

*The Economic and Fiscal Impacts  
of the  
Distilling Industry in Kentucky*  
for the



by

Barry Kornstein  
Research Manager

with

Jay Luckett  
Graduate Research Assistant

Urban Studies Institute, University of Louisville



October, 2014

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	1
THE SIZE OF THE DISTILLING INDUSTRY IN KENTUCKY .....	7
Industry definition, number of companies and locations .....	7
Employment and payroll.....	9
Distilling's Share of Kentucky Gross State Product .....	13
Recent investments at Kentucky distilleries .....	14
Craft Distilleries.....	15
Production and sales .....	19
Domestic sales .....	21
Exports .....	22
ECONOMIC IMPACTS.....	22
Linkages to other sectors .....	22
Economic multipliers.....	26
Comparison of distilling industry impacts with other industries.....	28
Total economic impact of distillery company operations .....	28
Impact of construction activity .....	31
Impact of capital equipment investment activity.....	32
Total average annual impact possible from distilling industry planned investments .....	33
Potential impact from an increase in local sourcing of grain inputs.....	34
Spent grain.....	37
TAXATION AND FISCAL IMPACTS OF THE INDUSTRY.....	38
Property taxes .....	40
Alcohol consumption taxes .....	43
State licenses and fees.....	50
Local licenses and fees.....	51
Tax revenues related to payroll of distilleries .....	51
Comparison to the 2012 study .....	53
THE KENTUCKY BOURBON TRAIL® AND ITS TOURISM POTENTIAL.....	54
Sites, visitation data.....	56
Visitor profiles, impacts .....	57
Other tourism-related activity .....	63

## **The Economic and Fiscal Impacts of the Distilling Industry in Kentucky**

Kentucky is known internationally for its Bourbon whiskey. The state produces and ages perhaps 95 percent of all the Bourbon in the world. Kentucky's distillers are also involved in distilling other spirits and bottling, packaging and shipping many different kinds of distilled spirits (often distilled elsewhere and brought to Kentucky facilities for final processing). Nearly all of the products are shipped to customers outside of Kentucky, meaning the dollars generated from sales are 'new' to Kentucky. The dollars support the wages, salaries and benefits of workers in the state's distilling industry, as well as those employed by suppliers. The dollars circulate further, as employees and owners spend their income in the regional economy, generating jobs and income in grocery stores, car dealers, banks, restaurants, doctors' offices, and the like.

This study is the third statewide study of the distilling industry which we have conducted since 2009. We also analyzed the distilling industry in Jefferson County, Kentucky, in 2013. The current study updates and expands on our second statewide study, which we conducted nearly three years ago. We provide a comprehensive statement of the size and economic importance of the distilling industry in Kentucky, including an examination of the burgeoning craft distilling segment of the industry. We also look at the industry's impact on the state's agricultural sector; provide estimates of the state and local government tax revenues associated with the industry; a look at Kentucky's tax treatment of the industry compared to other states; and an estimate of the economic potential of the emerging Bourbon-tourism component.

The Kentucky Agricultural Development Fund contributed funding for the completion of this study. The KADF recognizes the importance Bourbon has on the Commonwealth's agricultural sector and sought to capture the overall economic impact it brings to Kentucky's farm families.

Among the most important and interesting findings are:

- There are currently 31 companies with Kentucky distiller's licenses. Of those, 26 are either long-enough established that they are listed in the Kentucky Directory of Manufacturers or members of the Kentucky Distillers' Association (KDA), the non-profit trade group founded in 1880. The remaining five are small craft distilleries that qualify for the new Class B distiller's license for businesses producing less than 50,000 gallons per year (about 950 Bourbon barrels or 21,000 nine-liter cases). Of the 26 established distillers, 14 also qualify for the new Class B license.
- The 26 distillers have establishments in 37 locations, situated in 22 cities in 19 counties. The remaining five add four more counties to the list. Our previous study, nearly three years ago, encompassed just 10 companies, with 19 locations in nine cities and eight counties. Most of these companies were familiar industry names. While the larger new distillery projects

continue to be located in the area roughly bounded by interstate 64, the Bluegrass Parkway, and interstate 65, smaller craft distilleries are opening up all across the state.

- Kentucky stands out nationally in Bourbon production, accounting for as much as 95 percent of the U.S. total. This is an industry that could feasibly be located in another state, and one in which Kentucky has managed to dominate. Moreover, the industry is very stable during economic downturns, helping to diversify the economic base in the state. But with new micro-Bourbon distilleries now opening around the country, there is fresh competition among locations for the industry.
- There has been significant growth in employment and payroll in the distilling industry since our previous study. While there is no definitive source for industry employment data, the most comprehensive source is the Quarterly Census of Employment and Wages (QCEW) because it includes more of the managerial employees. The latest data for the QCEW, for 2013, shows a 10 percent increase in employment from 2012, to 3,594 employees at an average salary of \$91,188. The corresponding figures for 2010, cited in our previous study were 3,103 employees with an average salary of \$79, 171.
- The distilling industry in Kentucky is much more stable in terms of employment than the manufacturing industry as a whole. This is especially clear since the turn of the century. Distilling industry employment is up 20.8 percent since 2000 in the QCEW while manufacturing employment as a whole is down 26.3 percent.
- Kentucky accounts for 40 percent of all distilling industry employment in the United States and 50 percent of industry wages for 2013, according to the QCEW.
- Based upon our survey of KDA members plus other public sources of information, we estimate that there are currently between 3,800 and 3,850 people employed in the industry. About 1,450 of those are performing functions usually associated with corporate, subsidiary, or regional managing offices. These are the 2014 employment numbers upon which our subsequent economic and fiscal impact analysis is based. They represent a 23 percent increase over the 2010 employment numbers we used in the previous study.
- Among the 245 detailed manufacturing industries with operations in Kentucky, the only one with both more jobs and a higher employment multiplier is animal (except poultry) slaughtering, rendering, and processing. Motor vehicle parts production has by far the most employees, but its multiplier is much smaller. Moreover, several non-manufacturing industries that receive considerable public attention have much lower employment multipliers, including insurance carriers, coal mining, and the courier and messenger industry.
- The Bourbon production, as well as the management and marketing of Bourbon brands, is linked to many other Kentucky industries. This includes obvious support industries like wooden barrels and pallets, plastic bottles, trucking, farming, distillery equipment

manufacturers and electricity. Hundreds of other less obvious industries are impacted directly or indirectly, and these account for the relatively high employment and payroll multipliers for distilling. We estimate that the Kentucky distilling industry is responsible for a total of 15,400 jobs in the state, with a total annual payroll of \$707 million.

- Kentucky distillers have invested over \$400 million in capital improvement projects since 2008. In addition, there is \$630 million in projects planned over the next five years. We modeled this as a combination of construction and capital equipment purchases and estimate it could support an average of 1,470 jobs in Kentucky through 2019. Those jobs would have about \$43 million in payroll and generate about \$4.2 million in combined state and local income and sales taxes each year during the period. The real estate improvements could mean an additional \$840,000 in property tax revenues each year to local and state governments.
- The industry's value added in production (a measure of gross output minus intermediate inputs) grew rapidly from 2000 to 2012, tripling in value over the twelve years from \$1 billion to \$3 billion. In addition, its share of total state product has increased from 0.9 to 1.7 percent during that time, nearly doubling its importance to the state's overall economy.
- Between 2008 and 2013, Kentucky distillers spent well over \$400 million on capital improvement projects to increase production capacity and enhance the visitor experience. We found that total assessments on real and tangible business property and on the barrels aging in bonded warehouses increased by \$687 million from 2009 to 2013 (54 percent).
- As our count of distilleries illustrates, the number of craft distilleries (generally those that produce fewer than 50,000 gallons of product annually) has grown tremendously in the last few years. We estimate that Kentucky craft distilleries combine to employ 127 people with salaries totaling over \$4 million. Most are still at the stage where they are producing a very modest number of barrels, but altogether they have invested about \$30 million in land, buildings, and equipment since 2008, and expect to invest another \$25-\$30 million during the next five years.
- Even with this growth, Kentucky is behind the curve in craft distilling. Nationally, craft distilling began to take off in 2007, with five states (Washington, New York, Colorado, Oregon, and Texas) leading the way. These five states had one significant thing in common – their state legislatures enacted new rules that relaxed regulations and lowered entry costs, and followed up with state agency action that encouraged people to take advantage of the new climate.
- The Kentucky General Assembly recently responded to the challenge with the passage of House Bill 445, which offers distilleries a corporate income tax credit against the amount of barrel taxes paid, and requires distilleries to reinvest that money into their Kentucky operations, and Senate Bill 83 (effective on July 15, 2014) which created a new craft distiller's license for those businesses producing fewer than 50,000 gallons per year, with an annual fee

of \$1,000 compared to the regular license fee of \$3,090. Under HB 445, Kentucky lawmakers virtually eliminated the ad valorem “barrel” tax, which is levied each year on aging barrels. Kentucky is the only place in the world that charges manufacturers such a tax, which competing states used against the Commonwealth to discourage new distilleries from locating here. Kentucky’s new system is not as generous with regard to production limits, lowered fees, distribution channels, sampling laws or visitor center purchasing limits as the five leading states, but Kentucky has a powerful cultural heritage involving Bourbon and other types of distilling and has already experienced some significant activity in the craft sector of the industry over the last few years, so we may now be on the verge of the boom experienced elsewhere.

- According to the Distilled Spirits Council of the U.S. (DISCUS), domestic case sales of Bourbon and Tennessee whiskey have grown by almost 20 percent over the past five years, and gross revenues from those sales have grown by 34 percent. This reflects the continuing shift towards more high-end products, as the average revenue per case rose from \$121 to \$136 between 2008 and 2013. While exact figures are not publicly available, Bourbon makes up roughly half of that total. Gross revenues to Kentucky distillers from U.S. sales of Bourbon are estimated to have been around \$1.25 billion in 2013.
- Bourbon and Tennessee whiskey accounted for \$1 billion of the total of \$1.5 billion in distilled spirits exports in 2013. By volume, Kentucky Bourbon and Tennessee whiskey made up 38 percent of all spirits exported in 2013. Kentucky’s whiskey exports have topped \$300 million each of the last two years, and have grown in dollar terms by 55 percent since 2010. Overall, Kentucky is the second largest exporter of distilled spirits among the states, trailing only Tennessee.
- We looked at the distilling industry’s impact on the agricultural sector of the economy through its purchases of grains (i.e. corn, wheat, rye and malted barley). Currently, Kentucky distillers buy about 40 percent of the grain they use from in-state farmers. These purchases support about 1,360 farm jobs and \$56 million in farm output in Kentucky, and an additional 100 jobs in the agricultural support sector having a payroll of \$2 million.
- Kentucky farmers could potentially supply up to 80 percent of the state’s distillers’ grain needs. If they did so, then the distilling industry’s impact on the agricultural sectors would just about double in size, and there would be an additional impact of 210 jobs with a payroll of about \$5.7 million spread throughout the rest of the economy. Several distillers in our survey expressed a desire to purchase only corn from non-genetically engineered seeds or that is grown organically. Working with distillers to meet those particular requirements is one avenue Kentucky’s farmers can pursue to increase their corn sales to the state’s distilling industry.
- The grain solids that remain after the distillation process ends can be collected and used either in wet form or after drying as a feed supplement for livestock (most commonly cattle).

Known as spent grain, the wet form has a fairly short shelf life and is usually economically viable only within an hour drive of the source, but the dried form can be shipped as a commodity around the world. Kentucky distillers sometimes dry their spent grain and sell it, but about as often as not they give away the wet form to area farmers. We estimate that Kentucky distillers gave away about \$2.5 million worth of the wet form of spent grain last year, while giving up about \$5 million in potential revenue from drying and selling this spent grain.

- Kentucky state and local governments directly tax both the production and consumption of distilled spirits, the property owned by the companies, the wages earned by employees, and corporate net income. They also require licenses to produce or sell distilled spirits. We estimate that the state and local governments receive about \$166 million annually from spirits production and consumption, and these tax receipts have increased 18 percent since 2010. Consumption taxes of some sort would be paid whether the industry produced Bourbon in Kentucky or not. However, we estimate that the production component accounts for \$91 million of the annual total.
- Among the 33 open market states (as opposed to the control states where the state government sells spirits through state-owned or price-regulated outlets), Kentucky taxes distilled spirits at the fifth highest rate behind just Washington, Alaska, Minnesota, and Illinois. Among our border states, only Illinois and control states Ohio and Virginia tax distilled spirits at rates higher than Kentucky. This contrasts starkly with the tax climate in the leading wine and beer producing states, where their tax rates are among the lowest in the nation.
- We estimate that in 2013, distillers paid about \$11.9 million in distilled spirits property taxes for their barrels aging in warehouses and \$3.6 million in property taxes on their buildings, land, equipment, and inventory. These property taxes go to schools, city governments, county governments, other local districts, and state government. Schools receive about 62 percent of the distilled spirits tax receipts and 45 percent of the real and tangible tax revenues.
- The distilling industry in Kentucky is also responsible for many other taxes to state and local governments. The largest recipient is Kentucky state government, with total distillery-related wages and salaries generating \$61.3 million in individual income and sales tax receipts annually. This is an increase of about 30 percent over 2010.
- Overall, annual state and local government tax receipts related to spirits production amount to almost \$24,000 per distilling industry employee.
- The Kentucky Bourbon Trail® experience has emerged as a significant tourism destination. Roughly 60,000 people, approximately 84 percent from out-of-state, had completed their Passports by visiting all of the Kentucky Bourbon Trail® distilleries by the end of 2013.

Surveys revealed the visitors on average to be relatively affluent, with multi-night hotel stays in Kentucky.

- Based upon the survey results, information from the distillers and other tourism surveys, we modeled the spending of a typical out-of-state party, averaging 2.49 people, completing the Kentucky Bourbon Trail® during a three-night stay in Kentucky. We expect such parties to spend an average of \$978 during the three days on lodging, meals, transportation, distillery spending, and other items. In recent years, there have been roughly 5,500 of these traveling parties completing the Kentucky Bourbon Trail® Passport each year. Our model indicates that this number of Passport completing parties spends enough to support 104 jobs with a combined payroll of nearly \$2.1 million each year, and increases economic activity by \$7.5 million dollars a year. We estimate that the fiscal impact on state and local governments is around \$615,000, with most of that total going to state government via sales and lodging taxes. Since Kentucky Bourbon Trail® Passport holders account for just 20 to 25 percent of all distillery tour attendance, it is possible that total visitation impacts are significantly greater.

