 million (per year)**
CASE III: Community of 150,000 and Per-Capita Income Equal to 120% of the Texas Level	$4.143 million (per year)	$0.964 million (per year)	**$5.107 million (per year)**

The Bottom Line

Clearly, sales of distilled spirits and other alcoholic beverages are a sizable source of economic activity. The industry also generates significant tax receipts.

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Other Considerations

In those areas which preclude alcoholic beverage sales, the prevailing reason tends to be concern over the associated social costs. It should be noted, however, that while dry areas do not permit the sale of alcohol, they have little or no ability to impact the consumption of alcohol. Residents of dry areas simply have to drive to a neighboring wet area to buy alcohol. Also, many cities within partly wet counties are dry, and residents can drive outside the city limits or to a neighboring city to buy alcohol. Thus, although some may see decreasing sales as protecting the area from the legitimate social problems that can occur from abuse, others view this practice as only an inconvenience for residents. Economic analysis indicates that being dry results in the loss of sales taxes and business activity for the area as residents drive to neighboring locations to spend their money on alcoholic beverages.

Clearly, there are significant issues associated with alcohol abuse, such as alcoholism, crime, and drunk driving. Nonetheless, recent statistics from the National Highway Traffic Safety Administration of the US Department of Transportation illustrate that the number of fatalities associated with alcohol-related crashes in Texas has actually decreased even as alcohol has become more available throughout the state.

Recent studies have also found that the correlation between alcohol accessibility and social problems such as accidents tends to be spurious when controlling for other measures. In fact, while the results are somewhat mixed, numerous academic papers have noted negative effects

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of county-level prohibition on social problems. (It is, of course, well known and widely documented that the national experiment with banning sales in the 1920s was ineffective). One study concluded that, when county characteristics are properly accounted for, local access results in a 4% drop in alcohol-related accidents[8], while another observed that the proportion of the population involved in such crashes was notably higher in dry areas.[9]

[8] Baughman, Reagan, et al., "Slippery When Wet: The Effects of Local Alcohol Access Laws on Highway Safety," *Journal of Health Economics* 20 (2001):1089-1096.
[9] Gary, Sarah Lynn Schulte, et al., "Consideration of Driver Home County Prohibition and Alcohol-Related Vehicle Crashes," *Accident Analysis and Prevention* 35 (2003):641-648.

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Conclusion

The alcoholic beverage industry is an important contributor to the state economy, supporting some $36.6 billion in total annual spending and more than 300,000 jobs. Within that sector, **the distilled spirits segment is also a notable source of business activity, with an estimated $10.7 billion in annual spending and in excess of 90,000 jobs.** Substantial benefits are available to areas of all sizes and income levels through the generation of such sales.

The industry is also a notable source of tax receipts, with $2.067 billion per annum to the State and $0.622 billion each year to local governments stemming from the total alcoholic beverages industry. Distilled spirits comprise a significant portion of this total ($596.7 million to the State and $181.5 million to local governments each year).

While there are certain social issues to be considered in a wet/dry decision, available evidence suggests little or no correlation between alcohol-related problems and whether an area is wet or dry (and, by some measures, even greater incidence in dry areas). **On the other hand, it is apparent that alcoholic beverage sales can be an important source of stimulus to economic activity.**

Respectfully submitted,

The Perryman Group

M. Ray Perryman, PhD, President

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APPENDICES

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APPENDIX A

Texas Econometric Model Methodology

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Texas Econometric Model Methodology

Model Logic and Structure

The economic modeling system used to generate the forecasts for future business activity in Texas is formulated in an internally consistent manner and is designed to permit the integration of relevant global, national, state, and local factors into the projection process. It is the result of more than twenty years of continuing research in econometrics, economic theory, statistical methods, and key policy issues and behavioral patterns, as well as intensive, ongoing study of all aspects of the global, US, Texas, and regional economies. The system has been continually expanded and updated over the past two decades and is widely used by thousands of corporations, utilities, governmental entities, and financial institutions. In the present instance, it is used to control for relevant factors and estimate the impact of alcoholic beverage sales.

The Texas Econometric Model revolves around a core system which projects output (real and nominal), income (real and nominal), and employment by industry in a simultaneous manner. For purposes of illustration, it is useful to initially consider the employment functions. Essentially, employment within the system is a derived demand relationship obtained from a neo-Classical production function. In other words, the need for workers in any given sector reflects the demand for the product or service they generate. The expressions are augmented to include dynamic temporal adjustments to changes in relative future input costs, output and (implicitly) productivity, and technological progress over time. The typical equation includes output, the relative real cost of labor and capital, dynamic lag structures, and a technological adjustment parameter. The functional form is generally logarithmic, thus preserving the theoretical consistency with the neo-Classical formulation.

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The income segment of the model is divided into wage and non-wage components. The wage equations, like their employment counterparts, are individually estimated at the three-digit North American Industry Classification System (NAICS) level of aggregation. Hence, income by place of work is measured for approximately 90 distinct production categories. The wage equations measure real compensation, with the form of the variable structure differing between “basic” and “non-basic.”

The basic industries, comprised primarily of the various components of Mining, Agriculture, and Manufacturing, are export-oriented, i.e., they bring external dollars into the area and form the core of the economy. The production of these sectors typically flows into national and international markets; therefore, the labor markets are influenced by conditions in areas beyond the borders of the particular region. Thus, real (inflation-adjusted) wages in the basic industry are expressed as a function of the corresponding national rates, as well as measures of local labor market conditions (such as the reciprocal of the unemployment rate), dynamic adjustment parameters, and ongoing trends.

The non-basic sectors are somewhat different in nature, as the strength of their labor markets is linked to the health of the local export sectors. Consequently, wages in these industries are related to those in the basic segment of the economy. The relationship also includes the local labor market measures contained in the basic wage equations.

Note that compensation rates in the export or basic sectors provide a key element of the interaction of the regional economies with national and international market phenomena, while the non-basic or local industries are strongly impacted by area production levels. Given the wage and

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employment equations, multiplicative identities in each industry provide expressions for total compensation; these totals may then be combined to determine aggregate wage and salary income. Simple linkage equations are then estimated for the calculation of personal income by place of work.

