

# 2020 Economic Impact Study of the New York State Distilled Spirits Industry

Prepared for:



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*The Winning Side of Economics*

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## Summary

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The 2020 New York State Distilled Spirits Economic Impact Study estimates the economic contributions made by the distilled spirits industry to the New York economy in 2020. John Dunham & Associates (JDA) conducted this research, which was funded by the New York State Distillers Guild (NYSDG). This work used standard econometric models first developed by the U.S. Forest Service, and now maintained by IMPLAN Group, LLC. Data came from NYSDG, additional industry sources, Alcohol and Tobacco Tax and Trade Bureau (TTB), New York State Liquor Authority (NYSLA), and Infogroup.<sup>1</sup>

The study defines the distilled spirits industry as: Only distilled spirits makers licensed to produce in New York State. This includes wineries producing brandy and other spirits. All production, administrative, distribution facilities and tasting rooms are included.<sup>2</sup> In addition, the industry includes wholesale and retail operations in New York State. Only those jobs associated with New York State produced distilled spirits are included in the analysis.

The distilled spirits industry is composed of three tiers: Manufacturing, wholesale and retail. The first tier of the distilled spirits industry is comprised of distilleries that extract sugars from plant-based sources, ferment, distill and age the liquid to produce spirits. Once the distilled spirit is produced and packaged, it is ready for the second tier of the industry – the wholesalers who sell and distribute to retailers. In some cases, the producers self-distribute their products instead of relying on a third party for distribution. The third tier is retailing, which is made up of on-premise retailers such as restaurants, bars, sport stadiums, etc. and off-premise retailers like roadside farm stands, farmers markets, SLA licensed Taste NY retail locations.

In addition to the three tiers of the distilled spirits industry, the study calculates the economic contribution to the state made through the spending of tourists visiting New York’s 160 distilleries.<sup>3</sup>

The study measures various factors of the New York distilled spirits industry including the number of jobs, the wages paid to employees, the value added, total output and charitable contributions. In addition, it assesses the economic impact of the suppliers that support the New York distilled spirits industry, as well as those industries supported by the induced spending of both the direct and supplier industries.

Every industry inevitably makes purchases from a mix of different industries – thus, an economic activity within one industry always extends beyond its origins. Economic activity started by the distilled spirits industry generates output (and jobs) in hundreds of other industries, often in regions far removed from the site of the original operation. The impact of supplier firms and the “induced impact” of the re-spending by employees of industry and supplier firms are

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<sup>1</sup> Infogroup is the leading provider of business and consumer data for the top search engines and leading in-car navigation systems in North America. Infogroup gathers data from a variety of sources, by sourcing, refining, matching, appending, filtering, and delivering the best quality data. Infogroup verifies its data at the rate of almost 100,000 phone calls per day to ensure absolute accuracy.

<sup>2</sup> Throughout this study, all references to the “distilled spirits industry” include the production, wholesaling, and retailing of distilled spirits products.

<sup>3</sup> Throughout this study, the distillery count refers to the number of distillery facilities. A single distiller may have multiple facilities throughout the state. Each of these facilities is included in the distillery count.

calculated using an input-output model of New York. The study calculates the impact at the state and state legislative district levels.

The study also estimates taxes paid by the industry and its employees. Federal taxes include industry-specific excise and sales taxes, business and personal income taxes, FICA, and unemployment insurance. State and local tax systems, on the other hand, vary widely. Direct retail taxes include state and local sales taxes, license fees, and applicable gross receipt taxes. Private retailers pay real estate and personal property taxes, business income taxes, and other business levies that vary in each state and municipality. All entities engaged in business activity generated by the industry pay similar taxes.

In addition to this, the study estimates the *consumption taxes* paid by consumers of New York State produced distilled spirits that are sold in-state. This includes Federal, State and New York City excise taxes, as well as the New York State sales tax.<sup>4</sup>

## **Economic Impact Results**

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The New York distilled spirits industry includes distilleries and wholesalers that distribute products for distilled spirits manufacturers, as well as retail establishments that sell distilled spirits to consumers, such as liquor stores, restaurants, and bars. New York distilleries draw hundreds of thousands of tourists and visitors annually. The economic impact of spending from these visitors is an important aspect of the overall distilled spirits industry. Their economic contribution includes spending on lodging, food, transportation, and retail purchases. Overall, the distilled spirits industry in New York directly creates 6,010 jobs, generating \$537.4 million in wages. The industry directly generates \$3.2 billion in economic activity in the state.

The New York distilled spirits industry provides good jobs, paying an average of about \$83,400 in annual wages and benefits. The total wages generated by direct, indirect, and induced economic activity driven by the distilled spirits industry is \$962.2 million.

The full economic impact of the distilled spirits industry extends beyond the initial direct impacts. For these companies to conduct their businesses, they require goods and services that must be purchased from other industries. This additional economic impact is referred to as the supplier impact. Examples of the supplier impacts created by the distilled spirits industry includes the purchase of still and distillery equipment, agricultural supplies, rent paid to landlords, the purchase of packaging materials, the hiring of consultants, drivers, lawyers, and even the creating of government jobs responsible for the regulation or licensing of the distilled spirits businesses.

People employed by the direct and supplier sectors spend their wages elsewhere in the economy. These expenditures can be captured in businesses such as movie theaters, restaurants, retail shops, health care, and education. In total, the distilled spirits industry contributes to New York by generating nearly 11,540 full time jobs paying \$962.2 million in wages and benefits, with

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<sup>4</sup> JDA considers these to be consumption taxes even though they are often paid directly by the distiller or wholesaler. Local sales taxes are not included.

total economic activity equaling \$4.4 billion. The overall economic impact of the distilled spirits industry in New York is presented in Table 1 below.