## **The Size of the Distilling Industry in Kentucky**

We first examine the economic size of the distilling industry in Kentucky, focusing only on the actual distilling sites and companies in the state. There are several ways to measure the size of the industry, including number of establishments, company revenues, shipments, employees, and payrolls. Moreover, there are several data sources each for many of these measures; and, because of survey, reporting and classification differences, the numbers often do not line up. We have attempted to organize everything publicly available in this section, and we discuss the various estimates below.

### **Industry definition, number of companies and locations**

We treat the industry here as the collection of firms that earn revenues primarily from distilling and selling spirits. These firms may engage in other revenue-generating activities, such as making wooden barrels, biotechnology research, managing and marketing other product lines (including wines and non-spirits products), and selling merchandise in their gift shops. Nevertheless, we presume the companies would not be located in Kentucky were it not for their distilling operations, and hence for purposes of this study we attempt to count all of their activity as part of the industry.

Generally speaking, economic statisticians attempt to classify industrial activity by business establishment, or location. If a distilling company makes barrels in one location, distills Bourbon in another location, ages it in warehouses at another location, and has corporate offices at yet another location, then the company might have activity listed under four different industrial classifications. The table on the following page is a comprehensive list of the current distilling industry operations in Kentucky. It is based on distiller's licenses issued by the Kentucky Department of Alcoholic Beverage Control, the select Kentucky searchable database of the Kentucky Cabinet for Economic Development and the membership of the Kentucky Distillers' Association (KDA). It includes all the locations (distilling, bottling, warehouse, and office) of each company.

There were 26 companies with distiller's licenses that were also either in the searchable database or members of the KDA. These 26 companies did business at 37 locations in 22 cities and 19 counties in Kentucky. There were an additional five license holders not listed elsewhere. Quite a few in the list are fairly new craft distilleries and there have been other craft distilleries announced but not far enough along in their development to be included in our sources. The big players in the distilling industry in Kentucky currently are Jim Beam, Brown-Forman, Diageo, Four Roses, Heaven Hill, Maker's Mark, Sazerac, and Wild Turkey.

Our previous study, nearly three years ago, encompassed just 10 companies, with 19 locations in nine cities and eight counties. Most of these companies were the familiar industry names above. While the larger new distillery projects continue to be located in the area roughly bounded by interstate 64, the Bluegrass Parkway, and interstate 65, smaller craft distilleries are opening up all across the state.

**Distiller's License Holders that are also Either Listed in the Kentucky Directory of  
Manufacturers or Members of the Kentucky Distillers' Association, as of October 6, 2014**

<b>Distiller Name</b>	<b>City</b>	<b>County</b>
Barton 1792 Distillery (Sazerac North America)	Bardstown	Nelson
Buffalo Trace Distillery (Sazerac North America)	Frankfort	Franklin
The Glenmore Distillery (Sazerac North America)	Owensboro	Daviess
Barrel House Distilling Company	Lexington	Fayette
Jim Beam Brands Co	Boston	Nelson
Jim Beam American Outpost	Clermont	Bullitt
Jim Beam Brands Co	Frankfort	Franklin
Jim Beam Brands Co	Louisville	Jefferson
Boundary Oak Distillery	Elizabethtown	Hardin
Brown-Forman Corp	Louisville	Jefferson
Early Times Distillers Co (Brown-Forman)	Louisville	Jefferson
The Woodford Reserve Distillery (Brown Forman)	Versailles	Woodford
Copper & Kings American Brandy Company	Louisville	Jefferson
Corsair Artisan LLC	Bowling Green	Warren
Diageo Americas Supply Inc	Louisville	Jefferson
Dueling Grounds Distillery LLC	Franklin	Simpson
Four Roses Distillery	Lawrenceburg	Anderson
Four Roses Distillery	Coxs Creek	Bullitt
Grease Monkey Distillery (Distilled Spirits Epicenter)	Louisville	Jefferson
Heaven Hill Distilleries Inc	Bardstown	Nelson
Heaven Hill Distilleries Inc	Louisville	Jefferson
The Evan Williams Bourbon Experience (Heaven Hill)	Louisville	Jefferson
Kentucky Artisan Distillery	Crestwood	Oldham
Kentucky Bourbon Distillers Ltd (Willett)	Bardstown	Nelson
Alltech's Lexington Brewing and Distilling Co. (Town Branch)	Lexington	Fayette
Limestone Branch Distillery	Lebanon	Marion
Maker's Mark Distillery Inc (Beam Suntory)	Loretto	Marion
Maker's Mark Distillery Inc (Beam Suntory)	Louisville	Jefferson
MB Roland Distillery	Pembroke	Christian
Michters Distillery	Louisville	Jefferson
New Riff Distilling	Newport	Campbell
Old Pogue	Maysville	Mason
Silver Trail Distillery	Hardin	Marshall
The Gentleman	Paris	Bourbon
Three Boys Farm Distillery	Frankfort	Franklin
Wild Turkey Distillery (Gruppo Campari)	Lawrenceburg	Anderson
Wilderness Trail Distillery	Danville	Boyle

**Companies: 26    Locations: 37    Cities: 22    Counties: 19**

**Additional Distiller's License Holders not Listed Elsewhere**

Bluegrass Distillers	Lexington	Fayette
Olde Towne Distillery	Harrodsburg	Mercer
Paducah Distilled Spirits	Paducah	McCracken
Second Sight Spirits	Ludlow	Kenton
Wadelyn Ranch Distilling LLC	Waynesburg	Lincoln

Sources: Kentucky Economic Development Cabinet; Kentucky Department of Alcoholic Beverage Control; Kentucky Distillers' Association.

## Employment and payroll

There are three primary federal sources for state level industry data on employment and payroll. They are County Business Patterns (CBP), the Quarterly Census of Employment and Wages (QCEW), and the Economic Census. CBP is produced by the U.S. Census Bureau and is based primarily on company filings of payroll taxes, including Social Security, at the federal level. The QCEW is compiled by the U.S. Bureau of Labor Statistics, and is based on company payments of unemployment insurance taxes through state workforce agencies. Aside from being based on different data they also have different master lists of business establishments. The County Business Patterns establishment list is derived from a database called the Business Register, which consolidates and links administrative, Census, and survey data. Information for single establishment businesses is updated continuously, while information for establishments of multi-unit companies is updated annually based on responses to the Census Bureau's Company Organization Survey and Annual Survey of Manufactures. The QCEW establishment list relies upon the state workforce agencies, and multi-establishment data is derived from quarterly Multiple Worksite reports filed by companies. However, not all multi-unit companies file the reports and some aggregate establishments within them. The other data source, the Economic Census, produced by the U.S. Census Bureau, also relies on the Business Register and is the most comprehensive, but is only available every five years (years ending in the numbers 2 and 7). Economic Census data for the distilling industry is available at the national level, but not yet at the state level.

In short, there is no definitive source for employment and payroll information on the distilling industry. The following tables compare the three datasets. Note that the employment and payroll figures for the QCEW differ significantly from those of the other two data sources. We believe much of the difference is due to the treatment of some corporate headquarters activity, with the QCEW program including it and the other two excluding it. The large difference in payrolls is consistent with this explanation, since corporate office employees typically have advanced educational credentials and skills, and thus earn much higher incomes than production workers. But this is probably not the entire story, especially in the later years where the difference in the number of employees fluctuates quite a bit. In addition, the data for the 2007 Economic Census and that year's CBP differ a great deal despite both ostensibly being based on the Business Register. The Economic Census numbers should be seen as the "correct" ones. Finally, the salary differential

between QCEW and CBP for 2012 is unprecedented and indicates an establishment or two may have been counted differently from previous years in one or both of the datasets.

In general, however, there is an upward trend to both the QCEW and CBP, especially with regards to payroll. The latest data available from these sources, for 2013 from the QCEW, shows a 10 percent increase in employment from 2012, to 3,594 employees at an average salary of \$91,188.

**Distilling Industry Employees and Wages in Kentucky**  
**Comparison of Two Sources of Data**

Year	Employees		Average Salary		Difference between QCEW & CBP	
	QCEW	CBP	QCEW	CBP	Employees	Average Salary
1993	3,263	2,488	\$34,072	\$34,637	775	-\$565
1994	3,068	2,232	\$41,199	\$32,892	836	\$8,307
1995	3,005	2,198	\$43,143	\$33,181	807	\$9,962
1996	2,987	2,109	\$46,952	\$35,304	878	\$11,648
1997	2,978	2,140	\$49,402	\$35,252	838	\$14,150
1998	2,971	2,092	\$49,308	\$36,508	879	\$12,800
1999	2,992	2,077	\$48,702	\$37,157	915	\$11,545
2000	2,974	1,977	\$52,505	\$41,032	997	\$11,472
2001	2,945	1,927	\$53,190	\$41,168	1,018	\$12,022
2002	2,896	2,075	\$54,155	\$42,329	821	\$11,826
2003	2,907	2,042	\$57,868	\$43,083	865	\$14,785
2004	2,949	2,144	\$60,954	\$48,081	805	\$12,873
2005	3,005	2,047	\$67,660	\$48,607	958	\$19,053
2006	3,062	2,207	\$73,624	\$47,108	855	\$26,516
2007	3,167	1,681	\$74,685	\$48,234	1,486	\$26,451
2008	3,168	2,209	\$77,007	\$53,164	959	\$23,843
2009	3,100	1,903	\$72,772	\$54,953	1,197	\$17,820
2010	3,103	1,945	\$79,171	\$50,504	1,158	\$28,667
2011	3,208	1,897	\$79,818	\$56,637	1,311	\$23,181
2012	3,260	2,340	\$95,616	\$56,123	920	\$39,493
2013	3,594		\$91,188			

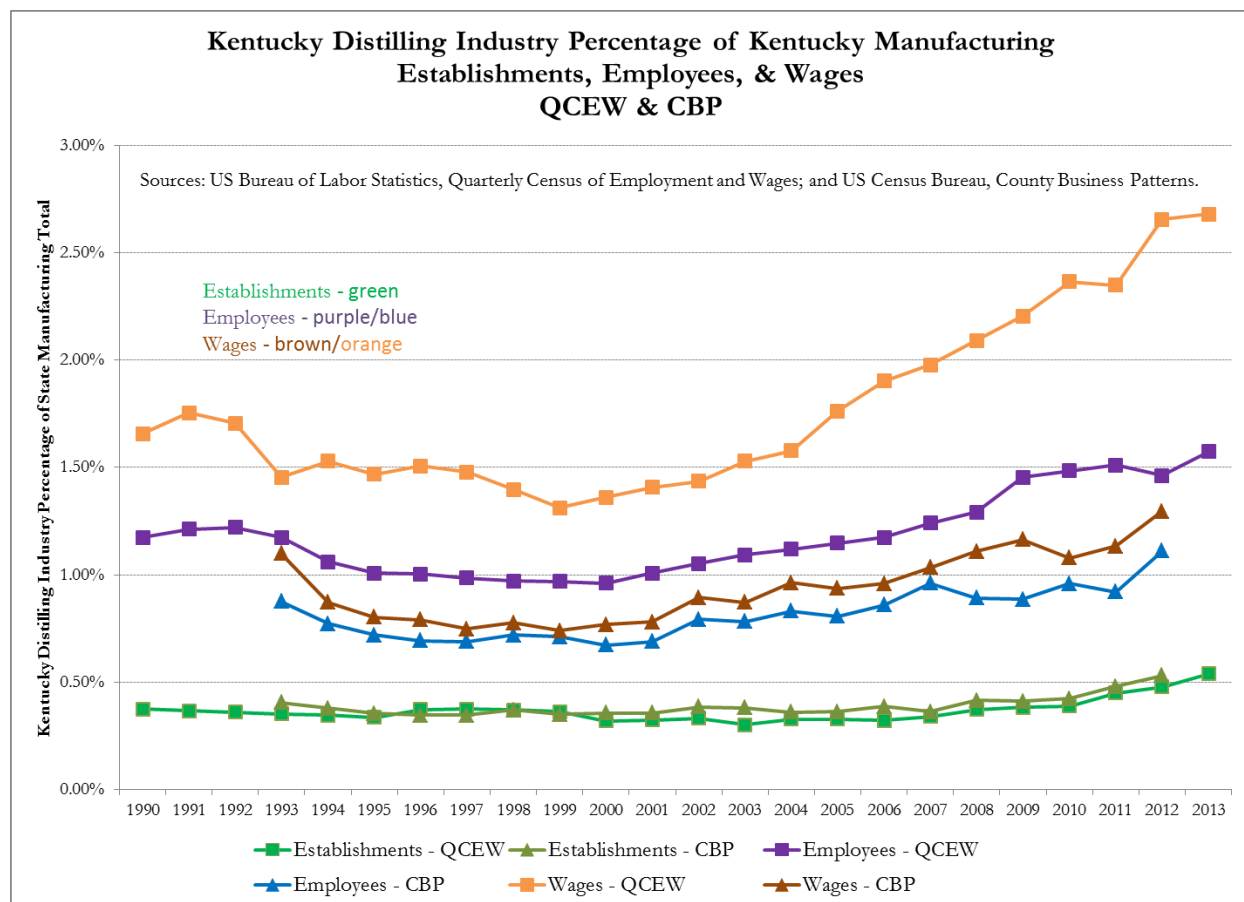
Sources: Quarterly Census of Employment and Wages (QCEW) and County Business Patterns (CBP). CBP only available through 2012.