The non-labor aspects of personal income are modeled at the regional level using straightforward empirical expressions relating to national performance, dynamic responses, and evolving temporal patterns. In some instances (such as dividends, rents, and others), national variables (for example, interest rates) directly enter the forecasting system. These factors have numerous other implicit linkages into the system resulting from their simultaneous interaction with other phenomena in national and international markets which are explicitly included in various expressions.

The output or gross area product expressions are also developed at the three-digit NAICS level. Regional output for basic industries is linked to national performance in the relevant industries, local and national production in key related sectors, relative area and national labor costs in the industry, dynamic adjustment parameters, and ongoing changes in industrial interrelationships (driven by technological changes in production processes).

Output in the non-basic sectors is modeled as a function of basic production levels, output in related local support industries (if applicable), dynamic temporal adjustments, and ongoing patterns. The inter-industry linkages are obtained from the input-output (impact assessment) system which is part of the overall integrated modeling structure maintained by The Perryman Group. Note that the dominant component of the econometric system involves the simultaneous estimation and projection of output, income, and employment at a disaggregated industrial level.

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Several other components of the model are critical to the multi-regional forecasting process. The demographic module includes (1) a linkage equation between wage and salary (establishment) employment and household employment, (2) a labor force participation rate function, and (3) a complete age-cohort-survival population system with endogenous migration. Given household employment, labor force participation (which is a function of economic conditions and evolving patterns of worker preferences), and the working age population (from the age-cohort-survival model), the unemployment rate and level become identities.

The population system uses Census information, fertility rates, and life expectancy tables to determine the "natural" changes in population by age group. Migration, the most difficult segment of population dynamics to track, is estimated in relation to relative regional and extra-regional economic conditions over time. Because evolving economic conditions determine migration in the system, population changes are allowed to interact simultaneously with overall economic conditions.

Retail sales is related to income, interest rates, dynamic adjustments, and patterns in consumer behavior on a store group basis. Inflation at the state level relates to national patterns, indicators of relative economic conditions, and ongoing trends.

A final significant segment of the forecasting system relates to real estate absorption and activity. The short-term demand for various types of property is determined by underlying economic and demographic factors, with short-term adjustments to reflect the current status of the pertinent building cycle. In some instances, this portion of the forecast requires

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integration with the Multi-Regional Industry-Occupation System which is maintained by The Perryman Group.

The Texas Econometric Model contains numerous additional specifications, and individual expressions are modified to reflect alternative lag structures, empirical properties of the estimates, simulation requirements, and similar phenomena. Moreover, the system is continually updated to reflect new data and evolving empirical relationships. Nonetheless, the above synopsis offers a basic description of the overall structure and underlying logic of the system.

Model Simulation and Multi-Regional Structure

The initial phase of the simulation process is the execution of a standard non-linear algorithm for the state system and that of each of the individual subareas (regions, metropolitan statistical areas, and counties). The external assumptions are derived from scenarios developed through national and international models and extensive analysis by The Perryman Group. In this instance, the national models, which reflect similar underlying logic but are not as complete, were used to drive some of the projections. These results were compared with those of other major models for overall reasonableness.

Once the initial simulations are completed, they are merged into a single system with additive constraints and interregional flows. Using information on minimum regional requirements, import needs, export potential, and locations, it becomes possible to balance the various forecasts into a mathematically consistent set of results. This process is, in effect, a disciplining exercise with regard to the individual regional (including metropolitan and rural) systems. By compelling equilibrium across all regions and sectors, the algorithm ensures that the patterns in state

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activity are reasonable in light of smaller area dynamics and, conversely, that the regional outlooks are within plausible performance levels for the state as a whole.

The iterative simulation process has the additional property of imposing a global convergence criterion across the entire multi-regional system, with balance being achieved simultaneously on both a sectoral and a geographic basis. This approach is particularly critical in non-linear dynamic systems, as independent simulations of individual systems often yield unstable, non-convergent outcomes.

It should be noted that the underlying data for the modeling and simulation process are frequently updated and revised by the various public and private entities compiling them. Whenever those modifications to the database occur, they bring corresponding changes to the structural parameter estimates of the various systems and the solutions to the simulation and forecasting system. The multi-regional version of the Texas Econometric Model is automatically re-estimated and simulated with each such data release, thus providing a constantly evolving and current assessment of state and local business activity.

The Final Forecast

The process described above is followed to produce the preliminary forecast. Through the comprehensive multi-regional modeling and simulation process, a systematic analysis is generated which accounts for both historical patterns in economic performance and inter-relationships and best available information on the future course of pertinent external factors. While the best available techniques and data are employed in this effort, they are not capable of directly capturing “street sense,” i.e., the contemporaneous and often non-quantifiable information that can

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materially affect economic outcomes. In order to provide a comprehensive approach to the prediction of business conditions, it is necessary to compile and assimilate extensive material regarding current patterns both across the state of Texas and elsewhere.

This critical aspect of the forecasting methodology includes activities such as (1) daily review of hundreds of financial and business publications and electronic information sites; (2) review of all major newspapers in the state on a daily basis; (3) dozens of hours of direct telephone interviews with key business and political leaders in all parts of the state; (4) face-to-face discussions with representatives of major industry groups; and (5) frequent site visits to the various regions of the state. The insights arising from this "fact finding" are analyzed and evaluated for their effects on the likely course of future activity.

Another vital information resource stems from the firm's ongoing interaction with key participants in the international, domestic, and state economic scenes. Such activities include visiting with corporate groups on a regular basis and being consistently involved in the policy process at all levels. The firm is also an active participant in many major corporate relocations, economic development initiatives, and regulatory proceedings.

Once organized, this information is carefully assessed and, when appropriate, independently verified. The impact on specific communities and sectors that is distinct from what is captured by the econometric system is then factored into the forecast analysis. For example, the opening or closing of a large facility, particularly in a relatively small area, can cause a sudden change in business performance that will not be

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accounted for by either a modeling system based on historical relationships or expected (primarily national and international) factors.