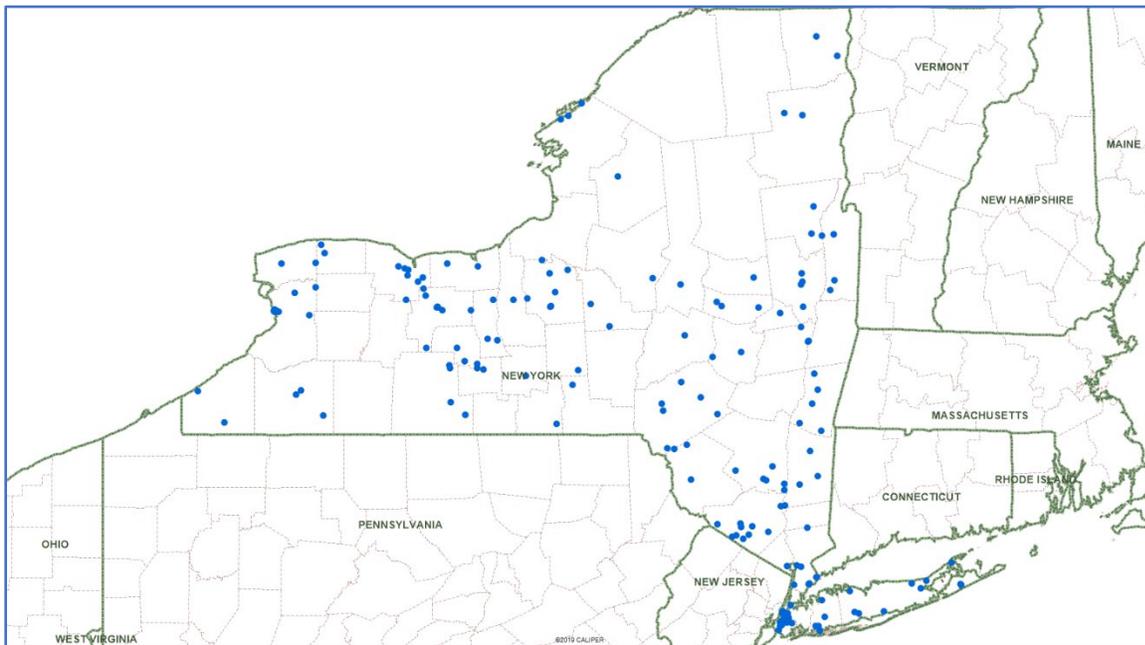
**Table 1**  
**New York Distilled Spirits Industry Economic Impact**

	Direct	Supplier	Induced	Total
Jobs	6,010	2,279	3,249	11,538
Wages	\$ 537,387,000	\$ 209,995,600	\$ 214,808,000	\$ 962,190,600
Economic Output	\$ 3,200,508,600	\$ 594,968,300	\$ 580,360,900	\$ 4,375,837,800

*Distilleries*

The production of distilled spirits begins with choosing a sugar source such as grains, or fruit. In New York, farm distillers must source 75 percent of their raw materials in state.<sup>5</sup> Sugars from these plant-based sources are converted into alcohol and carbon dioxide as part of a fermentation process.

**Figure 1**  
**Location of New York Distilleries**



Distilleries then continue the distilling process through the use of pot or continuous stills. The size, shape and temperature of a still contributes to the overall flavor and alcohol content of the spirit. Distilleries in New York may sell directly to consumers through their tasting rooms or self-distribute to local retail licensees. The impact of these activities is included in the distilleries impact and are not included in the wholesale and retail economic impacts in order to avoid double counting. New York’s 160 distilleries employ almost 1,350 people (FTE jobs) and pay

<sup>5</sup> This restriction does not apply to larger distillers not licensed under a Class D distilling license.

nearly \$348.6 million in wages and benefits.<sup>6</sup> These firms directly generate well over \$2.7 billion in economic activity in the state.

### *Distilled Spirits Wholesalers*

Traditionally, most distilled spirits are sold through what is called the three-tier system, whereby producers sell to wholesalers, who in turn sell to retailers. In fact, only a small part of the distilled spirits actually produced in New York is sold through wholesalers, with most either sold directly by the distilleries, or self-distributed to local licensees. Based on survey data only about 22.3 percent of distilled spirits produced in the state is sold through New York wholesaling establishments, and of this only about half is sold through New York retailers.<sup>7</sup> The majority of New York distilled spirits is either sold on premise or self-distributed, and as such, the economic impact of most wholesaling activities is included in the distilled spirits impact numbers. Wholesalers of New York distilled spirits directly employ 66 people selling spirits to New York based accounts, paying them \$7.3 million in wages, and generating \$24.9 million in economic activity in New York.

### *Distilled Spirits Retailers*

The third tier, retailing, is responsible for selling distilled spirits to consumers through on- and off-premise businesses such as restaurants, bars and licensed liquor stores. In the state, the consumption of New York distilled spirits creates 3,260 jobs in the on- and off-premise retail and hospitality sectors. These jobs pay about \$119.9 million in wages and contribute \$276.1 million in economic activity to the state.

**Table 2**  
**Economic Impact of Distilled Spirits Retailers in New York**

	<b>Jobs</b>	<b>Wages</b>	<b>Output</b>
On-Premise Retail	2,097	\$ 77,752,500	\$ 180,490,800
Off-Premise Retail	1,162	\$ 42,120,300	\$ 95,565,200
<b>Total Retail</b>	<b>3,259</b>	<b>\$ 119,872,800</b>	<b>\$ 276,056,000</b>

### *Tourism*

New York’s distilleries attract visitors from across the state and across the country. These visitors not only create business for the distilleries, but they also spend millions on lodging, food, transportation, and other retail purchases. JDA estimates that about 507,900 people made over 1.672 million visits to New York’s distilleries while spending \$177.9 million which generated a direct economic impact of \$150.7 million. In addition to direct spending in tourist locations associated with distilleries, the supplier and induced impacts of this spending has created another \$104.6 million in economic activity in other parts of the New York economy. The economic

<sup>6</sup> Note that one major distiller is headquartered in New York and therefore has a large headcount. Its spirits are produced not only in New York State but at a number of distilleries located around the country. Other distilling firms simply maintain offices in New York state.

<sup>7</sup> Survey of New York State farm distillers conducted by the NYSDBG. A total of 58 firms responded meaning that the survey was significant at the 10 percent level.

activity created by these visitors directly generates about 1,890 FTE jobs, paying about \$101.3 million in wages, and contributing \$225.3 million in economic activity to the state.

**Table 3**  
**Economic Impact of Tourism in New York**

	<b>Jobs</b>	<b>Wages</b>	<b>Output</b>
Direct Impact	1,336	\$61,598,400	\$150,690,400
Supplier Impact	220	\$17,774,600	\$45,068,200
Induced Impact	333	\$21,956,400	\$59,520,800
<b>Total Impact</b>	<b>1,889</b>	<b>\$101,329,400</b>	<b>\$255,279,400</b>

*Supplier Impacts*

The supplier impact created by the distilled spirits industry includes goods and services from a multitude of different sectors. These purchases include varied goods such as grains, tools, cash registers, and promotional materials. Services such as consulting, banking, legal, and marketing are also a part of the supplier impact. In the case of the distilled spirits industry, government jobs are created in government agencies (like the State Liquor Authority) responsible for the regulation of distilled spirits related businesses. An estimated 2,280 supplier jobs overall are created by the distilled spirits, paying \$210.0 million in wages and generating about \$595.0 million in economic activity.