### Comparison of Economic Census and QCEW Data on Distilling Industry

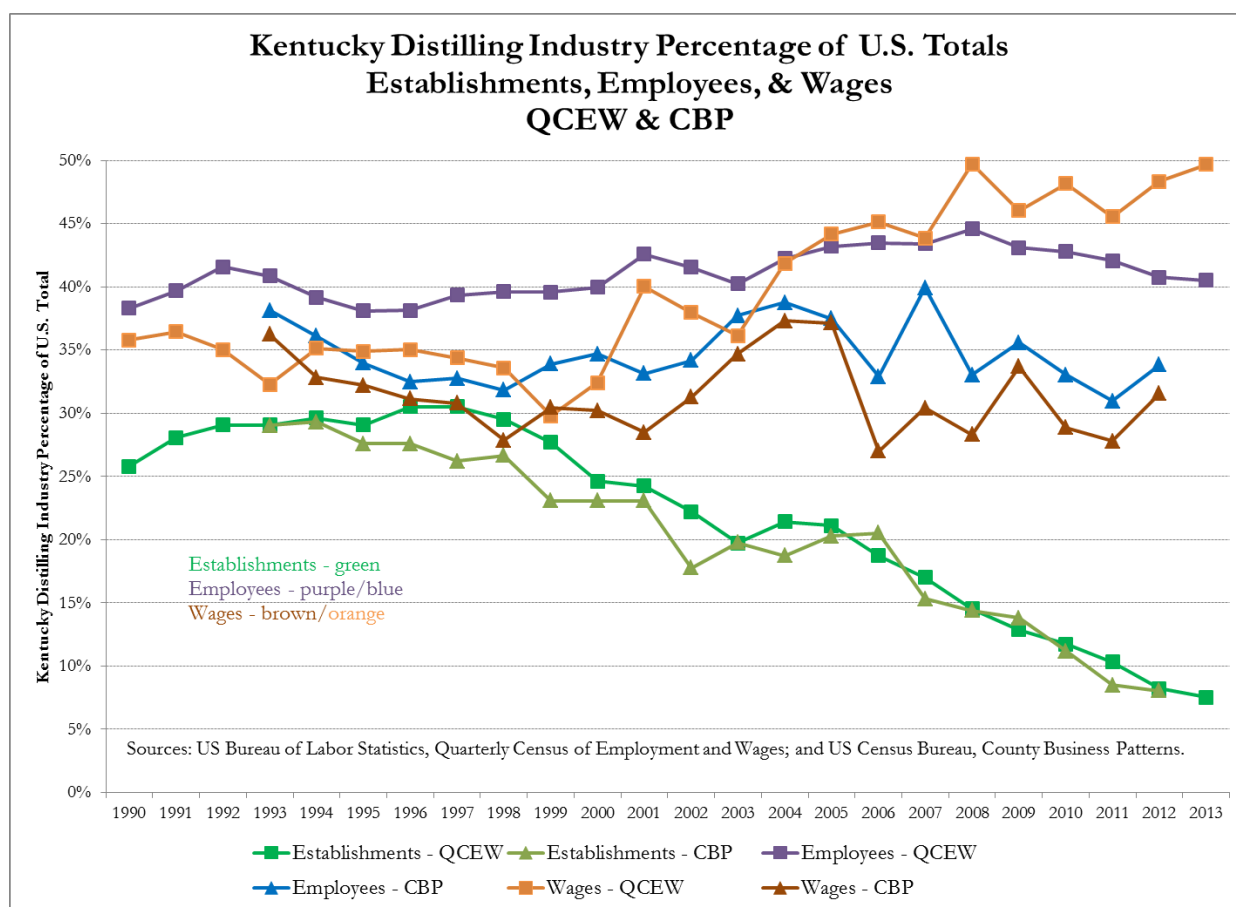
Year	Employees		Average Salary		Difference between QCEW & Census	
	QCEW	Census	QCEW	Census	Employees	Average Salary
2002	2,896	2,061	\$54,155	\$43,142	835	\$11,013
2007	3,167	2,391	\$74,685	\$46,571	776	\$28,114

Sources: Quarterly Census of Employment and Wages (QCEW), 2002 and 2007 Economic Censuses.

The distilling industry in Kentucky is much more stable in terms of employment than the manufacturing industry as a whole. This is especially clear since the turn of the century. Distilling industry employment is up 20.8 percent since 2000 in the QCEW while manufacturing employment as a whole is down 26.3 percent. The numbers are similar in CBP. The chart, which shows Kentucky's distilling industry as a percentage of all manufacturing in the state since 1990 illustrates this. While the distilling industry had a rough time in the 1990s, losing share in establishments, employees and wages, it has been on a sustained upward path for all three measures since 2000. The trend is particularly pronounced for employment and wages in the QCEW data. Alcoholic beverages are known to be fairly recession-proof, but Kentucky's distillers are riding the worldwide Bourbon boom.

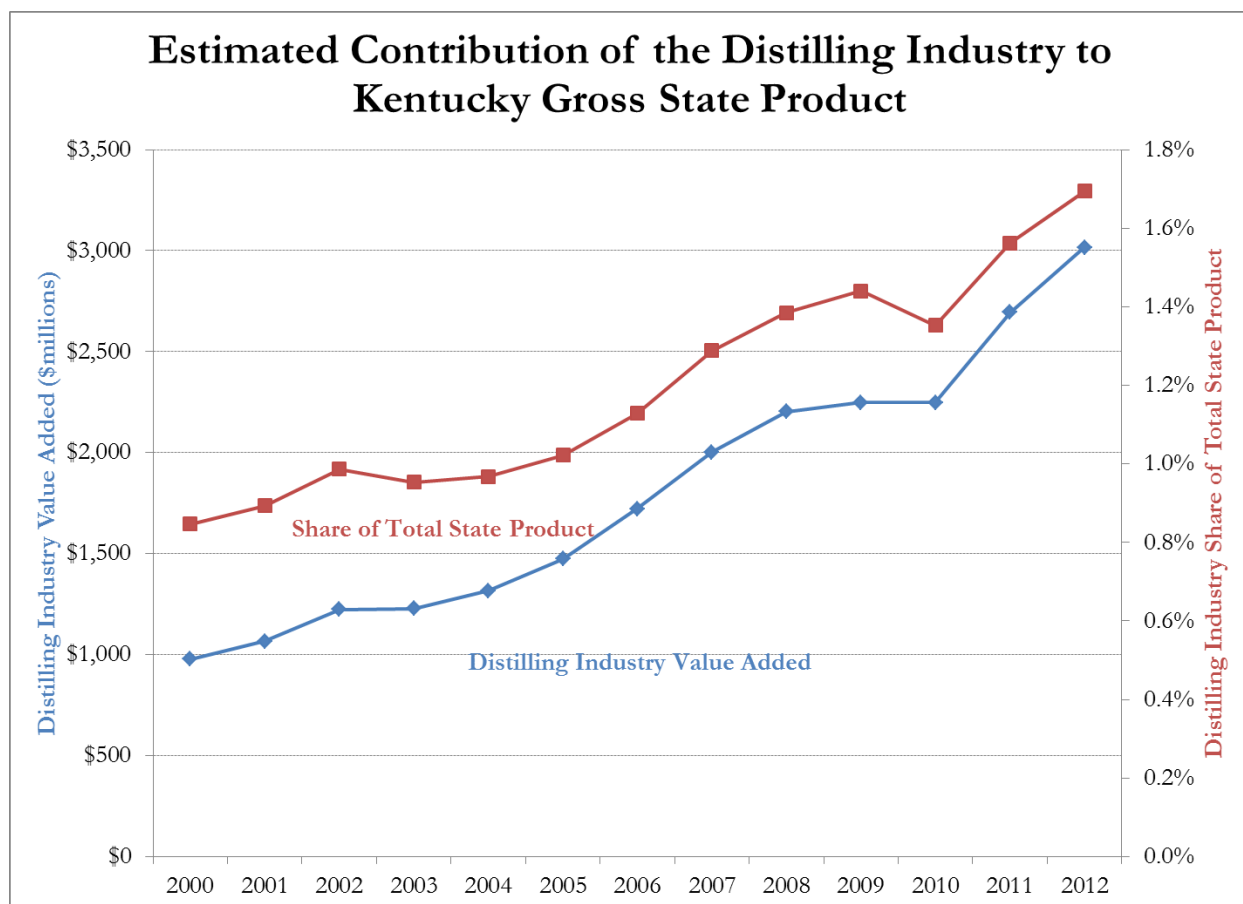


The distilling industry as a whole in the United States is undergoing an expansionary period, with employment having grown by about 20 percent since 2000. But as the chart shows, Kentucky distillers still account for a large share of all U.S. distilling employment and wages. In the QCEW data, which is much more inclusive of all the corporate management functions of the industry, Kentucky accounts for 40 percent of all distilling industry employment and 50 percent of industry wages for 2013. In the chart we can also see evidence of the incredible craft distilling expansion that has been occurring outside of Kentucky (and now seems poised to take off here). The number of distilling establishments outside of Kentucky has jumped from 49 in 2000 to 282 in the 2013 QCEW data (which tracks very closely to CBP on that measure), with most of that increase coming since 2007. In the same timeframe the number of Kentucky distilling establishments counted in the QCEW has increased much more modestly, from 16 to 23. So in terms of the number of establishments Kentucky went from 24.6 percent of the distilling industry in 2000 to 7.5 percent in 2013. Craft distilleries have become an important part of the industry, which we will discuss in detail later in this report.



## Distilling's Share of Kentucky Gross State Product

According to the latest estimates by the U.S. Bureau of Economic Analysis (BEA), Kentucky had a gross state product (GSP) of \$178 billion in 2012. This is a measure of the value added in production by the labor and capital located in a state (gross output minus intermediate inputs). BEA does produce estimates of the contribution of major industries to total output, but are not detailed enough to show the output of the distilling industry. However, we have used the published estimates for a more aggregate industry, along with detailed national data from the 2012 Economic Census, national and Kentucky data from the 2007 Economic Census, and several years of data from the IMPLAN economic impact modeling system, to construct some estimates for distilling in Kentucky for the years 2000 through 2012. We estimate that in 2012, value added in the distilling industry was \$3.0 billion, and accounted for 1.7 percent of total state value added. It is important to note that our previous report used a figure of \$1.8 billion which was based on the value of Bourbon production in the state. The current estimates also include other activities in which the state's distillers are involved, such as distilling other products and bottling, packaging and shipping many different kinds of distilled spirits (often distilled elsewhere and brought to Kentucky facilities for final processing).



The chart shows the estimated growth in distilling industry value added from 2000 to 2012, measured in nominal (not inflation adjusted) dollars. The blue line shows value added, and the red line (right scale) shows distilling's share of total value added statewide. We have used detailed industrial data on Kentucky from the 2007 Economic Census to measure distilling's share of total value added in the combined food, beverage and tobacco sector for which BEA publishes annual GSP estimates. For the years 2000 and 2008 through 2012 we used the IMPLAN value added data for the industry. The IMPLAN data for 2007 is nearly identical to the Economic Census, and the IMPLAN data's ratio of Kentucky distilling value added to overall U.S. distilling value added for 2008 is very close to the ratio in the 2007 Economic Census, so we feel confident in using the IMPLAN data. We interpolated the value added data between 2000 and 2007 based on the Kentucky distilling industry's share of the state's food, beverage, and tobacco sector. Industry output has clearly grown in Kentucky, tripling in value over the twelve years. In addition, its share of total state product has increased from 0.9 to 1.7 percent, nearly doubling in importance to the state's overall economic activity.

### **Recent investments at Kentucky distilleries**

The worldwide growth in demand for Bourbon, as well as increases in tourism related to the Kentucky Bourbon Trail® experience, has induced a recent wave of capital investments at Kentucky distilleries. There has been a steady flow of expansion announcements around Kentucky, including a new distillery, visitor center and packaging facility at Wild Turkey, new Bulleit distillery in Shelby County, expanded bottling and new warehouses at Maker's Mark, expanded visitor center at Jim Beam, expanded bottling capacity at Beam's Frankfort operation, Heaven Hill's Evan Williams Bourbon Experience in Louisville and the new Old Forester Distillery on Louisville's Whiskey Row by Brown-Forman. But the investments have not been limited to the largest distillers. For example, New Riff and Alltech created new distilleries in Newport and Lexington, and Kentucky Bourbon Distillers brought new life to the Willett Distillery in Bardstown, each one putting at least \$5 million into their project. In fact, between 2008 and 2013 Kentucky distillers spent well over \$400 million on capital improvement projects. This spending is showing up in county-level property tax assessment data. Distilling companies pay property taxes on their real estate (buildings and land), tangible property (manufacturing equipment, vehicles, office equipment), and their inventories of aging barrels. Each type of property is subject to different tax rates for different taxing jurisdictions. The value of each type of property at each site is determined annually by the county Property Valuation Assessor (PVA).

We have examined growth in assessments and tax payments for over 100 real property parcels, including any associated tangible property and inventories. We found that total assessments increased by \$687 million from 2009 to 2013 (54 percent), and in just the last two years, real, tangible, and inventory property increased by \$355 million (22 percent). Real property assessments increased by \$60 million, almost 35 percent, between 2011 and 2013, while tangible business property assessments grew by \$104 million (also 35 percent).

### Property Related Tax Assessments of Kentucky Distillers, 2009, 2011 & 2013

	Estimated Assessments			Percent Change
	2009	2011	2013	'11-'13
Real Property Taxes	\$138,725,818	\$172,686,532	\$232,717,889	34.8%
Tangible Business Property Taxes	\$246,361,726	\$297,041,713	\$400,823,294	34.9%
Distilled Spirits in Bonded Warehouses Tax	\$893,432,418	\$1,141,135,216	\$1,332,029,432	16.7%
<b>Total Property Related Tax Assessment</b>	<b>\$1,278,519,962</b>	<b>\$1,610,863,461</b>	<b>\$1,965,570,615</b>	<b>22.0%</b>

Sources: County Sheriff tax offices in Anderson, Bullitt, Daviess, Franklin, Jefferson, Jessamine, Marion, Nelson, and Woodford counties.