The final step in the forecasting process is the integration of this material into the results in a logical and mathematically consistent manner. In some instances, this task is accomplished through “constant adjustment factors” which augment relevant equations. In other cases, anticipated changes in industrial structure or regulatory parameters are initially simulated within the context of the Texas Multi-Regional Impact Assessment System to estimate their ultimate effects by sector. Those findings are then factored into the simulation as constant adjustments on a distributed temporal basis. Once this scenario is formulated, the extended system is again balanced across regions and sectors through an iterative simulation algorithm analogous to that described above.

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APPENDIX B

US Multi-Regional Impact Assessment System Methodology

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US Multi-Regional Impact Assessment System Methodology

The basic modeling technique employed in assessing the economic effects of the alcoholic beverages industry is known as dynamic input-output analysis. This methodology essentially uses extensive survey data, industry information, and a variety of corroborative source materials to create a matrix describing the various goods and services (known as resources or inputs) required to produce one unit (a dollar's worth) of output for a given sector. Once the base information is compiled, it can be mathematically simulated to generate evaluations of the magnitude of successive rounds of activity involved in the overall production process.

There are two essential steps in conducting an input-output analysis once the system is operational. The first major endeavor is to accurately define the levels of direct activity to be evaluated. The second step is the simulation of the input-output system to measure overall economic effects. In the case of a prospective evaluation, it is necessary to first calculate reasonable estimates of the direct activity.

As noted in the report, available data was characterized by notable limitations, and the initial phases of this analysis involved a sizable data-gathering effort including public and private sources such as

- The Texas Comptroller of Public Accounts;
- Industry groups;
- The Texas Alcoholic Beverage Commission; and
- Prior academic research.

Even when available information was assembled, a notable modeling effort was required to convert the series into suitable inputs. Data on

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effective (weighted) excise tax rates by type of alcohol for Texas (which can be determined from data maintained by the Texas Alcoholic Beverage Commission) permitted a calculation of gallons consumed for Texans (which was quite similar to (slightly below) external information available with regard to distilled spirits). Once these implied consumption levels were calculated, they were compared to market consumption by volume. When combined with US data in "market share" in monetary terms, it became possible to derive an algorithm to reasonably approximate the share of each category (liquor, beer/ale, and wine) of alcoholic beverage sales within the state in dollars, which was then converted into constant (2008) dollars using price index projections from the Texas Econometric Model with a linkage to supplier cost changes maintained by industry sources.

Similarly, data on US consumption by value and volume in on- and off-premise locations allowed the development of a second computational mechanism to evaluate overall sales in Texas in a plausible manner. With these monetary market shares by beverage category and outlet segment (on or off premises) being developed, a single monetary value of one component yields sufficient information to impute the others. Information regarding mixed beverage tax revenues, which is a uniform rate applied to all such sales, allows the sales of distilled spirits (liquor) in on-premise outlets to be determined, thus facilitating the relevant estimates (the Comptroller of Public Accounts provided the breakout of mixed beverage receipts by type of beverage). For purposes of the impact system simulations, the off-premises values were classified as retail sales, while the on-premises were reasonably allocated between eating and drinking and hospitality. Restaurant sales had to be estimated using the process described above in that beer/ale and wine sold in on-premises locations

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without a mixed beverage license are not captured in the mixed beverage tax receipts.

The second set of data for simulation in the study was the manufacture of alcoholic beverages (essentially beer and wine) within Texas; data on employment and income in these designated sectors were obtained from the US Department of Commerce.

The second major task involved the indirect incremental activity associated with the passage of a “wet” initiative. Data reflecting “before and after” patterns across several communities of varying size were available to calculate the incremental retail sales occurring as a result of implementation. The resulting gains were adjusted to control for other factors (such as overall economic growth over the relevant period) using information derived from the Texas Econometric Model.

On average, a sales stimulus attributable to alcoholic beverage sales of about 6.3% was observed. The value is consistent with academic studies, which reveal a gain from greater accessibility of 6.0% -7.4%. Another empirical approach involved classifying each county in Texas according to wet/dry status and taxable retail sales (adjusted for size and economic characteristics). This exercise also revealed an impact of about 6.0%. This process also allowed the calculation of the contribution of varying components of beverages sales as well. The addition of distilled spirits added an increment slightly greater than its market share. In the interest of conservatism in the estimates, however, the lower value was utilized.

The next step in the process involved the definition of representative areas. Because multipliers tend to be lower in small areas due to reduced opportunities for value capture in collateral sectors, TPG used actual

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submodels from regions which approximated the characteristics of each hypothetical community in conducting the simulations.

Once the direct input values were determined, the present study was conducted within the context of the US Multi-Regional Impact Assessment System (USMRIAS) which was developed and is maintained by The Perryman Group. This model has been used in hundreds of diverse applications across the country and has an excellent reputation for accuracy and credibility. In addition, the model has been in operation and continually updated for over two decades. The systems used in the current simulations reflect the unique industrial structures of Texas and the representative communities.

The USMRIAS is somewhat similar in format to the Input-Output Model of the United States and the Regional Input-Output Modeling System, both of which are maintained by the US Department of Commerce. The model developed by TPG, however, incorporates several important enhancements and refinements. Specifically, the expanded system includes (1) comprehensive 500-sector coverage for any county, multi-county, or urban region; (2) calculation of both total expenditures and value-added by industry and region; (3) direct estimation of expenditures for multiple basic input choices (expenditures, output, income, or employment); (4) extensive parameter localization; (5) price adjustments for real and nominal assessments by sectors and areas; (6) measurement of the induced impacts associated with payrolls and consumer spending; (7) embedded modules to estimate multi-sectoral direct spending effects; (8) estimation of retail spending activity by consumers; and (9) comprehensive linkage and integration capabilities with a wide variety of econometric, real estate, occupational, and fiscal impact models. The

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models used for the present investigation have been thoroughly tested for reasonableness and historical reliability.