**Table 4**  
**Supplier Impact of the Distilled Spirits Industry in New York**

<b>Sector</b>	<b>Jobs</b>	<b>Wages</b>	<b>Output</b>
Agriculture	30	\$1,213,900	\$3,766,100
Mining	3	\$570,000	\$903,300
Construction	21	\$1,619,800	\$4,825,800
Manufacturing	163	\$13,378,300	\$56,623,800
Transportation and Communication	298	\$28,260,800	\$97,944,600
Wholesaling	577	\$61,160,600	\$199,780,000
Retailing	38	\$1,905,800	\$4,835,200
Finance, Insurance and Real Estate	315	\$26,501,200	\$100,415,400
Travel and Entertainment	140	\$5,845,900	\$12,108,200
Business and Personal Services	647	\$64,544,500	\$105,981,500
Government	47	\$4,994,800	\$7,784,400
Other	0	\$0	\$0
<b>Supplier Impact</b>	<b>2,279</b>	<b>\$209,995,600</b>	<b>\$594,968,300</b>

### *Induced Impacts*

The induced impact is created by the expenditure of wages earned by employees in the direct and supplier sectors. These jobs are dependent on the distilled spirits industry in New York and would not exist if not for it. Businesses included in the induced impact include everything from restaurants and movie theaters to physicians' offices and universities. The induced impact of the distilled spirits industry created 3,250 jobs, paying \$214.8 million in wages and generating about \$580.4 million in economic activity.

**Table 5**  
**Induced Impact of the Distilled Spirits Industry in New York**

<b>Sector</b>	<b>Jobs</b>	<b>Wages</b>	<b>Output</b>
Agriculture	11	\$269,900	\$860,800
Mining	1	\$192,100	\$274,100
Construction	19	\$1,367,700	\$4,257,900
Manufacturing	29	\$2,151,900	\$11,464,500
Transportation and Communication	164	\$15,844,100	\$62,023,800
Wholesaling	69	\$7,422,600	\$25,045,700
Retailing	433	\$18,894,900	\$45,670,300
Finance, Insurance and Real Estate	341	\$33,874,900	\$187,416,400
Travel and Entertainment	465	\$17,319,600	\$41,675,000
Business and Personal Services	1,585	\$109,054,200	\$188,443,700
Government	38	\$4,330,300	\$7,841,200
Other	94	\$4,085,800	\$5,387,500
<b>Induced Impact</b>	<b>3,249</b>	<b>\$214,808,000</b>	<b>\$580,360,900</b>

### *Fiscal Impacts*

An important part of an impact analysis is the calculation of the contribution of the industry to the public finances of the country. In the case of the distilled spirits industry in New York, the business taxes paid by firms and their employees provide \$299.7 million to the federal government and \$911.4 million to state and local governments.

In addition to this, consumers of New York State produced distilled spirits that are sold in-state pay Federal, State and New York City excise taxes, as well as the New York State sales tax.<sup>8</sup>

Business and personal taxes are calculated directly from IMPLAN; however, the perponderance of corporate headquarters and offices of non-producing distillers and importers in the state leads to substantial overestimates of taxes paid by businesses and employees of distillers operating in New York State. To compensate for this, average US tax revenues per employee for the non-tourism components of the impact are used in this model.

<sup>8</sup> JDA considers these to be consumption taxes even though they are often paid directly by the distiller or wholesaler. Local sales taxes are not included.

**Table 6**  
**Fiscal Impact of the Distilled Spirits Industry in New York**

<b>Tax Type</b>	<b>Federal</b>	<b>State/Local</b>	<b>Total</b>
Individual Income	\$81,033,456	\$32,643,919	\$113,677,375
Social Security/Social Insurance	\$85,592,620	\$2,844,372	\$88,436,992
Property		\$12,640,786	\$12,640,786
Business/Employee Paid Sales Taxes		\$409,827,084	\$409,827,084
Corporate Income	\$7,459,364	\$12,005,951	\$19,465,315
Other Personal and Business Taxes	\$125,598,643	\$441,475,236	\$567,073,879
<b>Total Business Taxes</b>	<b>\$299,684,083</b>	<b>\$911,437,348</b>	<b>\$1,211,121,431</b>
<b>Tax</b>	<b>Federal</b>	<b>State/Local</b>	<b>Total</b>
Federal Excise Taxes	\$91,091,800		\$91,091,800
State Excise Taxes		\$91,536,800	\$91,536,800
Local Excise Taxes		\$6,143,500	\$6,143,500
State Sales Taxes		\$140,053,100	\$140,053,100
<b>Total Consumption Taxes</b>	<b>\$91,091,800</b>	<b>\$237,733,400</b>	<b>\$328,825,200</b>
<b>Total Taxes</b>	<b>\$390,775,883</b>	<b>\$1,149,170,748</b>	<b>\$1,539,946,631</b>

An important part of the economic impact model is an estimate of the specific taxes paid by consumers on beverage alcohol products. While all taxes are eventually paid by consumers, *consumption taxes* are calculated separately from the property taxes, income taxes, corporate taxes etc. that are directly paid by firms and their employees. These taxes are:

- Federal Excise Taxes (even though these are remitted directly by distillers)
- State Excise Taxes (even though these are remitted by distributors and distillers)
- State Sales Taxes<sup>9</sup>
- Other Taxes applied solely to the sale of beverage alcohol products (for example New York City’s liquor tax).

**State Excise Producers Tax Credits**

The New York Legislature has considered legislation that would increase an Alcoholic Beverage Production Tax Credit for distillers. This study featured analysis of the results of a survey by the NYS Distillers Guild of distillers operating in New York regarding what they would do with any savings they gained through the increased tax credit if enacted. This will go on to present that analysis and project the economic impact.

Background: In 2016, New York’s Beer Production Credit was renamed and expanded to include cider, wine, and spirits. The 2016 legislation, which renamed the credit the Alcoholic Beverage Production Credit, extended the existing 14 cents per gallon credit for brewers to producers of cider, wine and spirits.

Producers of beer, cider, wine and spirits are taxed at different rates, so the uniform 14 cents per gallon credit creates disparity in the benefit of the Alcoholic Beverage Production Credit for the producers of different categories of beverages.