The breakdown of tangible property tax assessments is helpful in gauging the scope of recent investments. Many of the tangible property categories are tied to the flow of materials and goods into and out of the distilleries and do not tell us very much about capital investments in an era of “just-in-time” manufacturing. However, the assessments for manufacturers’ machinery grew by about \$47 million between 2009 and 2013, an increase of 31 percent. While the increase over the last two years was a modest 3 three percent, a close examination of the tax rolls reveals a couple instances of manufacturing machinery not appearing in the latest assessments that had been assessed previously, so the true increase may very well be greater. The corresponding increase in the assessments of the distilled spirits aging in barrels in warehouses was about 17 percent, indicating that the capital investments have been translating into greater production.

### Manufacturing Machinery Tangible Property Tax Assessments of Kentucky Distillers, 2009, 2011 & 2013

Estimated Assessments			Percent Change
2009	2011	2013	'11-'13
\$151,106,107	\$192,975,919	\$198,578,151	2.9%

Sources: County Sheriff tax offices in Anderson, Bullitt, Daviess, Franklin, Jefferson, Jessamine, Marion, Nelson, and Woodford counties.

### Craft Distilleries

The number of small craft distilleries has been exploding over the last several years. While we noted that there were several small distilleries operating or announced at the time of our previous study (January 2012), we did not examine them separately from the other distillers. But in the past few years, the efforts of these entrepreneurs have come to fruition. Kentucky currently has 13 craft distillers among the distillers listed above, with another five among those with a distiller’s license but not on the state’s manufacturers list or members of the KDA. While not reflected in the statistics

yet, more than 20 new distilleries are either under construction or have announced their intentions to be up and running within the next few years, prompting the KDA to conduct its first-ever membership drive in August.

There is no universally accepted definition of a craft distillery and no federal definition. However, there are trade associations that have formed for craft distillers, two of which are the American Distilling Institute and the American Craft Spirits Association. Both have Kentucky distillers as members, even founding members. While their membership requirements do differ, they both draw a cutoff at annual sales of 100,000 proof gallons (the equivalent number of cases varies with the average proof of the spirits – at 100 proof it is roughly 42,000 cases, at 80 proof it is about 52,000 cases). They are both also lobbying the U.S. Congress in favor of the Distillery Excise Tax Reform Act of 2014, which the KDA also supports. This legislation seeks to ease the tax burden for small distillers by creating a tiered tax structure similar to that already in place and supporting small manufacturers in the beer and wine industry. Specifically, the proposed law would reduce the current tax rate to \$2.70 per proof gallon (from \$13.50) for the first 100,000 proof gallons produced annually by all distillers, large and small. This level of production seems to be the accepted maximum for a distillery to be recognized as craft.

According to our survey of KDA members, craft distilleries combine to employ 127 people with salaries totaling over \$4 million. Most are still at the stage where they are producing a very modest number of barrels, but altogether they have invested about \$30 million in land, buildings, and equipment since 2008, and expect to invest another \$25-\$30 million during the next five years. This includes Wilderness Trail Distillery building a \$1.8 million barrel-aging warehouse to house over 2,000 barrels.

And yet Kentucky is actually behind the curve for small craft distilleries, which began to take off nationwide in 2007. According to County Business Patterns, in 2006 there were 41 distilleries in the U.S. with fewer than 20 employees, with Kentucky having four of those. In 2007 the national figure rose to 60 small distilleries, but growth did not really take off until 2011. The number of distilleries with less than 20 employees jumped from 101 in 2010 to 199 in 2012. In Kentucky, that statistic has stayed at four distilleries. According to CBP, while Kentucky continues to have about a third of all distilleries employing 20 or more people, it now has just two percent of all distilleries employing less than 20 people, down from 10 percent in 2006.

**Kentucky's Share of the U.S. Distilling Industry  
by Employment Size Class, 2012**

<b>Area Name</b>	<b>Kentucky</b>	<b>United States</b>	<b>KY %</b>
Total Establishments	20	249	8.0%
1-4 employees	2	131	1.5%
5-9 employees	1	35	2.9%
10-19 employees	1	33	3.0%
20-49 employees	5	21	23.8%
50-99 employees	3	9	33.3%
100-249 employees	4	11	36.4%
250-499 employees	4	9	44.4%

Source: U.S. Census Bureau, County Business Patterns, 2012.

The next table shows the growth in distilleries having fewer than 20 employees for the 10 states with the most growth in small distilleries. Five of the states that have most benefited from the craft distilling boom are Washington, Colorado, Oregon, Texas, and New York. Those five states collectively averaged 5.5 distilleries having four or fewer employees between 1998 and 2006, but were home to 46 of these very small distilleries in 2012. They averaged less than one five-to-nine employee distillery between them in the years prior to 2007 and were home to 15 such distilleries in 2012. In the 10-19 employee size class, one distillery reached that size in Colorado during one year between 1998 and 2006, but these states were the site of 14 such distilleries in 2012. In the 2012 CBP these states have 17, 18, 17, 16, and 13 total distilleries apiece. While CBP data is two years old and undoubtedly misses some of the smallest distillers due to its methods of data collection, this is also true for other states. In the CBP data, only California has as many distilleries as Kentucky, with no other state having more than 18. But while most of Kentucky's distilleries employ more than 20 people, in all the other states with similar numbers of distilleries most of the distilleries employ fewer than 20 people. In fact, 13 states have more of these small-sized distilleries than Kentucky and four additional states have the same number.

**The Growth of Craft Distilleries Since 2006**  
**Top Ten States for Growth of the Smallest Size Distilleries**

	1-4 Employees		5-9 Employees		10-19 Employees	
	Avg. '98-'06	2012	Avg. '98-'06	2012	Avg. '98-'06	2012
United States	21.0	131	6.0	35	6.4	33
Washington	1.0	13	0	3	0	1
Colorado	1.6	10	0.2	3	0.2	5
Texas	1.0	9	0.5	2	0	5
Oregon	0.3	8	0.1	3	0	2
California	3.2	7	2.0	6	1.0	4
New York	1.6	6	0	4	0	1
Ohio	0.2	6	0	0	0	0
North Carolina	1.0	5	0	1	0	0
Illinois	0.8	5	0.2	1	1.0	1
Montana	0.5	5	0.5	0	0	0
10 States which have added the most						
micro distilleries	11.3	74	3.5	23	2.2	19
Kentucky	0.4	2	1.1	1	1.1	1
Remaining 39 States	9.3	55	1.4	11	3.1	13

Source: U.S. Census Bureau, County Business Patterns, 1998-2012.

The CBP data likely understates the craft distilling aspect of the industry quite a bit. The U.S. Tax and Trade Bureau's (TTB) list of all Distilled Spirits Producers and Bottlers permit holders currently has 1,392 permits listed nationwide. Quite a few of these are for establishments which primarily make wine (especially in California), but Kentucky still ranks eighth on the list with 46 permits. Of those permits, 27 are for craft distillery sized operations (some are at the very beginning stages of development and not actively producing spirits for sale yet). The permit numbers for Washington (125), New York (92), Colorado (65), Oregon (63), and Texas (61) are quite high in comparison and a perusal of the permit owner and operating names indicates that they are mostly craft distilleries.

Recent newspaper accounts of the craft distilling industry in those states indicate that there are as many as 87 licensed craft distilleries in Washington and more than 50 in Oregon. In both states there were virtually no distilleries as late as 2007. While distilleries did exist in Colorado, New York and Texas prior to 2007, growth has been remarkable. What all of these states have in common is that their state legislatures enacted a new set of rules that relaxed regulations and lowered entry costs, and followed that up with state agency action that encouraged people to take advantage of the new climate.

New York began the process in 2007 when the New York Farm Distillery Law lowered the financial bar for beginning distillers (provided they source at least half of their raw material from New York),

and allowed qualified distillers to open tasting rooms and sell spirits right from the distillery. Oregon and Washington followed suit in 2008. Washington's law also required at least half of the ingredients be from in-state, allowed tastings and direct sales, and cut the annual license fee to a mere \$100. At first the craft permit in Washington was limited to distillers of less than 20,000 proof gallons (roughly 375 Bourbon barrels, or 10,500 nine-liter cases at 80 proof) annually, but has since been raised to 150,000 gallons (only one of Kentucky's craft distillers currently produces this much). Oregon's law was similar but did not have any local ingredient requirements. Oregon's Liquor Control Commission has a website devoted to guiding prospective craft distiller entrepreneurs step-by-step through the regulatory process.

Both Washington and Oregon craft distillers benefited from those states being control states (where all alcohol beverages are sold through state alcohol beverage control agencies). In these systems the craft distillers could sell directly to the state agency, which had an incentive to keep shelf space for local products. Washington has since changed to a purely private retail market system which has caused some pain for small local producers as they have to fight for shelf space with much larger corporate brands.

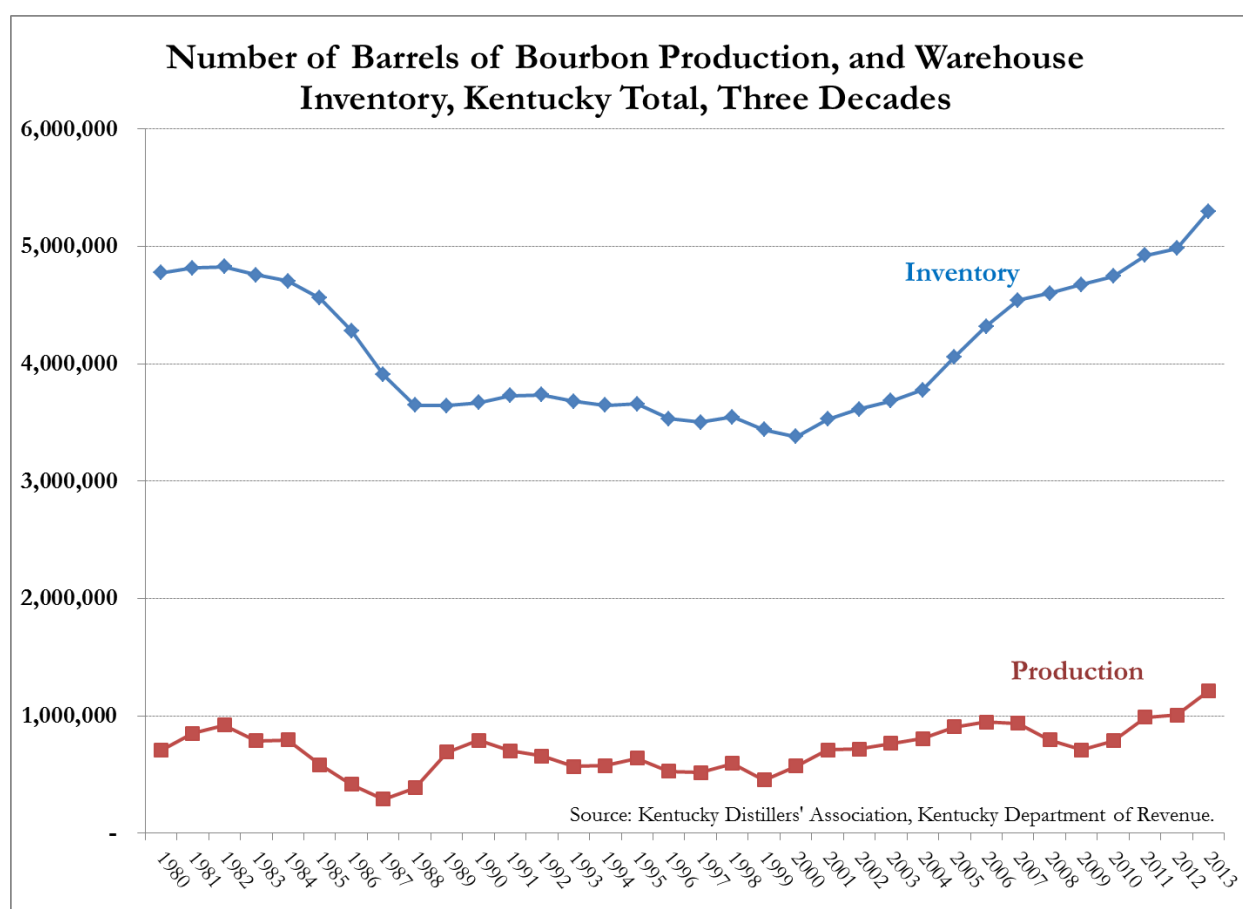
Texas began its reforms in 2012 and, along with similar policies as the other three states, is allowing distillers to solicit orders from wholesalers and market and sell directly to consumers, thus bypassing the three-tier distribution system. New York has also made recent changes along these lines. In October 2012, Governor Andrew Cuomo signed legislation allowing distilleries licensed under the Farm Distillery Law to sell directly to consumers at the New York State Fair, county fairs, and not-for-profit farmers' markets.

Kentucky also recently revised its distiller's license, with the changes taking effect in July of 2014. The changes create a new craft distiller's license for those businesses producing fewer than 50,000 gallons per year (about 950 Bourbon barrels or 21,000 nine-liter cases), with an annual fee of \$1,000 compared to the regular license fee of \$3,090. Compared to the other states examined here Kentucky's new system is not as generous with regard to production limits, lowered fees, or distribution channels. But since Kentucky has experienced significant increased activity in the craft distillery sector of the industry in the last year or two, and there exists a powerful cultural heritage involving Bourbon and other types of distilling in Kentucky, we may yet see the kind of craft distilling boom here that is currently underway in the Pacific Northwest, Texas, and a few other places around the country.