As noted earlier, the impact assessment (input-output) process essentially estimates the amounts of all types of goods and services required to produce one unit (a dollar's worth) of a specific type of output. For purposes of illustrating the nature of the system, it is useful to think of inputs and outputs in dollar (rather than physical) terms. As an example, the construction of a new building will require specific dollar amounts of lumber, glass, concrete, hand tools, architectural services, interior design services, paint, plumbing, and numerous other elements. Each of these suppliers must, in turn, purchase additional dollar amounts of inputs. This process continues through multiple rounds of production, thus generating subsequent increments to business activity. The initial process of building the facility is known as the *direct effect*. The ensuing transactions in the output chain constitute the *indirect effect*.

Another pattern that arises in response to any direct economic activity comes from the payroll dollars received by employees at each stage of the production cycle. As workers are compensated, they use some of their income for taxes, savings, and purchases from external markets. A substantial portion, however, is spent locally on food, clothing, healthcare services, utilities, housing, recreation, and other items. Typical purchasing patterns in the relevant areas are obtained from the *ACCRA Cost of Living Index*, a privately compiled inter-regional measure which has been widely used for several decades, and the *Consumer Expenditure Survey* of the US Department of Labor. These initial outlays by area residents generate further secondary activity as local providers acquire inputs to meet this consumer demand. These consumer spending impacts are known as the

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induced effect. The USMRIAS is designed to provide realistic, yet conservative, estimates of these phenomena.

A fiscal model appended to the USMRIAS was also employed. This system reflects the specific characteristics of all forms of state and local taxation in Texas, including various beverage levies.

Sources for information used in this process include the Bureau of the Census, the Bureau of Labor Statistics, the Regional Economic Information System of the US Department of Commerce, and other public and private sources. The pricing data are compiled from the US Department of Labor and the US Department of Commerce. The verification and testing procedures make use of extensive public and private sources. Note that all monetary values, unless otherwise noted, are given in constant (2008) dollars to eliminate the effects of inflation.

The USMRIAS generates estimates of the effect on several measures of business activity. The most comprehensive measure of economic activity used in this study is **Total Expenditures**. This measure incorporates every dollar that changes hands in any transaction. For example, suppose a farmer sells wheat to a miller for $0.50; the miller then sells flour to a baker for $0.75; the baker, in turn, sells bread to a customer for $1.25. The Total Expenditures recorded in this instance would be $2.50, that is, $0.50 + $0.75 + $1.25. This measure is quite broad, but is useful in that (1) it reflects the overall interplay of all industries in the economy, and (2) some key fiscal variables such as sales taxes are linked to aggregate spending.

A second measure of business activity frequently employed in this analysis is that of **Gross Product**. This indicator represents the regional

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equivalent of Gross Domestic Product, the most commonly reported statistic regarding national economic performance. In other words, the Gross Product of, say, Amarillo is the amount of US output that is produced in that area. It is defined as the value of all final goods produced in a given region for a specific period of time. Stated differently, it captures the amount of value-added (gross area product) over intermediate goods and services at each stage of the production process, that is, it eliminates the double counting in the Total Expenditures concept. Using the example above, the Gross Product is $1.25 (the value of the bread) rather than $2.50. Alternatively, it may be viewed as the sum of the value-added by the farmer, $0.50; the miller, $0.25 ($0.75 - $0.50); and the baker, $0.50 ($1.25 - $0.75). The total value-added is, therefore, $1.25, which is equivalent to the final value of the bread. In many industries, the primary component of value-added is the wage and salary payments to employees.

The third gauge of economic activity used in this evaluation is **Personal Income**. As the name implies, Personal Income is simply the income received by individuals, whether in the form of wages, salaries, interest, dividends, proprietors' profits, or other sources. It may thus be viewed as the segment of overall impacts which flows directly to the citizenry.
The fourth measure, **Retail Sales**, represents the component of Total Expenditures which occurs in retail outlets (general merchandise stores, automobile dealers and service stations, building materials stores, food stores, drugstores, restaurants, and so forth). Retail Sales is a commonly used measure of consumer activity.

The final aggregate used is **Permanent Jobs**. This measure reveals the full-time equivalent jobs generated by an activity, excluding those which are temporary in nature. It should be noted that, unlike the dollar values

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described above, Permanent Jobs is a “stock” rather than a “flow.” In other words, if an area produces $1 million in output in 1999 and $1 million in 2000, it is appropriate to say that $2 million was achieved in the 1999-2000 period. If the same area has 100 people working in 1999 and 100 in 2000, it only has 100 Permanent Jobs.

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APPENDIX C

Detailed Sectoral Results

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Table 1
The Economic Impact of the Alcoholic Beverage Industry on Business Activity in Texas (Based on 2008 Estimated Levels of Production and Sales)
Detailed Industrial Category