<sup>9</sup> While consumers, particularly in New York State, also pay a plethora of local sales taxes, the modeling required to allocate sales to over 50,000 different geographic taxing jurisdictions nationwide makes the estimate of these extremely difficult and inexact, so local sales taxes are not included in the model.

Legislation under consideration in 2019-2020, which is expected to be taken up again in 2021, would align the Alcoholic Beverage Production Credit with the respective tax rates, creating parity among the producers of beer, cider, wine, and spirits in New York State.

Survey re Impact of Potential Increased Tax Credit:

The survey found that most distillers would reinvest any monies received from an increased tax credit in their businesses in ways that would allow them to increase production and generate significant economic growth for New York State.

Distillers said they would:

- invest in equipment including fermenters, tanks, stills, tuns, and chillers;
- increase spending on supplies like barrels, grain, grapes, and honey, with 95% of those supplies coming from within New York; and
- hire additional staff in New York, creating as many as 123 new FTE jobs, and invest more in marketing, advertising, and other professional services.

***We estimate that enactment of a change to the Alcoholic Beverage Production Tax Credit would generate more than \$2.21 for every dollar (on net) refunded to craft distillers by the state.***

In this model the consumption tax burden is calculated only for those products produced and sold in New York State. The model begins with an estimate of the production value and volume of product that is sold in New York State. This is based on a weighted average producer price of \$84.40 per gallon. This comes from a weighted average price where the smaller distillers in the state are assumed to sell the bulk of their production on-site or through direct shipment and meaning that the *producers' price* would include a wholesale and retail markup, and larger firms would sell at a price equal to the national prices. These figures come from the 2018 Economic Impact Model of the Wine & Spirits Industry<sup>10</sup> calculated in the 2018 model of the distilled spirits industry. The weighting factor is the number of jobs in each distilling segment.

The 2020 New York State Distillers Economic Impact Model calculates a producer output of just under \$2.75 billion. This is the producers' value of the production in the state. Dividing this by \$84.40 provides an estimate of 32,568,742 gallons of spirits.<sup>11</sup>

The share of this production sold in New York State is estimated to be 43.64 percent. This is based on production weighted by distiller jobs in each segment of the industry. Table 7 on the following page shows these weights.<sup>12</sup>

**Table 7**  
**Distiller Segment Weights**

<sup>10</sup> 2018 Economic Impact Study of the Wine and Spirits Industry, prepared by John Dunham & Associates for the Wine and Spirits Wholesalers of America, 2018

<sup>11</sup> This is likely overstated somewhat because production from large distillers with operations in other states, but with headquarters and other staff in New York (along with distilling operations) is being counted in the volume figures.

<sup>12</sup> Survey of New York State distillers conducted by the NYSDA. A total of 58 firms responded meaning that the survey was significant at the 10 percent level. 2018 Economic Impact Study of the Wine and Spirits Industry, prepared by John Dunham & Associates for the Wine and Spirits Wholesalers of America, 2018, and *Craft Spirits Data Project*, prepared by Park Street for the American Craft Spirits Association, October 2019.

<b>Distiller Size</b>	<b>In State Share</b>	<b>Source</b>
National	7.66%	2018 WSWA Wine & Spirits Economic Impact Analysis
Large	4.25%	NYSDG Survey weighted based on large distiller over small distiller distributor share of sales from American Craft Spirits Assn., Craft Spirits Data Project
Medium	52.77%	NYSDG Survey weighted based on medium sized distiller over small distiller distributor share of sales from American Craft Spirits Assn., Craft Spirits Data Project
Small	88.04%	NYSDG Survey. Sum of "stay in NYS" percents from Survey

Multiplying total gallons by 43.64 percent gives an estimate of 14,213,789 gallons of New York state produced spirits sold in state.<sup>13</sup>

Of this volume, 38 percent comes from larger distilleries, so the Federal excise tax is assumed to be \$12.36 per gallon which is derived by allocating 100,000 gallons of production for 5 companies at \$2.70 per gallon and the rest of their volume is at \$13.34. For smaller companies, FET rate is assumed to be \$2.70. It is estimated that about \$91,091,800 is collected in Federal excise tax.

The State excise tax rate is \$6.44. Applying this to the gallonage gives an estimate of \$91,536,800. New York City imposes a liquor tax of \$0.264 per liter which equates to about \$1.00 per gallon. This tax is estimated to generate \$6,143,460.

State sales tax collections are based on a rate of 4.0 percent. The total sales tax collections of \$138,931,413 are calculated by adding together the estimated retail sales from the smaller producers (calculated as part of the producers' price) and adding in the estimated retail sales from larger producers. These are based on the larger producer share multiplied by the appropriate wholesale and retail margins. The margins are 15 percent at wholesale and 60.1 percent for off-premise sale, which come from the US Department of Commerce, Bureau of Economic Analysis, and an on-premise margin of 269 percent, which is from the 2018 industry impact study.<sup>14</sup>

All together the consumption taxes are calculated to be \$327,703,500, as shown in Table 8

**Table 8**  
**Total Estimated Consumption Taxes**

<b>Tax</b>	<b>Federal</b>	<b>State/Local</b>	<b>Total</b>
Federal Excise Taxes	\$91,091,800		\$91,091,800
State Excise Taxes		\$91,536,800	\$91,536,800
Local Excise Taxes		\$6,143,500	\$6,143,500
State Sales Taxes		\$138,931,400	\$138,931,400
<b>Total Consumption Taxes</b>	<b>\$91,091,800</b>	<b>\$236,611,700</b>	<b>\$327,703,500</b>

### *Charitable Contributions*

<sup>13</sup> While this is likely a bit high, there are no other data to work with to moderate the estimate.

<sup>14</sup> *Margins After Redefinitions: 2007 Detail*, Industry Economic Accounts Directorate, Bureau of Economic Analysis (BEA), U.S. Department of Commerce.

Charitable contributions are calculated as part of the economic impact model itself. The IMPLAN tables show spending per dollar of output for about 530 industry categories, including industries such as religious organizations, civic organizations, and social advocacy organizations. JDA estimated the charitable contributions of the industry by analyzing the impacts in individual and family services, community food, housing, and other relief services, including rehabilitation services, performing arts companies, museums, historical sites, zoos, and parks, religious organizations, grantmaking, giving, and social advocacy organizations, and labor and civic organizations.

Spending in each of these categories is aggregated together to estimate the charitable contributions attributed to distilled spirits industry in New York. Using total of direct, supplier and induced impacts, JDA estimates that about \$18.2 million is contributed by employees and companies in the distilled spirits industry to charitable organizations. These contributions lead to about 134 FTE jobs in these non-profit organizations.