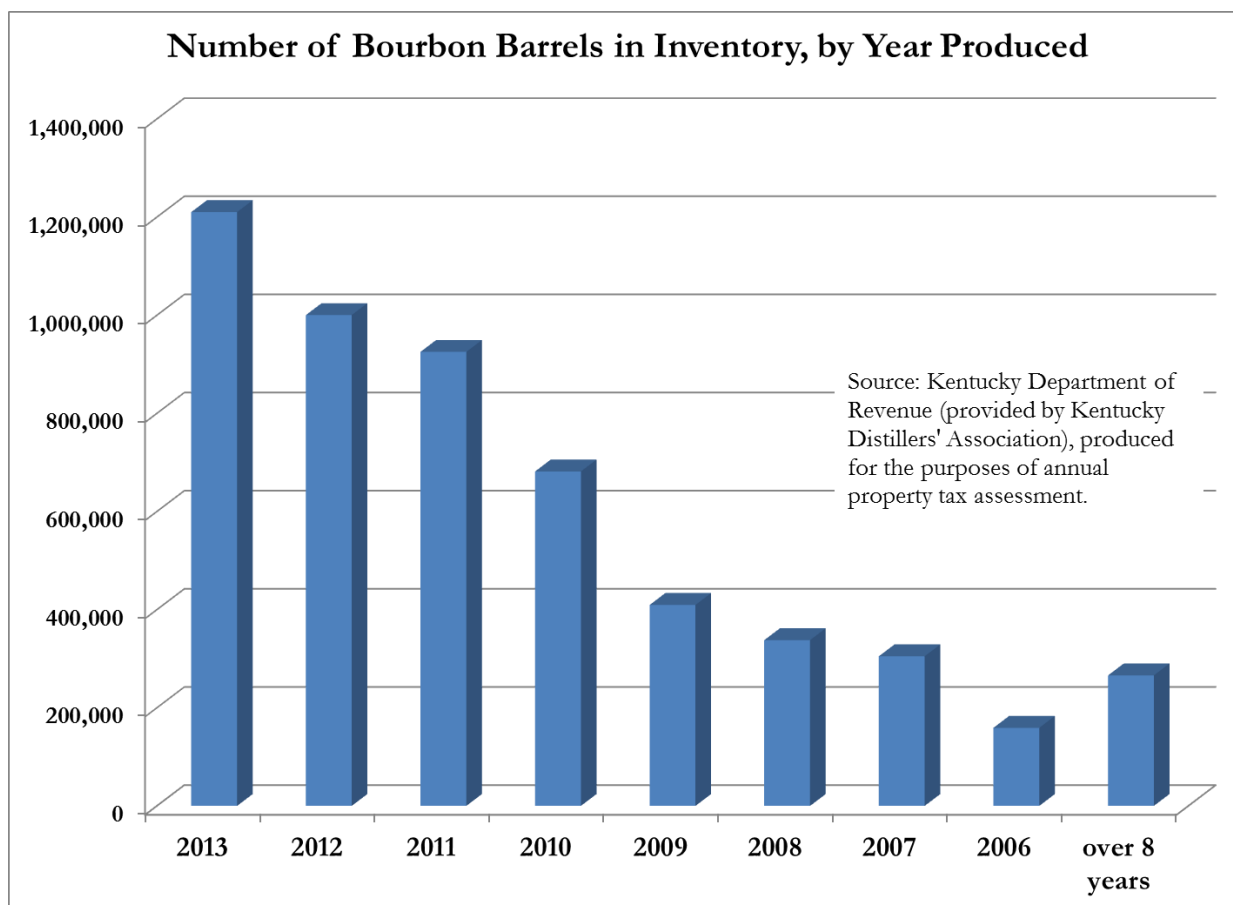
### **Production and sales**

The Kentucky Distillers' Association provided statewide summary statistics on barrel production and inventory that the Kentucky Department of Revenue compiles each year from property tax filings. This information contains barrel numbers for all Kentucky distilleries, not just KDA members. The next chart summarizes those inventory and production figures for the last three decades. It shows a pattern of initially high barrel inventories, followed by declining production in

the 1980s and 1990s. The industry has come back strong over the last decade, with increasing demand especially for premium products, including small batch and single barrel Bourbons. Barrel inventory has now surpassed that of the 1980s and reached a level not seen since 1977. The 5.3 million barrels of Bourbon in warehouses in 2013 is the basis for the often-heard statement that there are now more barrels of whiskey in Kentucky than there are residents, of which Kentucky has 4.3 million. The chart does not reflect the approximately 400,000 barrels that are reused to make non-Bourbon products, or the 200,000 barrels of neutral spirits currently produced each year.



The Bourbon stored in warehouses may be freshly made or up to 18 years old or older. We can use more internal data on barrel inventories, aggregated so as not to disclose any particular company, to estimate the vintage profile. This is shown in the next chart. One can see the steady drop-off in inventory after four years, the most common age for bottling. About 16 percent of the inventory is over six years old. Six years is also the average age at which a barrel is dumped for bottling.



### Domestic sales

The Distilled Spirits Council of the United States (DISCUS) tracks sales in the U.S., and reports there were 18 million cases (9-liter) of Bourbon and Tennessee whiskey sold in 2013. Tennessee whiskey shipments for U.S. consumption account for about one-half of that total, and thus Kentucky shipped a bit over 9 million cases of Bourbon to U.S. consumers. The national average revenue, including the federal excise tax of \$13.50 per proof gallon, was \$136 per case, according to DISCUS figures. That implies that gross revenues to Kentucky distillers from U.S. sales of Bourbon were around \$1.25 billion in 2013. Kentucky distillers also produce other distilled spirits, like vodka, cocktails, and cordials. But since these are not unique to Kentucky as is Bourbon, it is impossible to determine from published figures how much of national shipments originate in Kentucky.

According to DISCUS, case sales in the U.S. of Bourbon and Tennessee whiskey have grown by almost 20 percent over the past five years, and gross revenues from those sales have grown by 34 percent. This reflects the continuing shift towards more high end products, as the average revenue per case rose from \$121 to \$136 between 2008 and 2013.

## Exports

DISCUS reports that Bourbon and Tennessee whiskey accounted for \$1 billion of the total of \$1.5 billion in distilled spirits exports in 2013. By volume, Kentucky Bourbon and Tennessee whiskey are by far the biggest exports among U.S. distilled spirits, accounting for 38 of the 98 million proof gallons shipped for all spirits categories in 2013. Kentucky's whiskey exports have topped \$300 million for the last two years, and have grown in dollar terms by 55 percent since 2010. Overall, Kentucky is the second largest exporter of distilled spirits among the states, trailing only Tennessee. The biggest importers of Bourbon during 2013 were Australia, Japan, Spain, Germany, Canada, New Zealand, Netherlands, and United Kingdom, which combined accounted for 83 percent of the total value of Bourbon exports. Interestingly, according to the data reported by DISCUS, about 56 percent of Bourbon and Tennessee whiskey exports are in bulk, rather than bottled. Indeed, bulk shipments dominate exports to far away Australia and New Zealand - where presumably it is more cost effective to bottle the product close to consumers than to pay the freight on the bottles shipped around the world. However, bulk exports dominate the shipments to Spain and Netherlands, as well. Bulk exports had been about 47 percent of Bourbon and Tennessee whiskey exports until 2010 when they jumped up to the current level. This was also the year in which the great growth in Bourbon and Tennessee whiskey exports began.

## Economic Impacts

We characterized Kentucky's distilling industry in the first section of this report, with estimates of production, sales, jobs and payrolls. In the parlance of economic impact studies, these are called the direct impacts. Of course, the impacts do not end there. Because the products are purchased primarily by consumers outside the state, the industry brings in new dollars to Kentucky, dollars that recirculate among vendors, employees and households. We turn to these spinoff impacts in this section, and aggregate all components to a total economic impact estimate.

### Linkages to other sectors

We use a custom input-output model of Kentucky to investigate the linkages between the distilling industry and other industries in the state. Input-output models are the standard method for measuring sales among industries. Our IMPLAN model of Kentucky has details on 440 industries, and can predict how much each industry buys from every other industry in the state, as well as how much must be imported from outside the state to support a given level of production.

The following table summarizes the predicted makeup of purchases to support distilling in Kentucky and how much of that will be bought from other Kentucky businesses. It shows that distillers purchase about 38 cents of goods and services for every dollar of distilling output, about 6 cents of labor services, 9 cents for dividend, interest and rent payments, and an amazing 47 cents in tax payments. Of the goods and services required, the model expects about 64 percent of their value (24 cents per dollar of distilling output) to be purchased within Kentucky.

The distilling industry stands out from others in terms of the tax portion of output. In Kentucky the closest industry sector is wholesale trade (the selling of goods made elsewhere to other businesses) at 17.5 cents per dollar of output. Aside from retail, real estate, coal mining, and telecommunications are the next sizable sectors of the economy in terms of taxes per dollar of output, but they only pay 14.8, 12.5, and 8.7 cents, respectively. For most manufacturing sectors, the portion of each dollar of output that goes to taxes is less than a penny.

#### Production Function for the Kentucky Distilling Industry

Commodities Purchased by the Kentucky Distilling Industry	Total Purchases	Purchases per \$1 Million of Distillery Output	
		From Kentucky Vendors	Percent from KY Vendors
Distilled liquors & wines	\$155,436	\$130,478	83.9%
Wholesale trade distribution services	\$69,631	\$51,916	74.6%
Grains, flour, & malt	\$27,900	\$10,290	36.9%
Glass containers	\$24,534	\$0	0.0%
Management of companies and enterprises	\$18,371	\$10,062	54.8%
Wood containers and pallets	\$14,321	\$12,139	84.8%
Transportation services	\$14,179	\$9,715	68.5%
Paper & packaging products	\$9,770	\$4,570	46.8%
Plastic bottles & other plastics	\$8,665	\$1,724	19.9%
Noncomparable foreign imports	\$6,245	\$129	2.1%
Fabricated metal products	\$5,823	\$390	6.7%
Utilities	\$4,425	\$3,034	68.6%
Motor vehicles, including maintenance	\$2,637	\$680	25.8%
Management, scientific, and technical consulting services	\$2,378	\$421	17.7%
Petroleum & other chemical products	\$2,336	\$620	26.5%
Legal, accounting, & advertising services	\$2,271	\$1,445	63.6%
Material handling & electronic components	\$1,476	\$149	10.1%
Business services	\$1,465	\$1,222	83.4%
Buildings	\$1,322	\$933	70.6%
Rental & leasing services	\$1,165	\$660	56.6%
Warehousing and storage services	\$573	\$531	92.7%
Retail services	\$559	\$484	86.6%
Repair and maintenance services	\$498	\$427	85.7%
Telecommunications & digital services	\$462	\$376	81.4%
Products & services of State & Local Govt enterprises (excl. utilities)	\$24	\$24	99.0%
Total intermediate purchases	\$376,465	\$242,418	64.4%
Employee compensation	\$46,483		
Proprietors' income	\$12,105		
Other property-type income (dividends, interest, rent)	\$92,459		
Indirect business taxes	\$472,488		
Total value of output	\$1,000,000		

Source: IMPLAN input-output model of Kentucky, version 3.1, using 2012 economic data, August 2014.

These commodities purchased by the distilling industry, as well as the household income created, are the basis for economic multipliers. Output in one industry lifts output in supporting industries,

which in turn raises output in industries that support them. Generally speaking, the more an industry purchases in the state the larger the spinoff impacts of that industry's activity. The more it imports its raw materials and services, the smaller the spinoffs in the state. In this regard, it is important to note that compared to the previous edition of this study in January 2012, the IMPLAN model expects a greater percentage of purchases to be made within Kentucky (64 percent versus 53 percent) along with more goods and services being purchased for each dollar of output (38 versus 28 cents), leading to an expectation of 9 cents more being spent within Kentucky for each dollar of distilling industry output.

There are two primary factors responsible for these differences. First, IMPLAN shows a 70 percent increase in the portion of industry purchases of distilled liquors and wines, from 9 cents per dollar of industry output to 15.5 cents. Along with this, the percentage bought from Kentucky vendors rose from about 53 percent to nearly 84 percent. Together, this means that about \$82,000 more local distilled spirits and wines went into a million dollars of industry output in 2012 versus 2009. Second, the portion of grains (which make up nearly all of the grains, flour, and malt category in the table) in each dollar of distilling industry output doubled from 2009 to 2012 according to the IMPLAN data. Combined with a modest increase in the percentage bought from Kentucky farmers, the amount of Kentucky grain in a million dollars of industry output rose by \$5,600. The first factor shows the impact of the expanded bottling facilities in the state as well as the significant growth in Bourbon sales. The second factor shows the impact of the increase in distilling as the industry seeks to fill as many barrels as possible to meet expected future demand. This suggests a tighter integration of the distilling industry with rest of the state's economy, which will be reflected in the impact results below.

It is insightful to think of an input-output table as a set of production recipes, with each industry column showing how much must be purchased from each row industry to produce its annual output. For example, the distilling industry nationally is a large purchaser of glass containers, grain, wood containers and pallets, plastic bottles, truck transportation, and cardboard. These are identified from national industry surveys. These national tables are 'regionalized' by IMPLAN using economic data on the presence and size of industries at the state, metropolitan area, or county level as needed. The resulting regional models and industry multipliers take account of the ability of the regional economy to supply inputs to each industry. In the case of distilling, for example, IMPLAN predicts that most of the wood containers and pallets (or rather products from the industry that produces these, which includes cooperages) needed by the industry can be supplied by Kentucky firms, but that none of the glass bottles can be supplied in-state. The glass bottles must be imported, with the result that those purchasing dollars leak out to other states (or countries).

A recent economic development announcement is a good illustration of how an industry's attraction of satellite businesses can slightly alter the in-state production recipe which determines the magnitude of the industry's multipliers. Ribbon was recently cut on a facility in Elizabethtown for the manufacture of decorative glass containers used for spirits, wine, other beverages, and cosmetics. Quest Industries will invest \$10 million and create up to 45 jobs. Among Quest's current customers

are Kentucky spirits manufacturers Beam Suntory (Jim Beam and Maker's Mark), Campari (Wild Turkey), Diageo (Bulleit), and Sazerac (Buffalo Trace). Soon, with respect to glass bottles, the production recipe for the distilling industry in Kentucky will change a bit, and with a bit more of each dollar spent staying within Kentucky the multipliers should change, too.

IMPLAN includes the value of fringe benefits (employee provided social security and Medicare taxes, unemployment insurance and workers' compensation premiums, health insurance, pension contributions, etc.) in its compensation estimate, estimating that fringes add about 27 percent to direct wages and salaries in this industry.

The distilling industry's purchases of intermediate goods and services in Kentucky, as well as its payments to workers and business owners in the state, cause rounds of re-spending across other industries. The inter-industry impacts are often referred to as 'indirect' effects, since changes in activity at distillers will quickly cause changes in activity at suppliers. The household spending impacts are often referred to as 'induced' effects, since changes in industrial production ultimately hit the regional economy through employees' wages and the associated spending on goods and services. At each round of re-spending, a portion of the dollars leak out due to saving, purchases of imported goods, and tax payments, so that the re-spending ultimately goes to zero. The cumulative impact of the re-spending is measured in economic multipliers, which are the ratio of total economic activity to activity in the distilling industry.