Category	Total Expenditures	Gross Product	Personal Income	Employment (Permanent Jobs)
Agricultural Products & Services	$973,414,101	$235,744,808	$160,555,337	2,835
Forestry & Fishery Products	$29,219,732	$32,418,677	$12,023,530	172
Coal Mining	$54,999,002	$15,935,392	$16,792,173	126
Crude Petroleum & Natural Gas	$385,258,821	$84,256,785	$38,859,129	211
Miscellaneous Mining	$12,044,055	$4,709,944	$2,768,713	34
New Construction	$0	$0	$0	0
Maintenance & Repair Construction	$628,841,750	$334,250,986	$275,443,633	4,294
Food Products & Tobacco	$3,006,175,380	$747,357,026	$381,785,687	7,052
Textile Mill Products	$17,606,343	$4,145,780	$3,507,719	89
Apparel	$247,707,645	$136,756,415	$69,296,562	2,088
Paper & Allied Products	$288,333,469	$127,815,665	$57,784,527	970
Printing & Publishing	$370,159,036	$188,313,405	$122,916,404	2,306
Chemicals & Petroleum Refining	$1,079,336,423	$166,219,289	$78,049,606	638
Rubber & Leather Products	$183,973,465	$78,137,463	$45,678,804	1,006
Lumber Products & Furniture	$67,074,951	$23,843,322	$16,998,973	391
Stone, Clay, & Glass Products	$134,082,498	$82,471,957	$43,133,182	777
Primary Metal	$86,902,824	$23,341,465	$17,374,247	289
Fabricated Metal Products	$295,694,024	$93,858,729	$60,595,317	1,147
Machinery, Except Electrical	$100,260,173	$41,578,915	$29,704,151	349
Electric & Electronic Equipment	$92,330,056	$48,029,727	$28,713,806	264
Motor Vehicles & Equipment	$81,245,136	$16,525,056	$10,735,767	168
Transp. Equip., Exc. Motor Vehicles	$37,707,550	$16,293,907	$10,647,492	141
Instruments & Related Products	$24,712,968	$10,037,343	$7,629,296	108
Miscellaneous Manufacturing	$77,925,306	$31,348,443	$21,621,384	379
Transportation	$982,554,098	$670,547,481	$443,476,170	6,776
Communication	$759,985,671	$466,667,924	$199,235,521	1,947
Electric, Gas, Water, Sanitary Services	$1,548,936,418	$357,900,026	$156,178,029	731
Wholesale Trade	$1,283,061,801	$868,185,219	$500,603,334	6,188
Retail Trade	$7,860,318,624	$6,513,640,023	$3,894,948,457	112,868
Finance	$492,883,942	$253,473,635	$147,598,432	1,450
Insurance	$598,931,587	$358,393,130	$214,261,524	2,848
Real Estate	$3,666,699,148	$639,661,558	$103,063,349	1,011
Hotels, Lodging Places, Amusements	$1,433,207,301	$771,106,967	$505,872,834	13,626
Personal Services	$640,690,096	$393,455,663	$306,114,863	5,703
Business Services	$1,272,014,903	$792,401,400	$646,396,503	8,694
Eating & Drinking Places	$5,844,745,357	$3,423,068,950	$1,821,255,406	91,015
Health Services	$1,006,834,455	$704,736,762	$595,861,454	10,880
Miscellaneous Services	$884,807,524	$367,661,430	$318,731,831	8,416
Households	$45,742,354	$45,742,354	$44,774,445	3,420
Total	**$36,596,417,986**	**$19,170,033,022**	**$11,410,987,592**	**301,406**

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group

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Table 2
The Economic Impact of the Distilled Spirits Industry on Business Activity in Texas (Based on 2008 Estimated Levels of Production and Sales)
Detailed Industrial Category

Category	Total Expenditures	Gross Product	Personal Income	Employment (Permanent Jobs)
Agricultural Products & Services	$306,060,857	$72,595,629	$49,441,664	873
Forestry & Fishery Products	$9,520,280	$10,621,185	$3,939,219	57
Coal Mining	$16,036,470	$4,647,455	$4,897,329	37
Crude Petroleum & Natural Gas	$112,342,671	$24,573,575	$11,333,302	62
Miscellaneous Mining	$3,331,007	$1,299,078	$763,656	9
New Construction	$0	$0	$0	0
Maintenance & Repair Construction	$185,496,745	$98,602,996	$81,255,013	1,267
Food Products & Tobacco	$663,503,215	$169,608,111	$86,643,929	1,600
Textile Mill Products	$5,293,324	$1,247,858	$1,055,806	27
Apparel	$73,211,109	$40,375,730	$20,459,000	616
Paper & Allied Products	$80,585,114	$35,584,118	$16,087,318	270
Printing & Publishing	$102,786,915	$52,190,216	$34,065,730	639
Chemicals & Petroleum Refining	$314,913,004	$48,545,788	$22,795,067	186
Rubber & Leather Products	$55,527,604	$23,519,350	$13,749,304	303
Lumber Products & Furniture	$19,795,782	$7,042,592	$5,020,978	115
Stone, Clay, & Glass Products	$27,422,319	$15,950,497	$8,342,176	150
Primary Metal	$19,710,453	$5,377,406	$4,002,678	67
Fabricated Metal Products	$55,228,085	$18,832,079	$12,158,012	230
Machinery, Except Electrical	$29,719,475	$12,291,288	$8,780,946	103
Electric & Electronic Equipment	$27,063,775	$14,085,090	$8,420,547	77
Motor Vehicles & Equipment	$23,785,990	$4,840,606	$3,144,776	49
Transp. Equip., Exc. Motor Vehicles	$11,051,942	$4,774,415	$3,119,908	41
Instruments & Related Products	$7,200,055	$2,925,795	$2,223,874	31
Miscellaneous Manufacturing	$22,850,728	$9,168,504	$6,323,623	111
Transportation	$286,334,816	$195,438,033	$129,255,741	1,975
Communication	$221,491,599	$136,055,078	$58,086,280	568
Electric, Gas, Water, Sanitary Services	$453,111,781	$105,026,676	$45,830,842	215
Wholesale Trade	$384,018,149	$259,840,152	$149,826,147	1,852
Retail Trade	$2,183,471,121	$1,809,391,474	$1,081,958,248	31,353
Finance	$145,524,592	$74,195,657	$43,204,347	425
Insurance	$176,020,224	$105,313,099	$62,960,319	837
Real Estate	$1,079,446,251	$188,964,272	$30,446,242	299
Hotels, Lodging Places, Amusements	$477,379,135	$257,163,763	$168,708,323	4,544
Personal Services	$189,483,136	$116,348,295	$90,520,855	1,686
Business Services	$373,060,216	$232,036,376	$189,282,227	2,546
Eating & Drinking Places	$1,940,247,894	$1,136,330,159	$604,588,305	30,214
Health Services	$295,698,258	$206,970,649	$174,995,603	3,195
Miscellaneous Services	$259,019,645	$107,716,619	$93,381,335	2,466
Households	$13,405,543	$13,405,543	$13,121,882	1,002
Total	**$10,650,149,279**	**$5,622,895,206**	**$3,344,190,551**	**90,098**