**Table 9**  
**Charitable Contributions of the Distilled Spirits Industry in New York**

<b>Charitable Sector</b>	<b>Jobs</b>	<b>Wages</b>	<b>Economic Output</b>
Community Services	26	\$1,195,440	\$2,606,790
Arts	15	\$977,550	\$1,961,810
Religious	51	\$3,111,040	\$4,411,290
Social Advocacy	17	\$1,489,690	\$5,181,570
Labor	25	\$1,317,860	\$4,065,220
<b>Total</b>	<b>134</b>	<b>\$8,091,580</b>	<b>\$18,226,680</b>

## Study Methodology

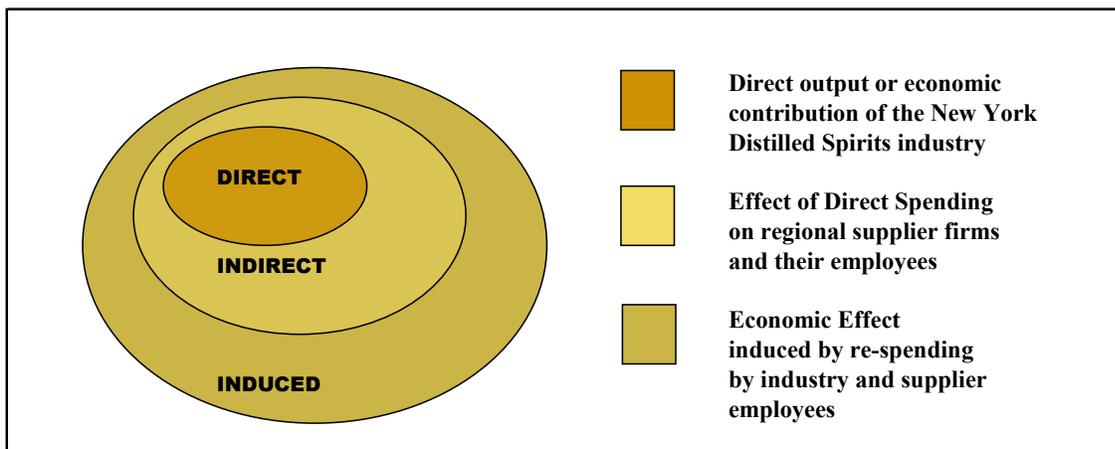
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### Model Development

The Economic Impact Study begins with an accounting of the direct employment in the New York distilled spirits industry. The data comes from NYSDG, additional industry sources, TTB, NYSLA, and Infogroup. It is sometimes mistakenly thought that initial spending accounts for all of the impact of an economic activity or a product. For example, at first glance it may appear that consumer expenditures for a product are the sum total of the impact on the local economy. However, a single economic activity leads to a ripple effect wherein other sectors and industries benefit from this initial spending. This inter-industry effect of an economic activity can be assessed using multipliers from regional input-output modeling.

**Figure 2**  
**Graphical Description of Economic Impact Modeling**

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The economic activities of events are linked to other industries in the state economy. Activities related to distilled spirits products represent the direct effects on the economy. Indirect impacts occur when these activities require purchases of goods and services such as advertising services or fertilizer from local or regional indirect firms. Additional induced impacts occur when workers involved in direct and indirect activities spend their wages. The ratio between induced output and direct output is termed the multiplier.

This method of analysis allows the impact of local production activities to be quantified in terms of final demand, earnings, and employment in the state as a whole.

Once the direct impact of the industry has been calculated, the input-output methodology discussed below is used to calculate the contribution of the indirect sector and of the re-spending in the economy by employees in the industry and its indirect firms. This induced impact is the most controversial part of economic impact studies and is often quite inflated. In the case of this model, only the most conservative estimate of the induced impact has been used.

## Model Description and Data

This economic impact analysis was developed by JDA based on data provided by the New York State Distillers Guild, Infogroup, TTB, NYSLA and other industry sources. The analysis utilizes the IMPLAN model in order to quantify the economic impact of the New York distilled spirits industry on the economy of New York and the state's legislative districts.<sup>15</sup> The model adopts an accounting framework through which the relationships between different inputs and outputs across industries and sectors are computed. This model can show the impact of a given economic decision – such as a distillery opening– on a pre-defined, geographic region. It is based on the national income accounts generated by the US Department of Commerce, Bureau of Economic Analysis (BEA).<sup>16</sup>

Direct employment for the industry is calculated using data from the NYSDG and Infogroup. Where NYSDG and Infogroup data was unavailable, direct employment was replaced with a median calculated by business type. In instances where jobs numbers were deemed inaccurate, estimates were used based on physical size of the facility and information provided by the businesses such as annual gallons of distilled spirits produced.

The IMPLAN model is designed to run based on the input of specific direct economic factors. It uses a detailed methodology (see IMPLAN Methodology section) to generate estimates of the other direct impacts, tax impacts and supplier and induced impacts based on these entries. In the case of this model, direct employment in the New York distilled spirits industry is a starting point for the analysis. Direct employment is based on data provided to John Dunham & Associates by NYSDG as of July 2020 and Infogroup as of July 2020. Infogroup data are recognized nationally as a premier source of micro industry data. Infogroup is the leading provider of business and consumer data for the top search engines and leading in-car navigation systems in North America. Infogroup gathers data from a variety of sources, by sourcing, refining, matching, appending, filtering, and delivering the best quality data. This data is then verified at a rate of almost 100,000 phone calls per day to ensure absolute accuracy.

Once the initial direct employment figures have been established, they are entered into a model linked to the IMPLAN database. The IMPLAN data are used to generate estimates of direct wages and output. Wages are derived from the U.S. Department of Labor's ES-202 reports. IMPLAN uses this data to provide annual average wage and salary establishment counts, employment counts, and payrolls at the county level. Since this data only covers payroll employees, it is modified to add information on independent workers, agricultural employees, construction workers, and certain government employees. Data are then adjusted to account for counties where non-disclosure rules apply. Wage data include not only cash wages, but health and life insurance payments, retirement payments and other non-cash compensation. In short, it includes all income paid to workers by employers.

Total output is the value of production by industry in a given state. It is estimated by IMPLAN from sources similar to those used by the Bureau of Economic Analysis (BEA) in its RIMS II

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<sup>15</sup> The model uses 2016 input/output accounts.