The production function above applies to the manufacturing of distilled spirits, but the industry in Kentucky tends to operate almost like two industries in one. On one side are the distilling, warehousing, and bottling activities, and on the other is the corporate, subsidiary, or regional managing office. The latter oversee and manage the former, and provide the strategic and organizational planning for the entire enterprise. Because Brown-Forman and Heaven Hill are headquartered in Kentucky, and Beam Suntory (Jim Beam and Maker's Mark), Kirin (Four Roses), and Sazerac (Buffalo Trace) have significant corporate subsidiary operations here as well, much of the activity in the broader industry involves functions that belong to the management of companies industry. These two activities (management of companies and distilling) have very different linkages with the rest of the economy. We created a split into two industries for modeling purposes.

We asked the members of the KDA to provide us with employee figures divided according to whether the employee was working on the manufacturing or corporate side of the business. Since these survey results reflect conditions during July, 2014, we were able to combine them with other available data to estimate total distilling industry employment for 2014. After examining the survey numbers along with the figures from the QCEW, CBP, and Directory of Manufacturers, we estimate that there are between 3,800 and 3,850 people currently employed in the distilling industry statewide. Of those, we believe that approximately 1,450 are more properly categorized as working in the management of companies industry (NAICS code 551114). This estimate of 2014 employment is a 23 percent increase over the 2010 employment numbers we used in the 2012 study.

## Economic multipliers

The next table provides a summary of important economic multipliers for the distilling industry in Kentucky, with separate calculations for the production side and the corporate headquarters side, as well as the combined effect. The first line is the job multipliers. If the manufacturing side of the distilling industry adds an employee, there will be another 5.6 jobs supported elsewhere in Kentucky. About 70 percent of the spinoff impact is due to additional employees among industries that are suppliers to distillers, and the rest is due to new employees in retail and other industries that sell to households. This is a very large multiplier compared to most other Kentucky industries. If the corporate side of the distilling industry adds an employee, there will be another 2.5 jobs supported elsewhere in Kentucky, and about 65 percent of the impact is due to the business-to-business spending. In combination, all the functions of the distilling industry in Kentucky support 4.4 extra jobs for each job in the industry. Similar interpretations can be given for the employee compensation and output multipliers. The employment multipliers are much greater than the other multipliers because output per worker and average wages in the distilling industry are fairly high. Workers in spin-off industries are not producing as much output per worker, nor are they earning as much in wages.

<b>Economic Multipliers for the Distilling Industry in Kentucky</b>			
	<b>Combined Functions</b>	<b>Manufacturing Functions</b>	<b>Corporate Functions</b>
<b>Employment</b> (change in total jobs in KY per job in industry)	4.35	5.61	2.52
<b>Employee Compensation</b> (change in total compensation in Kentucky per compensation in industry)	2.10	3.18	1.32
<b>Output</b> (change in value of output among all Kentucky firms per change in output in industry)	1.41	1.39	1.88

Source: Customized IMPLAN (IMpacts for PLANing), version 3.1, model of Kentucky, using 2012 economic data.

The employment multiplier is much higher than that reported in our previous study of the distilling industry. We present the three economic multipliers for the distilling industry using annual IMPLAN data from 2008 through 2012. The prior study used 2009 data. The employee compensation and output multipliers are fairly consistent across the years, but the employment multiplier varies. Some of the increase since 2009 has to do with the things discussed above in relation to changes in the industry's production function and the tighter integration with the state economy of two of the top three inputs (distilled spirits and grains).

### **Recent Economic Multiplier History for the Distilling Industry**

	<b>IMPLAN Data Year</b>				
	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2009</b>	<b>2008</b>
<b>Employment</b>	4.35	4.19	3.63	3.19	4.36
<b>Employee Compensation</b>	2.10	2.14	1.92	1.93	2.11
<b>Output</b>	1.41	1.29	1.27	1.29	1.44

Sources: IMPLAN (Impacts for PLANing), version 3.1, models of Kentucky, using various years of economic data. The 2011 data was altered so that the percentage of grain purchased locally was in line with historical levels.

However, the largest part of the difference is due to the fact that the underlying industry data used by IMPLAN to calculate the multipliers does not reflect the industry's historical trends in a few respects. Chief among these was that the value of intermediate inputs was less than 60 percent of prior year values and employee compensation was slightly low. We adjusted the underlying distilling industry data so that it fits in with the industry history and reran the model using the same methodology we used before. The total economic impact results are in the next table. This resulted in an increase in the number of jobs impacted by the distilling industry to 10,311 from 8,690, and an increase in the value of total payroll to \$447 million from \$413 million.

### **Previous Study Impact Results Adjusted for Industry Data Problems and New Methodology**

#### **Total Impact: Direct plus Indirect plus Induced**

	<b>Previously Reported</b>	<b>Adjusted Data, Same Method</b>	<b>Adjusted Data, New Method</b>
Jobs	8,690	10,311	12,566
Payroll	\$413,031,151	\$447,423,752	\$544,527,179

Note: IMPLAN data used in the previous study did not reflect historical industry trends. In the second column, we have adjusted the underlying data so that it fits with industry history and rerun the model with the same methodology used in the previous study. In the third column, we have taken the adjusted data and run the model with our new methodology.

However, in the results described below we utilize a slightly different methodology which we believe gives a more accurate picture of the true impact of the distilling industry. The major difference is that we are now taking the corporate function employees and their pay out of the underlying distilling industry data and applying them to the management of companies industry sector. Doing this makes the data in the distilling industry reflect just the manufacturing function. Since the production aspect of the industry is among the top manufacturing industries in terms of the value of output per worker, and is linked to many other industries that are labor intensive it has a very high

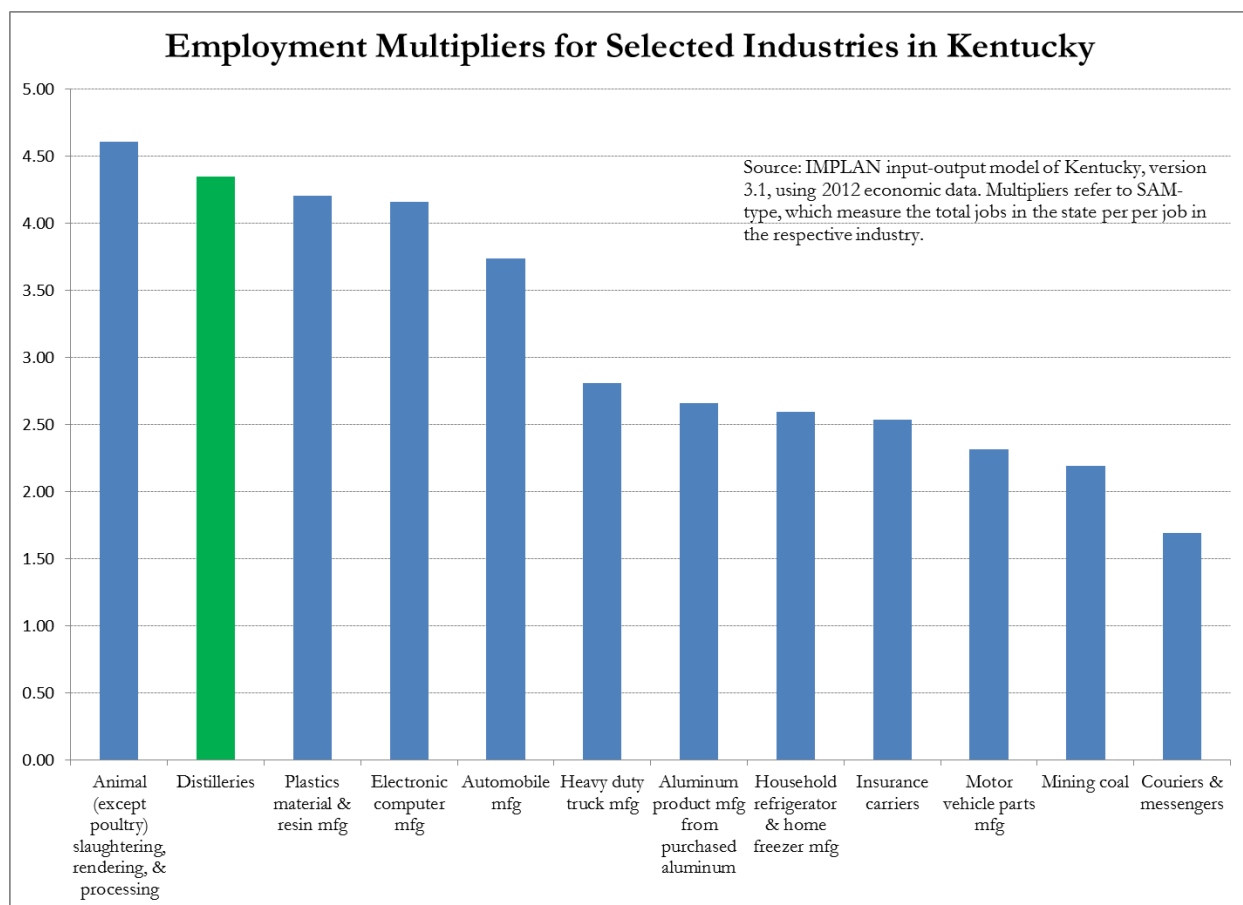
employment multiplier. This fact gets obscured when the two functions are combined in the data. We applied the new methodology to the previous study's data, the results of which are in the third column above. By the new method, the total employment impact of the distilling industry in 2010 was 12,566 jobs, with a combined payroll of \$544 million. We believe this is a fair assessment of the industry at that time, and that the impact of the distilled spirits industry was always actually quite a bit larger than we reported.

### **Comparison of distilling industry impacts with other industries**

Our IMPLAN model of Kentucky contains detailed estimates of output, employment, payroll, and value added for 440 detailed industries in the state. We can use those estimates to make some observations about the relative importance of the distilling industry. First, consider manufacturing. IMPLAN provides details for 278 detailed manufacturing industries, of which 245 have operations in Kentucky. Of those, the distilling industry ranks 9<sup>th</sup> highest in terms of jobs and 18<sup>th</sup> highest in terms of employment multipliers. But most of the industries with very high multipliers have few employees and hence are not that significant.

The only manufacturing industry with both more jobs and a higher employment multiplier is animal (except poultry) slaughtering, rendering, and processing. A few smaller industries have higher estimated multipliers, for example petroleum refining and organic chemicals. Motor vehicle parts production has by far the most employees, but its multiplier is only 2.32, compared to distilling's multiplier of 4.35. The chart on the next page includes a number of high-profile manufacturing sectors, all of which employ at least 2,000 people in Kentucky.

Most of the other detailed industries outside of manufacturing are in retail trade, personal services, health care, education, and other enterprises that primarily serve the local market – and hence are not typically considered as economic development targets. However, there are several non-manufacturing industries that receive considerable public attention and it is interesting to compare their impacts to that of distilling. Our IMPLAN model estimates that the insurance carriers sector, which includes Humana, employs 20,700 people, and has an employment multiplier of 2.54. Coal mining employs 17,250, but has an employment multiplier of just 2.19. The courier and messenger industry, which includes UPS, Kentucky's largest private employer, has direct employment of nearly 28,000, but its employment multiplier is only 1.70. Kentucky breweries and wineries, which employ many fewer people than these other industries, have industry employment multipliers of 3.31 (beer) and 1.91 (wine).



### Total economic impact of distillery company operations

The table below shows the distilling industry's total economic contribution to the Kentucky economy. In summary, the direct jobs and payroll of distillers and their corporate office activity leads to a total of around 15,400 jobs, with annual payroll of \$707 million, producing \$7.6 billion of economic output. This is an estimate of what would happen in the state in the unlikely event that the distilling industry completely disappeared. The analysis is based upon there currently being 2,400 distilling production related jobs and 1,450 corporate management related jobs in the state. The direct effect in the production section of the table is less than 2,400 because the activities of the distilling industry have an effect on itself, essentially spin-off into its own industrial sector. We do not want to double count this own-industry spin-off in our analysis of the contribution of the industry. What the table is saying is that if we eliminated all of the corporate management function jobs and about 2,100 production jobs, one result would be the elimination of all of the remaining production jobs (part of the indirect effect).

Since input-output models are by design linear and symmetric, one can use the economic multipliers (in the more likely case) to estimate the total impact of incremental growth or decline in distilling activity.

**Annual Economic Impact  
of the Distilling Industry in Kentucky**

<b>Impact Type</b>	<b>Employment</b>	<b>Output</b>	<b>Payroll</b>
<b>Production of Distilled Spirits</b>			
Direct Effect	2,096	\$5,063,335,311	\$134,341,979
Indirect Effect	6,430	\$1,576,878,072	\$226,242,018
Induced Effect	3,228	\$379,446,007	\$90,130,568
<b>Total Effect</b>	<b>11,755</b>	<b>\$7,019,659,389</b>	<b>\$450,714,564</b>
<b>Corporate Management Functions</b>			
Direct Effect	1,450	\$302,133,278	\$191,790,419
Indirect Effect	671	\$83,543,439	\$20,697,715
Induced Effect	1,540	\$181,286,801	\$44,029,886
<b>Total Effect</b>	<b>3,661</b>	<b>\$566,963,517</b>	<b>\$256,518,020</b>
<b>Total Distilled Spirits Industry Impact</b>			
Direct Effect	3,546	\$5,365,468,589	\$326,132,398
Indirect Effect	7,101	\$1,660,421,511	\$246,939,732
Induced Effect	4,769	\$560,732,808	\$134,160,454
<b>Total Effect</b>	<b>15,416</b>	<b>\$7,586,622,907</b>	<b>\$707,232,584</b>

Source: Customized IMPLAN (IMpacts for PLANing), version 3.1, model of Kentucky, using 2012 economic data.

Note: Indirect impact refers to business-to-business spin-off spending; Induced impact refers to household spending that is a result of increased earnings.