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group

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Table 3
The Net Impact of All (On and Off Premises) Alcoholic Beverage Sales on Business Activity in a Representative Community (Case I—Population of 25,000 Residents with Per Capita Income Equal to 90% of the State Average) Detailed Industrial Category

Category	Total Expenditures	Gross Product	Personal Income	Employment (Permanent Jobs)
Agricultural Products & Services	$253,362	$60,256	$41,039	1
Forestry & Fishery Products	$20,428	$22,786	$8,451	0
Coal Mining	$35,175	$10,201	$10,749	0
Crude Petroleum & Natural Gas	$252,315	$55,193	$25,453	0
Miscellaneous Mining	$0	$0	$0	0
New Construction	$0	$0	$0	0
Maintenance & Repair Construction	$410,655	$218,624	$180,159	3
Food Products & Tobacco	$47,118	$12,055	$6,158	0
Textile Mill Products	$0	$0	$0	0
Apparel	$130,081	$71,811	$36,388	1
Paper & Allied Products	$0	$0	$0	0
Printing & Publishing	$117,271	$59,640	$38,927	1
Chemicals & Petroleum Refining	$710,739	$108,850	$51,114	0
Rubber & Leather Products	$0	$0	$0	0
Lumber Products & Furniture	$1,436	$510	$365	0
Stone, Clay, & Glass Products	$33,972	$19,726	$10,317	0
Primary Metal	$0	$0	$0	0
Fabricated Metal Products	$0	$0	$0	0
Machinery, Except Electrical	$284	$117	$81	0
Electric & Electronic Equipment	$321	$166	$100	0
Motor Vehicles & Equipment	$0	$0	$0	0
Transp. Equip., Exc. Motor Vehicles	$9,070	$3,913	$2,561	0
Instruments & Related Products	$0	$0	$0	0
Miscellaneous Manufacturing	$0	$0	$0	0
Transportation	$642,376	$439,029	$290,359	5
Communication	$171,288	$105,759	$45,153	0
Electric, Gas, Water, Sanitary Services	$533,999	$122,838	$53,604	0
Wholesale Trade	$201,026	$136,024	$78,431	1
Retail Trade	$5,433,001	$4,502,173	$2,692,156	78
Finance	$200,183	$102,523	$59,696	0
Insurance	$283,199	$169,444	$101,299	1
Real Estate	$2,337,747	$423,130	$68,176	0
Hotels, Lodging Places, Amusements	$1,018,876	$548,584	$359,890	10
Personal Services	$401,220	$246,040	$191,423	3
Business Services	$551,743	$341,084	$278,237	4
Eating & Drinking Places	$4,127,039	$2,417,092	$1,286,020	64
Health Services	$457,101	$320,952	$271,369	5
Miscellaneous Services	$576,289	$240,581	$208,563	5
Households	$30,673	$30,673	$30,027	2
Total	**$18,987,987**	**$10,789,774**	**$6,426,265**	**185**

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group

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Table 4
The Net Impact of All (On and Off Premises) Distilled Spirits Sales on Business Activity in a Representative Community (Case I—Population of 25,000 Residents with Per Capita Income Equal to 90% of the State Average) Detailed Industrial Category

Category	Total Expenditures	Gross Product	Personal Income	Employment (Permanent Jobs)
Agricultural Products & Services	$82,371	$19,445	$13,247	0
Forestry & Fishery Products	$6,769	$7,565	$2,808	0
Coal Mining	$10,765	$3,125	$3,289	0
Crude Petroleum & Natural Gas	$76,965	$16,836	$7,767	0
Miscellaneous Mining	$0	$0	$0	0
New Construction	$0	$0	$0	0
Maintenance & Repair Construction	$126,305	$67,310	$55,467	1
Food Products & Tobacco	$15,326	$3,915	$2,000	0
Textile Mill Products	$0	$0	$0	0
Apparel	$39,844	$21,971	$11,135	0
Paper & Allied Products	$0	$0	$0	0
Printing & Publishing	$35,324	$17,937	$11,710	0
Chemicals & Petroleum Refining	$218,011	$33,637	$15,796	0
Rubber & Leather Products	$0	$0	$0	0
Lumber Products & Furniture	$445	$157	$112	0
Stone, Clay, & Glass Products	$10,755	$6,269	$3,280	0
Primary Metal	$0	$0	$0	0
Fabricated Metal Products	$0	$0	$0	0
Machinery, Except Electrical	$87	$36	$25	0
Electric & Electronic Equipment	$99	$51	$32	0
Motor Vehicles & Equipment	$0	$0	$0	0
Transp. Equip., Exc. Motor Vehicles	$2,778	$1,202	$786	0
Instruments & Related Products	$0	$0	$0	0
Miscellaneous Manufacturing	$0	$0	$0	0
Transportation	$198,310	$135,304	$89,486	1
Communication	$51,926	$32,060	$13,688	0
Electric, Gas, Water, Sanitary Services	$163,075	$37,557	$16,388	0
Wholesale Trade	$63,462	$42,943	$24,761	0
Retail Trade	$1,522,448	$1,261,620	$754,409	22
Finance	$61,666	$31,389	$18,279	0
Insurance	$86,170	$51,558	$30,819	0
Real Estate	$709,294	$128,291	$20,670	0
Hotels, Lodging Places, Amusements	$342,555	$184,599	$121,103	3
Personal Services	$122,761	$75,255	$58,552	1
Business Services	$168,511	$103,831	$84,701	1
Eating & Drinking Places	$1,384,509	$810,853	$431,419	22
Health Services	$138,872	$97,498	$82,436	1
Miscellaneous Services	$175,071	$73,146	$63,412	2
Households	$9,334	$9,334	$9,138	1
Total	**$5,823,808**	**$3,274,694**	**$1,946,715**	**55**

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group

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Table 5
The Net Impact of All (On and Off Premises) Alcoholic Beverage Sales on Business Activity in a Representative Community (Case II—Population of 100,000 Residents with Per Capita Income Equal to the State Average) Detailed Industrial Category