<sup>16</sup> The IMPLAN model is based on a series of national input-output accounts known as RIMS II. These data are developed and maintained by the U.S. Department of Commerce, Bureau of Economic Analysis as a policy and economic decision analysis tool.

series. Where no Census or government surveys are available, IMPLAN uses models such as the Bureau of Labor Statistics' growth model to estimate the missing output.

The model also includes information on income received by the Federal, state and local governments and produces estimates for the following taxes at the Federal level: Corporate income; payroll, personal income, estate and gift, customs duties; and fines, fees, etc. State and local tax revenues include estimates of: Corporate profits, property, sales, severance, estate and gift and personal income taxes; licenses and fees and certain payroll taxes.

While IMPLAN is used to calculate the state level impacts, Infogroup data provide the basis for legislative district and county level estimates. Publicly available data at the legislative district level is limited by disclosure restrictions, especially for smaller sectors of the economy. This model therefore uses actual physical location data provided by Infogroup in order to allocate jobs – and the resulting economic activity – by physical address or when that is not available, zip code. For zip codes contained in a single geography, jobs are allocated based on the total sector jobs in each zip. For zip codes that are broken by districts, allocations are based on the percentage of total jobs physically located in each segment of the zip code. Physical locations are based on either actual address of the facility, or the zip code of the facility, with facilities placed randomly throughout the zip code area. All indirect and induced jobs are allocated based on the percentage of a state's employment in that sector in each geography. Again, these percentages are based on Infogroup data.

The data used to develop direct employment figures by sector is described in detail below.

### Distilleries

The economic impact of distillers is based on data from New York State Distillers Guild, Federal Alcohol and Tobacco Tax and Trade Bureau, New York State Liquor Authority, Infogroup, and industry sources. Distillers include those that produce their own distilled spirits, distillery facilities, distilled spirits owned retail outposts, facilities contracted to produce spirits for other companies, and companies marketing their own distilled spirits brand, but not producing the distilled spirits itself (so called rectifiers).<sup>17</sup>

Based on these combined datasets, it is estimated that there are about 160 active distilleries in the State of New York.<sup>18</sup> Infogroup employment figures are used to estimate the jobs in each facility. Median job figures were used where employment figures were not available. In instances where jobs numbers were deemed inaccurate, estimates were used based on the physical size of the facility and information provided by businesses such as annual gallons of spirits produced. JDA estimates that there are about 1,350 jobs relating to the production of distilled spirits in New York.<sup>19</sup> These workers earn an estimated \$348.6 million and generate an estimated \$2.7 billion in economic activity for the state's economy.

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<sup>17</sup> There are companies that are licensed as distilleries but are rectifiers only. These companies purchase distilled spirits from another distiller and age, blend or flavor the product and then sell it under their own label.

<sup>18</sup> Distillery locations – not including home based employees.

<sup>19</sup> This includes homebased sales employees for one large distiller.

## Distilled Spirits Wholesalers

Traditionally, most distilled spirits are sold through what is called the three-tier system, whereby producers sell to wholesalers, who in turn sell to retailers. In fact, only a small part of the distilled spirits in New York is sold through wholesalers, with most production either sold directly by the distilleries, or self-distributed to local licensees. The distilled spirits wholesaling data in this study represents the jobs created by the wholesaling of New York produced distilled spirits through the three-tier system. In addition, only those FTE jobs associated with New York produced spirits sold to consumers in the state are used in this analysis. This represents just 10.4 percent of all spirits produced in New York.<sup>20</sup>

Data for these wholesale activities comes from Alcohol Wholesaler Permit Lists from the US Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau, Infogroup, New York State Liquor Authority, and the Wine and Spirits Wholesalers of America (WSWA).

## Distilled Spirits Retailers

The third tier, retailing, is responsible for selling distilled spirits to consumers through on- and off-premise businesses such as restaurants, bars, and licensed package stores. Only the portion of economic activity created by these businesses due to the sale of New York produced distilled spirits is accounted for in the analysis. Retail sales that are occurring at distillery owned facilities such as tasting rooms or restaurants within the distillery’s premises are not included in this impact. These impacts are captured in the distillery sector. Based on data gathered from NYSDG members, the 2018 economic impact analysis of the Distilled Spirits Industry, and the American Craft Spirits Association, 34.5 percent of state produced spirits are sold at retail in New York, with another 53.5 percent sold directly by distillers through their own tasting rooms and facilities.<sup>21</sup> The final weighted average calculations are then adjusted to match the on- and off-premise retail breaks from the NYSDG survey.

Table 10 shows the final calculation of the weighted average in-state retail share of both distribution and retail percentages for New York produced spirits.

**Table 10**  
**Calculation of New York Distribution and Retail Shares**

<b>Distiller Size</b>	<b>Number*</b>	<b>Jobs (weight)</b>	<b>Production Pct.</b>	<b>Dist in NYS</b>	<b>On Retail</b>	<b>Off Retail</b>
National (1)	29	518	38.4%	7.7%	6.7%	3.4%
Large (2)	44	469	34.8%	4.3%	4.5%	9.6%
Medium (2)	61	254	18.8%	6.2%	6.6%	14.1%
Small (3)	50	108	8.0%	10.4%	11.0%	23.5%
<b>Adjusted Weighted Average</b>				<b>6.4%</b>	<b>8.3%</b>	<b>13.6%</b>

\* Number is total facilities - includes home based sales offices

(1) Source 2018 WSWA Wine & Spirits Economic Impact Analysis

(2) American Craft Spirits Association, Craft Spirits Data Project

(3) NYSDG Survey

<sup>20</sup> Survey of New York State farm distillers conducted by the NYSDA. A total of 58 firms responded meaning that the survey was significant at the 10 percent level. 2018 Economic Impact Study of the Wine and Spirits Industry, prepared by John Dunham & Associates for the Wine and Spirits Wholesalers of America, 2018, and *Craft Spirits Data Project*, prepared by Park Street for the American Craft Spirits Association, October 2019.

<sup>21</sup> Ibid.

Employment data were gathered at the zip code level from Infogroup, The Economic Census of Retail Trade by Product Line<sup>22</sup> and U.S. Department of Commerce – Bureau of Economic Analysis – Personal Consumption Expenditures by Type of Product<sup>23</sup> is used determine the type of off-premise stores that sell spirits as well as the percent of sales at each store type that is due to the sale of spirits.