Aside from the obvious distilleries and management of companies industries, the industries that are most affected by the distilling industry in Kentucky are wholesale trade, grain farming, restaurants and bars, and cooperages and pallet manufacturers. (Food services and drinking places, hospitals, and the physician's office industry sector impacts are examples of what happens to household spending when we take \$707 million out of the hands of employees. Since our model essentially takes that money out of the Kentucky economy, utilization of those services by households will fall, resulting in employment impacts.)

### Industries Most Affected by the Distilling Industry

Industry Sector	Employment	Labor Income
Distilleries	2,400	\$272,219,324
Management of companies and enterprises	1,791	\$272,963,603
Wholesale trade businesses	1,738	\$123,065,358
Grain farming	1,362	\$9,225,123
Food services and drinking places	713	\$14,833,352
Wood container and pallet manufacturing	536	\$22,724,375
Employment services	413	\$10,005,119
Real estate establishments	358	\$4,309,799
Transport by truck	346	\$16,832,332
Private hospitals	310	\$19,877,209
Offices of physicians, dentists, and other health practitioners	276	\$22,526,035

Source: Customized IMPLAN (IMpacts for PLANing), version 3.1, model of Kentucky, using 2012 economic data.

Note: Labor income includes employee compensation and proprietors income.

### Impact of construction activity

Distillery companies have invested billions of dollars in their facilities and equipment over the decades. This is evident from the large property tax payments they make to government jurisdictions each year, a topic we examine in the next section. We already noted that Kentucky distillers have invested over \$400 million in capital improvement projects since 2008. In addition to that they are planning another \$630 million in projects over the next five years, including Diageo's brand new \$115 million Bulleit distillery in Shelby County and the just-announced Old Forester Distillery, a \$30 million project by Brown-Forman on Whiskey Row in downtown Louisville. Here we analyze the one-time economic impacts of a hypothetical \$10 million distillery construction project. Our estimates can be scaled up or down according to the size of the investment under consideration.

We use our IMPLAN model of Kentucky to perform the analysis. The model has a sector, number 35, entitled "Construction, new nonresidential manufacturing" that fits this question. We simulated a \$10 million increase in demand for that sector, and the model predicted the impacts on business output, jobs, and payrolls. The results are shown in the table below. The first row indicates that the investment is associated with 102 direct construction jobs, with estimated payroll of \$3 million. The indirect impacts refer to inter-industry linkages, wherein the construction project requires purchases from other companies in Kentucky. The induced impacts refer to the cumulative rounds of household spending caused by the increased income flowing to employees. The last row summarizes the total impacts. The \$10 million project leads to an increase in sales of about \$16.2 million for all Kentucky firms, an increase in jobs of 151, and an increase in payroll statewide of \$4.5 million. This is just about the same as in our previous study, indicating that the underlying economics of the construction industry is unchanged.

**Economic Impact of \$10 Million Construction Investment  
by the Distilling Industry in Kentucky**

Impact Type	Employment	Output	Payroll
<b>Total Construction Impact</b>			
Direct Effect	102	\$10,000,000	\$2,976,083
Indirect Effect	17	\$2,502,162	\$598,692
Induced Effect	32	\$3,724,248	\$886,765
<b>Total Effect</b>	<b>151</b>	<b>\$16,226,409</b>	<b>\$4,461,540</b>

Source: Customized IMPLAN (IMpacts for PLANing), version 3.1, model of Kentucky, using 2012 economic data.

Indirect impact refers to business-to-business spin-off spending; Induced impact refers to household spending that is a result of increased earnings.

We can make an estimate of the amount of additional tax revenues that would be generated, using some of the results developed later in this study. Construction supplies and materials are potentially subject to Kentucky's 6% sales tax, and could amount to as much as \$348,000 in tax revenues for the project. However, when job growth is involved, companies often qualify for an exemption to the sales tax. Kentucky state government would receive a one-time increase in individual income and sales tax receipts of about \$385,000 at the historical effective tax rates, and local governments would receive an additional \$50,000 in occupational taxes. Thus, excluding any possible sales tax payments on construction materials and machinery, governments in Kentucky would receive a total one-time increase of \$435,000.

It is impossible to precisely predict the long-term fiscal impacts of such an investment without specifying where the investment occurs in the state. Property tax rates vary widely among jurisdictions. A rule of thumb is that real estate is subject to property taxation at the rate of one percent, though the rate can be much higher in very urbanized places with intensive public services (schools, fire, police, libraries, streets, garbage pickup, EMS). Assuming that the property was valued at construction cost, this implies that the direct investment leads to annual property tax revenues to local and state governments of \$100,000 per year.

### **Impact of capital equipment investment activity**

Kentucky's distillery companies have not been building empty facilities, but have been equipping them with state-of-the-art stills, bottling machinery, computers, and whatever else they need to manufacture and sell their products. Much of the upcoming \$630 million in investment will go towards various kinds of durable machinery. We therefore also simulated a \$10 million capital equipment investment using IMPLAN's capital investment scenario for the beverage manufacturing sector. The next table summarizes the results. There are no direct impacts since all the transactions involve the distilling industry buying from other industries. These purchases lead to more business-to-business transactions and ultimately a \$4 million increase in the output of Kentucky firms. That activity supports 39 jobs with a payroll of \$1.1 million. Household spending induces more impact,

and the \$10 million of capital spending leads to an increase in sales of about \$5.2 million for all Kentucky firms, an increase of 49 jobs, and an increase in payroll statewide of \$1.4 million.

**Economic Impact of \$10 Million Capital Equipment Investment  
by the Distilling Industry in Kentucky**

Impact Type	Employment	Output	Payroll
<b>Total Capital Equipment Impact</b>			
Direct Effect	0	\$0	\$0
Indirect Effect	39	\$4,086,788	\$1,151,508
Induced Effect	9	\$1,088,020	\$261,031
<b>Total Effect</b>	<b>49</b>	<b>\$5,174,808</b>	<b>\$1,412,539</b>

Source: Customized IMPLAN (Impacts for PLANing), version 3.1, model of Kentucky, using 2012 economic data.

Indirect impact refers to business-to-business spin-off spending; Induced impact refers to household spending that is a result of increased earnings.

**Total average annual impact possible from distilling industry planned investments**

As noted above, Kentucky's distillers have roughly \$630 million in expansion and improvement projects planned over the next five years. We can use the results of the last two sections to estimate the average annual impact on the state's economy of this activity over the five year period. In the table below we assume a fairly uniform spending pattern over the five years and that \$84 million of each year's \$126 million in spending will be on construction while \$42 million will be spent on capital equipment. Results will be different depending on the exact spending mix. Relatively more construction spending will increase the impact, while relatively more capital equipment spending will decrease the overall impact.

**Estimate of Average Annual Impact of Kentucky Distilling Industry's  
\$630 Million Investment Plans Over the Next Five Years**

Employment	Output	Payroll	State & Local Income	
			& Sales Taxes	Property Taxes
1,470	\$158,036,029	\$43,409,602	\$4,225,200	\$840,000

Source: Customized IMPLAN (Impacts for PLANing), version 3.1, model of Kentucky, using 2012 economic data.

Note: Assumes the construction to capital equipment spending ratio is \$84m/\$42m for every \$126 million in spending.

Our estimates indicate that the distilling industry construction and capital improvement projects could support an average of 1,470 jobs in Kentucky through 2019. Those jobs would have about \$43 million in total payroll and generate about \$4.2 million in combined state and local income and

sales taxes each year during the period. The real estate improvements could mean an additional \$840,000 in property tax revenues each year to local and state governments.

### **Potential impact from an increase in local sourcing of grain inputs**

Because mash bills vary by distiller and they each use proprietary processes (and the individual knowledge of their Master Distillers) there is no set amount of grain that goes into a barrel of Bourbon (other than it must be at least 51 percent corn). Most sources we have seen on the subject give figures that work out to between eight and nine bushels of corn per barrel of Bourbon. Other grains, therefore, are used at about two to three bushels per barrel. This is in line with the results of our survey of KDA members. Including the other products distilled by Kentucky distillers, they currently utilize 12 to 12.5 million bushels of corn and 4 million bushels of other grains (primarily wheat, malted barley, and rye) each year.

Corn and wheat grow relatively well in Kentucky's soil and climate and there are many thousands of acres of each planted every year. But there is very little rye and no barley production in Kentucky primarily due to the fact neither can be efficiently produced in the state's soil and climate conditions compared to dryer more northern climates. Given this, local sourcing of grain inputs for Kentucky distillers refers almost exclusively to corn and wheat. The state's distillers currently source approximately 40 percent of total grain needs from Kentucky farmers. They purchase about 50 percent of their corn needs from Kentucky farmers and roughly 20 percent of the other grains (wheat, with a little rye). The table below shows the current impact that the distilling industry has on the agricultural sector of the state's economy. The activities of Kentucky's distillers support about 1,460 farming and farming-related jobs in the state, mostly in grain farming, that produce \$58 million in output and bring in \$12 million of labor income. The grain farming impact in the table represents about six percent of that entire industry in Kentucky.

## Current Distilling Industry Impacts on the Agricultural Sector

	Industrial Sector	
	Grain farming	Support activities for agriculture
Employment	1,362	102
Output	\$55,773,200	\$2,883,334
Value Added	\$12,833,154	\$1,607,058
Labor Income	\$9,225,123	\$2,828,343
Employee Compensation	\$1,496,723	\$2,431,007
Proprietors Income	\$7,728,401	\$397,337
Other Property Type Income	\$5,153,653	(\$1,269,049)

Source: Customized IMPLAN (IMPacts for PLANing), version 3.1, model of Kentucky, using 2012 economic data.

Note: Employee compensation includes benefits and payroll taxes. Other property income includes corporate profits, capital consumption allowance, payments for rent, dividends, royalties and interest income.

All of the KDA member distillers we surveyed indicated a willingness to purchase a greater percentage of their corn and wheat from Kentucky producers provided they could meet price and quality requirements. Several distillers in our survey expressed a desire to purchase only corn from non-genetically engineered seeds or that is grown organically, neither of which is widely available in Kentucky. This was noted by a couple of the larger distilleries, not just craft distilleries who might be seeking an organic niche market. Working with distillers to meet those particular requirements is one avenue Kentucky's farmers can pursue to increase their corn sales to the state's distilling industry.

Most of the craft distillers we surveyed sourced all of their corn from Kentucky farmers and all seemed eager to work with local producers. One has even contracted with a nearby farm to grow rye for them. They represent a fertile and growing market for Kentucky's grain farmers, but they currently account for less than 50,000 bushels of corn per year.

Kentucky does harvest enough corn and wheat each year that the state's farmers could potentially supply a much greater percentage of the distillers' grain needs. Since 2000, Kentucky farmers have harvested an average of 160 million bushels of corn and 24 million bushels of wheat each year. Current distiller needs represent just 7 percent and 16 percent of the corn and wheat harvests, respectively. Since the capacity is there and the distillers are open to the possibility of increased local sourcing, we have modeled what the contribution of the distilling industry on the state of Kentucky would be if all of the corn and wheat were purchased from Kentucky farms (this would be the equivalent of 80 percent of total grain inputs). This represents a potential upper bound of the distilling industry's impact on the state. The results are in the following table.

**Potential Annual Economic Impact  
of the Distilling Industry in Kentucky  
if All Corn and Wheat Purchased from Kentucky Producers**

<b>Impact Type</b>	<b>Employment</b>	<b>Output</b>	<b>Payroll</b>
<b>Current Distilled Spirits Industry Impact</b>			
Direct Effect	3,546	\$5,365,468,589	\$326,132,398
Indirect Effect	7,101	\$1,660,421,511	\$246,939,732
Induced Effect	4,769	\$560,732,808	\$134,160,454
<b>Total Effect</b>	<b>15,416</b>	<b>\$7,586,622,907</b>	<b>\$707,232,584</b>
<b>Total Potential Distilled Spirits Industry Impact</b>			
Direct Effect	3,546	\$5,365,468,589	\$326,132,398
Indirect Effect	8,670	\$1,738,366,631	\$253,169,807
Induced Effect	4,863	\$571,737,121	\$136,875,749
<b>Total Effect</b>	<b>17,079</b>	<b>\$7,675,572,341</b>	<b>\$716,177,954</b>
<b>Difference from Current Impact</b>			
Indirect Effect	1,569	\$77,945,120	\$6,230,074
Induced Effect	94	\$11,004,313	\$2,715,295
<b>Total Effect</b>	<b>1,663</b>	<b>\$88,949,433</b>	<b>\$8,945,369</b>

Source: Customized IMPLAN (IMpacts for PLANing), version 3.1, model of Kentucky, using 2012 economic data.

Note: Currently about 40 percent of the distillers' grain demand is met by Kentucky producers. If all corn and wheat demand were met by in-state producers that would account for approximately 80 percent of total grain demand used by Kentucky distillers.

Indirect impact refers to business-to-business spin-off spending; Induced impact refers to household spending that is a result of increased earnings.

The increase in locally sourced grain has a significant effect on the impact numbers, primarily among the indirect, business-to-business, interactions. There is potential for up to \$89 million more in sales by Kentucky farms, supporting 1,660 jobs with a payroll of \$8.9 million. While this represents only a 1.2 percent increase over the current impact in terms of output and payroll, it is a 10.8 percent bump in the employment impact. As we might expect, nearly all the added impact occurs in the two agricultural sectors of grain farming and support activities for agriculture, as can be seen in the next table. Given the modest size of many rural communities, 1,450 jobs can be significant.

**Potential Agricultural Sector Impact Gains  
if All Corn and Wheat Purchased from Kentucky Producers**

	<b>Industrial Sector</b>	
	<b>Grain farming</b>	<b>Support activities for agriculture</b>
Employment	1,355	97
Output	\$55,481,609	\$2,745,228
Value Added	\$12,766,062	\$1,530,084
Labor Income	\$9,176,893	\$2,692,872
Employee Compensation	\$1,488,899	\$2,314,567
Proprietors Income	\$7,687,996	\$378,304
Other Property Type Income	\$5,126,709	(\$1,208,266)

Source: Customized IMPLAN (IMpacts for PLANing), version 3.1, model of Kentucky, using 2012 economic data.