Category	Total Expenditures	Gross Product	Personal Income	Employment (Permanent Jobs)
Agricultural Products & Services	$1,283,758	$305,657	$208,170	3
Forestry & Fishery Products	$28,122	$31,355	$11,629	0
Coal Mining	$3,733	$1,081	$1,140	0
Crude Petroleum & Natural Gas	$45,043	$9,853	$4,542	0
Miscellaneous Mining	$33,059	$12,802	$7,525	0
New Construction	$0	$0	$0	0
Maintenance & Repair Construction	$1,856,022	$987,491	$813,753	13
Food Products & Tobacco	$3,771,487	$964,853	$492,892	9
Textile Mill Products	$53,262	$12,558	$10,625	0
Apparel	$668,684	$369,153	$187,055	6
Paper & Allied Products	$16,783	$7,412	$3,350	0
Printing & Publishing	$1,070,692	$544,493	$355,402	7
Chemicals & Petroleum Refining	$219,858	$33,664	$15,809	0
Rubber & Leather Products	$556,157	$236,147	$138,050	3
Lumber Products & Furniture	$173,591	$61,806	$44,064	1
Stone, Clay, & Glass Products	$271,122	$157,347	$82,295	1
Primary Metal	$196,448	$53,827	$40,069	0
Fabricated Metal Products	$546,532	$186,782	$120,584	2
Machinery, Except Electrical	$108,505	$44,827	$32,023	0
Electric & Electronic Equipment	$109,246	$56,842	$33,984	0
Motor Vehicles & Equipment	$215	$41	$29	0
Transp. Equip., Exc. Motor Vehicles	$5,398	$2,330	$1,527	0
Instruments & Related Products	$21,286	$8,655	$6,580	0
Miscellaneous Manufacturing	$234,845	$94,346	$65,073	1
Transportation	$2,197,986	$1,504,104	$994,761	15
Communication	$1,275,938	$785,315	$335,278	3
Electric, Gas, Water, Sanitary Services	$3,866,597	$895,306	$390,687	2
Wholesale Trade	$2,615,600	$1,769,859	$1,020,517	13
Retail Trade	$24,386,975	$20,208,784	$12,084,208	350
Finance	$684,172	$350,510	$204,103	2
Insurance	$973,666	$582,562	$348,279	4
Real Estate	$10,802,246	$1,948,254	$313,907	3
Hotels, Lodging Places, Amusements	$4,547,404	$2,448,196	$1,606,102	43
Personal Services	$1,836,372	$1,126,583	$876,498	16
Business Services	$1,546,843	$933,061	$761,140	10
Eating & Drinking Places	$18,446,664	$10,803,690	$5,748,139	287
Health Services	$2,936,603	$2,053,738	$1,736,456	32
Miscellaneous Services	$2,608,892	$1,087,868	$943,093	25
Households	$137,852	$137,852	$134,933	10
Total	**$90,137,658**	**$50,819,004**	**$30,174,271**	**863**

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group

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Table 6
The Net Impact of All (On and Off Premises) Distilled Spirits Sales on Business Activity in a Representative Community (Case II—Population of 100,000 Residents with Per Capita Income Equal to the State Average) Detailed Industrial Category

Category	Total Expenditures	Gross Product	Personal Income	Employment (Permanent Jobs)
Agricultural Products & Services	$417,331	$98,647	$67,185	1
Forestry & Fishery Products	$9,315	$10,406	$3,861	0
Coal Mining	$1,143	$333	$351	0
Crude Petroleum & Natural Gas	$13,749	$3,007	$1,389	0
Miscellaneous Mining	$10,399	$4,038	$2,373	0
New Construction	$0	$0	$0	0
Maintenance & Repair Construction	$571,300	$304,253	$250,722	4
Food Products & Tobacco	$1,226,632	$313,514	$160,158	3
Textile Mill Products	$16,540	$3,905	$3,301	0
Apparel	$204,943	$113,016	$57,265	2
Paper & Allied Products	$5,209	$2,301	$1,039	0
Printing & Publishing	$322,739	$163,884	$106,971	2
Chemicals & Petroleum Refining	$67,480	$10,409	$4,887	0
Rubber & Leather Products	$174,325	$73,801	$43,143	1
Lumber Products & Furniture	$53,734	$19,125	$13,637	0
Stone, Clay, & Glass Products	$85,850	$50,016	$26,160	0
Primary Metal	$61,443	$16,753	$12,471	0
Fabricated Metal Products	$172,828	$58,819	$37,972	1
Machinery, Except Electrical	$34,023	$14,091	$10,062	0
Electric & Electronic Equipment	$33,428	$17,391	$10,396	0
Motor Vehicles & Equipment	$63	$11	$8	0
Transp. Equip., Exc. Motor Vehicles	$1,656	$717	$465	0
Instruments & Related Products	$6,481	$2,635	$2,000	0
Miscellaneous Manufacturing	$71,672	$28,773	$19,846	0
Transportation	$678,729	$463,693	$306,672	5
Communication	$387,434	$238,462	$101,807	1
Electric, Gas, Water, Sanitary Services	$1,184,923	$274,718	$119,882	1
Wholesale Trade	$825,900	$558,834	$322,228	4
Retail Trade	$6,843,773	$5,671,284	$3,391,247	98
Finance	$210,860	$107,373	$62,523	0
Insurance	$296,473	$177,378	$106,041	1
Real Estate	$3,281,668	$591,103	$95,240	1
Hotels, Lodging Places, Amusements	$1,528,589	$823,671	$540,354	14
Personal Services	$562,714	$345,113	$268,504	5
Business Services	$472,585	$284,217	$231,849	3
Eating & Drinking Places	$6,186,921	$3,623,446	$1,927,867	96
Health Services	$893,970	$625,154	$528,574	10
Miscellaneous Services	$793,418	$331,086	$287,021	8
Households	$41,977	$41,977	$41,089	3
Total	**$27,752,217**	**$15,467,354**	**$9,166,560**	**264**

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group

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Table 7
The Net Impact of All (On and Off Premises) Alcoholic Beverage Sales on Business Activity in a Representative Community (Case III—Population of 150,000 Residents with Per Capita Income Equal to 120% of the State Average) Detailed Industrial Category