## Tourism

One of the important elements of the impact of distilleries on the New York economy is their attractiveness to tourists. Every year, hundreds of thousands of people visit distilleries across the state in part to visit (or even stay at) distilleries, learn about distilled spirits and sample different distilled spirits. In order to estimate the economic impact of these visits it was first necessary to calculate the number of visitors to the state’s 160 distilleries. This was done at the county level based on an econometric model that used detailed data calculated by key distilled spirits producing counties as a means of estimating visitors per distillery. A function was developed that estimated the number of visits per distillery based on the number of distilleries in each of the 62 counties in New York that produce distilled spirits. This relies on the idea of economic clustering, which suggests that a larger grouping of distilleries would attract more visitors to each distillery than a smaller grouping. The tendency of locational clustering of similar types of firms has been documented by economists since at least the beginning of the twentieth century.

British academic Stephen Brown described the rule of ‘retail compatibility,’ which explains how retail businesses, such as restaurants, know that two compatible firms in close proximity will show an increase in business volume directly proportionate to the incidence of consumer interchange between them.<sup>24</sup> This concept was confirmed by a study by Andrei Rogers who found that the clustered spatial pattern exhibited by consumer goods retailers appears to contradict a common hypothesis that these stores tend to repel one another.<sup>25</sup>

While Rogers suggests that population densities have a lot to do with the clustering, there is significant economic theory that suggests that the tendency of activities to cluster is related more to competitive characteristics than to generalized demographic characteristics.<sup>26</sup>

Using this model JDA calculates that a distillery existing alone in a county would receive just over 10,390 visitors in a year, and that the number of annual tourist visitors would rise linearly at a rate of about 12 additional visits per year for each additional distillery in the county. As such, a county with 5 distilleries would see just roughly 52,160 visits, while one with 10 distilleries would report nearly 104,850.

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<sup>22</sup> 2012 Economic Census - Retail Trade: Subject Series - Product Lines: Product Lines Statistics by Industry for the U.S. and States: 2012, United States Census Bureau.

<sup>23</sup> Table 2.4.5U Personal Consumption Expenditures by Type of Product, U.S. Department of Commerce – Bureau of Economic Analysis.

<sup>24</sup> See: DeFranco, Laurence, William Liley III, and John Dunham, *The Case of the Transient Taxpayer: How Tax-Driven Price Differentials for Commodity Goods Can Create Improbable Markets*, Business Economics, July 1998.

<sup>25</sup> See: Rogers, Andrei, *A Stochastic Analysis of the Spatial Clustering of Retail Establishments*, Journal of the American Statistical Association, December 1965.

<sup>26</sup> See: Braid, Ralph, *Spatial Price Competition with Consumers on a Plane, at Intersections, and Along Main Roadways*, Journal of Regional Science, Vol 33, No. 2, 1993.

Multiplying out the number of visits across the 62 counties in New York with distilleries gives a total of nearly 1,672,120 unique visits. These are people specifically visiting the New York distilled spirits producing counties with distilleries. The bulk of these are local visitors attending an event, having dinner or just stopping by to purchase a bottle of spirits. No state specific data are available to estimate the number of distilleries each individual visitor goes to on a trip, however, an extensive survey of wineries in Napa California, can serve as a proxy. According to that study each person visits on average about 3.2 wineries. So dividing visits by 3.2 gives an estimate of just over 507,900 actual visitors going to distilleries across the state.<sup>27</sup>

Once the number of visitors was calculated, spending propensities using data as broken into 25 industries based on percentages derived from the US Department of Commerce, Bureau of Economic Analysis.<sup>28</sup> These were in turn, combined into aggregate categories for processing with the IMPLAN model. As such, rather than basing the direct tourism impact on jobs (as with the rest of the study), it is based on estimated visitor spending on key tourism categories.

### Charitable Contributions

Charitable contributions are calculated as part of the economic impact model itself. The Bureau of Economic Analysis NIPA tables show spending per dollar of output for about 530 industry categories, including industries such as religious organizations, civic organizations, and social advocacy organizations. JDA estimated the charitable contributions of the industry by analyzing the impacts in individual and family services, community food, housing, and other relief services, including rehabilitation services, performing arts companies, museums, historical sites, zoos, and parks, religious organizations, grantmaking, giving, and social advocacy organizations, and labor and civic organizations.

Economic output in each of these categories is aggregated together to estimate the charitable contributions attributed to the distilled spirits industry in New York.

### IMPLAN

The IMPLAN Group model is designed to run based on the input of specific direct economic factors. It uses a detailed methodology (see IMPLAN Methodology section) to generate estimates of the other direct impacts, tax impacts and indirect and induced impacts based on these entries.

Once the initial direct employment figures have been established, they are entered into a model linked to the IMPLAN database. The IMPLAN data are used to generate estimates of direct wages and output. Wages are derived from data from the U.S. Department of Labor's ES-202

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<sup>27</sup> See: *2014 Napa Valley Visitor Profile: Report of Findings*, prepared by Destination Analysts for Visit Napa Valley, March 2015, at <http://sodacanyonroad.org/docs/Napa%20Valley%202014%20Visitor%20Profile%20Study%20-%20Final%20Report%20of%20Findings.pdf>. These were the only data available on visits per person that we have been able to find.

<sup>28</sup> U.S. Travel and Tourism Satellite Accounts, US Department of Commerce, Bureau of Economic Analysis, at: [http://www.bea.gov/industry/tourism\\_data.htm](http://www.bea.gov/industry/tourism_data.htm). The following categories were used in the analysis: Traveler accommodations, food services and drinking places, domestic passenger air transportation services, international passenger air transportation services, passenger rail transportation services, passenger water transportation services, interurban bus transportation, interurban charter bus transportation, urban transit systems and other transportation services, taxi service, scenic and sightseeing transportation services, automotive rental, other vehicle rental, automotive repair services, parking lots and garages, highway tolls, travel arrangement and reservation services, motion pictures and performing arts, spectator sports, participant sports, gambling, all other recreation and entertainment, gasoline, retail Sales, food stores.

reports that are used by IMPLAN to provide annual average wage and salary establishment counts, employment counts, and payrolls at the county level. Since this data only covers payroll employees (those eligible for unemployment insurance), they are modified to add information on those who are not, such as: independent workers, agricultural employees, and construction workers. Data are then adjusted to account for counties where non-disclosure rules apply. Wage data include not only cash wages, but health and life insurance payments, retirement payments, and other non-cash compensation as well. They include all income paid to workers by employers.

Total output is the value of production by each industry in a state. It is estimated by IMPLAN from sources similar to those used by the BEA in its RIMS II series. Where no Census or government surveys are available, IMPLAN uses models such as the Bureau of Labor Statistics' growth model to estimate the missing output.

The model also includes information on income received by the federal, state, and local governments, and produces estimates for the following taxes at the federal level: corporate income, payroll, personal income, estate and gift, excise taxes, customs duties, and fines, fees, etc. State and local tax revenues include estimates of corporate profits, property, sales, severance, estate and gift and personal income taxes as well as licenses, fees, and certain payroll taxes.

## **IMPLAN Methodology<sup>29</sup>**

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Input-output analysis, for which Wassily Leontief received the 1973 Nobel Prize in Economics for, is an econometric technique used to examine the relationships within an economy. It captures all monetary market transactions for consumption in a given period and for a specific geography. The IMPLAN model uses data from many different sources – as published government data series, unpublished data, sets of relationships, ratios, or as estimates. IMPLAN gathers this data, converts them into a consistent format, and estimates the missing components.

There are three different levels of data generally available in the United States: federal, state, and county. Most of the detailed data are available at the county level, but there are many issues with disclosure, especially in the case of smaller industries. IMPLAN overcomes these disclosure problems by combining a large number of datasets and estimating variables that are not found in the merged data. The data are then converted into national input-output matrices (Use, Make, By-products, Absorption, and Market Shares) as well as national tables for deflators, regional purchase coefficients, and margins.

The IMPLAN Make matrix represents the production of commodities by industry. The Bureau of Economic Analysis (BEA) Benchmark I/O Study of the US Make Table forms the bases of the IMPLAN model. The Benchmark Make Table is updated to current year prices and rearranged into the IMPLAN sector format. The IMPLAN Use matrix is based on estimates of final demand, value-added by sector, and total industry and commodity output data as provided by government statistics or estimated by IMPLAN. The BEA Benchmark Use table is then bridged to the

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<sup>29</sup> This section is paraphrased from IMPLAN Professional: Users Guide, Analysis Guide, Data Guide, Version 2.0, MIG, Inc., June 2000.

IMPLAN sectors. Once the re-sectoring is complete, the Use tables can be updated based on the other data and model calculations of interstate and international trade.

In the IMPLAN model, as with any input-output framework, all expenditures are in terms of producer prices. This allocates all expenditures to the industries that produce goods and services. As a result, all data not received in producer prices are converted using margins derived from the BEA Input-Output model. Margins represent the difference between producer and consumer prices. As such, the margins for any good add up to one.

Deflators, which account for relative price changes during different time periods, are derived from the Bureau of Labor Statistics (BLS) Growth Model. The 224 sector BLS model is mapped to the 544 sectors of the IMPLAN model. Where data are missing, deflators from BEA's Survey of Current Businesses are used.

Finally, the Regional Purchase Coefficients (RPCs) – essential to the IMPLAN model – must be derived. IMPLAN is derived from a national model, which represents the “average” condition for a particular industry. Since national production functions do not necessarily represent particular regional differences, adjustments need to be made. Regional trade flows are estimated based on the Multi-Regional Input-Output Accounts, a cross-sectional database with consistent cross interstate trade flows developed in 1977. These data are updated and bridged to the 544 sector IMPLAN model.

Once the databases and matrices are created, they go through an extensive validation process. IMPLAN builds separate state and county models and evaluates them, checking to ensure that no ratios are outside of recognized bounds. The final datasets and matrices are not released until extensive testing takes place.

## **Appendix**

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Data by Legislative District

# 2020 New York State Distilling Industry Economic Impact

<b>Direct Economic Impact</b>			
	<b>Jobs</b>	<b>Wages</b>	<b>Output</b>
Distillery	1,349	\$348,577,800	\$2,748,828,700
Wholesale	66	\$7,338,000	\$24,933,500
Retail	3,259	\$119,872,800	\$276,056,000
On-Premise Retail	2,097	\$77,752,500	\$180,490,800
Off-Premise Retail	1,162	\$42,120,300	\$95,565,200
Tourism	1,336	\$61,598,400	\$150,690,400
<b>Total</b>	<b>6,010</b>	<b>\$537,387,000</b>	<b>\$3,200,508,600</b>

<b>Supplier Economic Impact</b>			
	<b>Jobs</b>	<b>Wages</b>	<b>Output</b>
Agriculture	30	\$1,213,900	\$3,766,100
Business and Personal Services	647	\$64,544,500	\$105,981,500
Mining	3	\$570,000	\$903,300
Construction	21	\$1,619,800	\$4,825,800
Finance Insurance and Real Estate	315	\$26,501,200	\$100,415,400
Manufacturing General	163	\$13,378,300	\$56,623,800
Retail	38	\$1,905,800	\$4,835,200
Transportation & Communication	298	\$28,260,800	\$97,944,600
Travel and Entertainment	140	\$5,845,900	\$12,108,200
Wholesaler	577	\$61,160,600	\$199,780,000
Government	47	\$4,994,800	\$7,784,400
Other	0	\$0	\$0
<b>Total</b>	<b>2,279</b>	<b>\$209,995,600</b>	<b>\$594,968,300</b>

<b>Induced Economic Impact</b>			
	<b>Jobs</b>	<b>Wages</b>	<b>Output</b>
Agriculture	11	\$269,900	\$860,800
Business and Personal Services	1,585	\$109,054,200	\$188,443,700
Mining	1	\$192,100	\$274,100
Construction	19	\$1,367,700	\$4,257,900
Finance Insurance and Real Estate	341	\$33,874,900	\$187,416,400
Manufacturing General	29	\$2,151,900	\$11,464,500
Retail	433	\$18,894,900	\$45,670,300
Transportation & Communication	164	\$15,844,100	\$62,023,800
Travel and Entertainment	465	\$17,319,600	\$41,675,000
Wholesaler	69	\$7,422,600	\$25,045,700
Government	38	\$4,330,300	\$7,841,200
Other	94	\$4,085,800	\$5,387,500
<b>Total</b>	<b>3,249</b>	<b>\$214,808,000</b>	<b>\$580,360,900</b>

	<b>Jobs</b>	<b>Wages</b>	<b>Output</b>
<b>Total</b>	<b>11,538</b>	<b>\$962,190,600</b>	<b>\$4,375,837,800</b>

### **Taxes Generated: Business and Personal**

Federal	\$299,684,083
State and Local	\$911,437,347
<b>Total Business and Personal Taxes</b>	<b>\$1,211,121,430</b>

### **Taxes Paid: Consumption**

Federal Tax	\$91,091,800
State and Local Taxes	\$237,733,400
Excise Tax	\$91,536,800
Sales Tax	\$140,053,100
New York City Liquor Tax	\$6,143,500
<b>Total Consumption Taxes</b>	<b>\$328,825,200</b>