Category	Total Expenditures	Gross Product	Personal Income	Employment (Permanent Jobs)
Agricultural Products & Services	$1,114,694	$266,513	$181,511	3
Forestry & Fishery Products	$39,216	$43,650	$16,189	0
Coal Mining	$158,380	$45,934	$48,403	0
Crude Petroleum & Natural Gas	$1,917,673	$419,525	$193,485	1
Miscellaneous Mining	$55,076	$21,279	$12,506	0
New Construction	$0	$0	$0	0
Maintenance & Repair Construction	$1,767,688	$941,377	$775,751	12
Food Products & Tobacco	$198,868	$50,903	$26,002	0
Textile Mill Products	$0	$0	$0	0
Apparel	$60,788	$33,556	$17,002	0
Paper & Allied Products	$0	$0	$0	0
Printing & Publishing	$514,638	$261,883	$170,937	3
Chemicals & Petroleum Refining	$540,108	$82,427	$38,707	0
Rubber & Leather Products	$47,300	$20,110	$11,757	0
Lumber Products & Furniture	$12,026	$4,285	$3,056	0
Stone, Clay, & Glass Products	$80,141	$46,445	$24,292	0
Primary Metal	$0	$0	$0	0
Fabricated Metal Products	$195,801	$67,050	$43,284	1
Machinery, Except Electrical	$250,020	$103,222	$73,743	1
Electric & Electronic Equipment	$37,580	$19,553	$11,687	0
Motor Vehicles & Equipment	$0	$0	$0	0
Transp. Equip., Exc. Motor Vehicles	$50,592	$21,820	$14,261	0
Instruments & Related Products	$6,515	$2,651	$2,013	0
Miscellaneous Manufacturing	$398,259	$160,082	$110,409	2
Transportation	$4,848,340	$3,317,277	$2,193,930	34
Communication	$3,493,689	$2,145,600	$916,025	9
Electric, Gas, Water, Sanitary Services	$7,518,797	$1,744,729	$761,353	4
Wholesale Trade	$3,686,885	$2,494,781	$1,438,513	18
Retail Trade	$41,269,636	$34,198,705	$20,449,732	593
Finance	$2,350,727	$1,205,307	$701,856	7
Insurance	$1,454,757	$870,460	$520,397	7
Real Estate	$11,066,551	$1,607,489	$259,000	3
Hotels, Lodging Places, Amusements	$7,555,891	$4,082,034	$2,677,956	72
Personal Services	$3,025,708	$1,855,181	$1,443,360	27
Business Services	$3,682,566	$2,268,977	$1,850,903	25
Eating & Drinking Places	$29,041,616	$17,008,778	$9,049,578	452
Health Services	$3,625,407	$2,543,507	$2,150,558	39
Miscellaneous Services	$3,752,813	$1,556,927	$1,349,726	36
Households	$233,474	$233,474	$228,532	18
Total	**$134,052,220**	**$79,745,491**	**$47,766,414**	**1,366**

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group

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Table 8
The Net Impact of All (On and Off Premises) Distilled Spirits Sales on Business Activity in a Representative Community (Case III—Population of 150,000 Residents with Per Capita Income Equal to 120% of the State Average) Detailed Industrial Category

Category	Total Expenditures	Gross Product	Personal Income	Employment (Permanent Jobs)
Agricultural Products & Services	$394,156	$93,005	$63,340	1
Forestry & Fishery Products	$14,319	$16,002	$5,935	0
Coal Mining	$50,631	$14,677	$15,467	0
Crude Petroleum & Natural Gas	$611,167	$133,698	$61,662	0
Miscellaneous Mining	$18,371	$7,121	$4,188	0
New Construction	$0	$0	$0	0
Maintenance & Repair Construction	$567,901	$302,738	$249,477	4
Food Products & Tobacco	$70,417	$17,995	$9,193	0
Textile Mill Products	$0	$0	$0	0
Apparel	$19,434	$10,714	$5,428	0
Paper & Allied Products	$0	$0	$0	0
Printing & Publishing	$161,174	$81,846	$53,423	1
Chemicals & Petroleum Refining	$173,625	$26,793	$12,584	0
Rubber & Leather Products	$15,684	$6,638	$3,881	0
Lumber Products & Furniture	$3,894	$1,386	$987	0
Stone, Clay, & Glass Products	$26,906	$15,691	$8,208	0
Primary Metal	$0	$0	$0	0
Fabricated Metal Products	$66,050	$22,459	$14,498	0
Machinery, Except Electrical	$83,289	$34,511	$24,658	0
Electric & Electronic Equipment	$12,025	$6,253	$3,738	0
Motor Vehicles & Equipment	$0	$0	$0	0
Transp. Equip., Exc. Motor Vehicles	$16,252	$7,025	$4,592	0
Instruments & Related Products	$2,071	$843	$639	0
Miscellaneous Manufacturing	$126,933	$50,973	$35,157	1
Transportation	$1,576,895	$1,075,857	$711,531	11
Communication	$1,103,245	$677,527	$289,256	3
Electric, Gas, Water, Sanitary Services	$2,406,019	$559,424	$244,117	1
Wholesale Trade	$1,242,624	$840,799	$484,814	6
Retail Trade	$11,680,204	$9,679,062	$5,787,770	168
Finance	$759,202	$386,353	$224,974	2
Insurance	$461,786	$276,280	$165,169	2
Real Estate	$3,502,685	$508,261	$81,891	1
Hotels, Lodging Places, Amusements	$2,572,493	$1,390,278	$912,070	24
Personal Services	$967,992	$593,280	$461,579	8
Business Services	$1,175,110	$720,899	$588,069	8
Eating & Drinking Places	$10,857,943	$6,359,026	$3,383,341	169
Health Services	$1,150,839	$807,290	$682,573	12
Miscellaneous Services	$1,190,028	$494,313	$428,526	11
Households	$74,279	$74,279	$72,707	5
Total	**$43,155,643**	**$25,293,296**	**$15,095,442**	**440**

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group

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