Note: Employee compensation includes benefits and payroll taxes. Other property income includes corporate profits, capital consumption allowance, payments for rent, dividends, royalties and interest income.

### Spent grain

Spent grain is simply the grain solids that remain after the distillation process ends. Kentucky distillers produce a lot of spent grain, but the primary markets for it are in the Midwest where it is in plentiful supply as a byproduct of ethanol manufacturing. Commonly called Distillers Grains, there are two types: wet and dry. Wet distillers grains (WDG) contain primarily unfermented grain residues (protein, fiber, fat and up to 70 percent moisture). WDG has a shelf life of four to five days (but there are articles discussing how to store them longer). Due to the water content, WDG transport is usually only economically viable within 100 miles of the source facility. Dried Distillers Grains with Solubles (DDGS) is WDG that has been dried to 10-12 percent moisture. DDGS have an almost indefinite shelf life and may be shipped to any market, but drying is costly, as it requires further energy input. It is packaged and traded as a commodity product.

In general, 56 pounds of corn (one bushel) will produce a little less than 27 pounds of WDG, or slightly more than 17 pounds of DDGS. Distillers Grains can be fed to swine, poultry, and beef or dairy cattle. Because of physiological differences, swine and poultry are fed mostly DDGS while cattle can be fed either WDG or DDGS. Distillers Grains are high in good-quality protein and also contain other desirable nutrients for beef and dairy cattle. They are an excellent protein supplement and are often used in place of soybean meal. DDGS can make a good supplement for swine and poultry as well, but require more care to balance the diet. Because the nutrient profile of Distillers Grains is more suitable to cattle, most is fed to beef or dairy cattle and there is an ample literature on when and how it can best be added their diet.

Of the KDA members we surveyed, the smaller distillers all gave away their WDG to one or two farms within an hour's drive of the distillery. One craft distillery has even been contemplating raising cattle as a side business. The larger distilleries handle their Distillers Grains in a variety of ways. Some give away all of their WDG to farmers in the region, some sell all or most of their WDG, some dry their WDG and sell DDGS, and some distilleries give some of their WDG away but dry a significant portion to sell as DDGS. The variety of approaches to handling Distillers Grains has much to do with the costs associated with drying equipment and the logistics of managing WDG. The economic viability of drying grains is dependent on the size of the distillery and its ability to logistically manage spent grains. Smaller distilleries will not produce enough volume of spent grains to overcome the costs of operating (energy), maintaining, and purchasing drying equipment. As distillery size increases there comes a point where drying the spent grain becomes profitable. In addition, WDG have their own costs associated with holding tank capacity and logistically managing their distribution given their short shelf life. These costs tend to increase with distillery size, and at some point make drying at least some of the spent grains worthwhile. We estimate that about 60 percent of Kentucky distillers' Distillers Grains are sold (mostly as DDGS, but some WDG) while the remainder is given away as WDG to farms within an hour's drive.

Kentucky distillers use about 680 million pounds of corn each year. That translates to just over 325 million pounds of WDG each year. If an average of 10 pounds eaten per day, Kentucky's distillers produce enough Distillers Grains to feed almost 90,000 cows for a year, depending upon its age, size, and what other foods are available to it. That seems like a lot, but there are currently one million head of beef cattle on Kentucky farms. WDG are presently selling in the Midwestern states for \$30 to \$40 per ton (USDA Market News Service). At those prices, a full year's worth of WDG from Kentucky's distillers would be worth about \$5.7 million. Alternatively, if all of the Distillers Grains were dried there would be about 210 million pounds of DDGS produced by Kentucky distillers each year. With DDGS prices currently in the range of \$110 to \$130 per ton the potential value of a year's worth of DDGS from Kentucky's distillers is about \$12.6 million. Kentucky distillers gave away about \$2.5 million worth of WDG to local farmers last year, while giving up about \$5 million in potential revenue from DDGS (this does not take into account the cost of drying the WDG).

### **Taxation and Fiscal Impacts of the Industry**

In this section, we investigate and document the large amounts of tax revenues paid directly and indirectly by the industry to state and local governments in Kentucky. These tax payments are in addition to the sizable federal excise tax paid by the industry. The federal excise tax rate is \$13.50 per proof gallon shipped. Given that there were about 75 million proof gallons of Bourbon and Tennessee whiskey either sold in the U.S. or exported during 2013, and Kentucky Bourbon made up about half of that total, Kentucky distillers paid somewhere around \$500 million in federal excise taxes during 2013.

There are many types of taxes that distillers and spirit consumers pay, and the taxes go to many different jurisdictions in Kentucky. Indeed, this is the most complicated part of our analysis. We have collected data and made estimates for the most important tax items, including local and state property taxes, state alcohol production and consumption taxes, local occupational taxes, and Kentucky state individual income and sales taxes. We also provide some information on how Kentucky compares to other states in its tax treatment of distilled spirits.

A summary of our estimates is provided in the table below. All entries refer to the latest year available for data, primarily calendar or fiscal year 2013. Production-related taxes account for \$91 million of the \$166 million total. Some of the entries are based on courthouse records and official government tallies, some on company-provided reports, while other entries are estimates based on historical ratios or national industry figures. Clearly, Kentucky state government is the biggest tax recipient, accounting for 85 percent of the total over all levels of government. Local governments and school districts are the biggest recipients of property taxes paid by the industry.

#### **Estimated Annual Kentucky Taxes on the Production and Consumption of Distilled Spirits**

	<b>Local Public Schools</b>	<b>City, County, Other Local Governments</b>	<b>Kentucky State Government</b>	<b>Total</b>
<b>Production-related</b>				
Property taxes - real estate and tangible property	\$1,623,542	\$1,029,714	\$947,626	\$3,600,882
Property taxes - spirits aging in barrels	\$7,498,733	\$3,668,578	\$772,733	\$11,940,044
Individual income taxes from distillery-related payrolls			\$32,792,590	\$32,792,590
General sales taxes from distillery-related payrolls			\$28,494,070	\$28,494,070
Occupational taxes from distillery-related payrolls	\$1,011,881	\$7,412,497		\$8,424,378
Corporate income taxes paid (partial)*		\$50,000	\$6,000,000	\$6,050,000
Distilled spirits license fees		\$63,500	\$173,690	\$237,190
Subtotal	\$10,134,156	\$12,224,288	\$69,180,709	\$91,539,153
<b>Consumption-related</b>				
Case sales tax			\$122,873	\$122,873
Excise tax per gallon			\$11,962,448	\$11,962,448
Wholesale tax			\$31,911,903	\$31,911,903
General retail sales tax, restaurants and bars			\$9,908,614	\$9,908,614
Package retail sales tax			\$16,358,821	\$16,358,821
Distilled spirits license fees		\$3,109,630	\$1,588,077	\$4,697,707
Subtotal		\$3,109,630	\$71,852,736	\$74,962,366
<b>Grand Total</b>	<b>\$10,134,156</b>	<b>\$15,333,918</b>	<b>\$141,033,445</b>	<b>\$166,501,519</b>

\* This represents an estimate based on a five year average of Kentucky corporate income tax payments and local net profits tax payments from some, but not all, the major companies compiled for the previous version of this study. Corporate income tax payments tend to vary widely from year to year, making prediction unreliable.

The entries are probably the most important taxes on distilled spirits, but there are many other taxes paid that are harder to quantify. For example, we do not know the amount of insurance premiums,

gasoline, and utility taxes paid to state and local governments. So, \$166 million should be considered a lower bound on the true unknown amount of taxes paid.

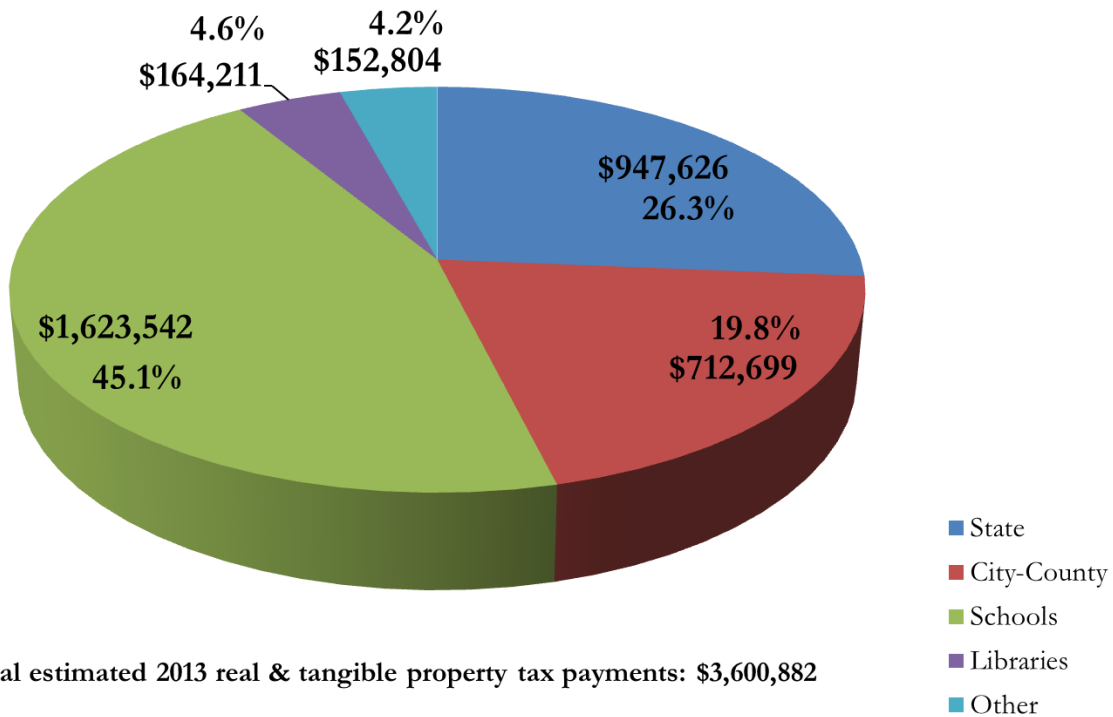
In the following sections we will discuss each type of tax in the table individually and then compare our results with the previous report.

### Property taxes

A distillery may pay property taxes on its land and buildings to the local school system, the county government, the city government, a fire district, a library, health or agricultural district, and the state of Kentucky. They also pay tangible property taxes to those jurisdictions on the value of machinery, furniture, vehicles, and the distilled spirits aging in warehouses.

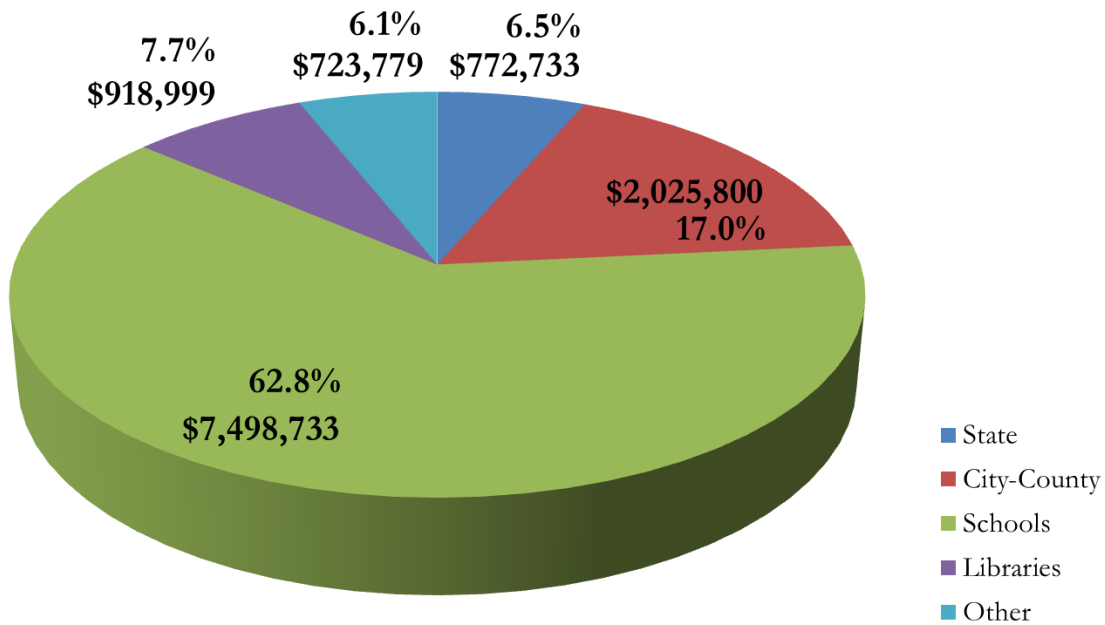
We have attempted to track down the various properties owned by the distillery companies, and to organize public information on their tax bills in 2013. We used a combination of web searches, courthouse visits and phone calls to collect data on assessments and taxes paid. We were able to identify a total of about \$3.6 million paid to local and state governments. The assessed value of land, buildings, equipment, and inventory (ready to sell) was \$634 million, of which \$233 million was real estate and \$401 million was tangible property. The pie chart shows the distribution of taxes paid by jurisdiction type. Public schools are the biggest recipient of property tax payments, with revenues of about \$1,624,000, or 45 percent of the total. Kentucky state government is next, with \$947,000 (26 percent), followed by city and county governments with nearly \$713,000 (just over four percent each). The 'Other' category includes property tax revenues received by local health departments, agricultural extension offices, soil conservation districts, fire districts, and an air board.

### Estimated Real and Tangible Property Taxes Paid by Kentucky Distillers, 2013



The distillery industry also pays property tax on all of their Bourbon and distilled spirits aging in barrels sitting in bonded warehouses. The tax payments are substantial, most of it going to local jurisdictions. The industry paid roughly \$11.9 million in distilled spirits taxes to local governments in 2013. The next pie chart shows the distribution of these payments to city and county governments, public schools, libraries and other local government. Schools receive almost 63 percent of these tax payments, with revenues of \$7.5 million. City and county governments and library districts collected \$2 million (17 percent) and \$900,000 (close to eight percent), respectively. Over \$700,000 (six percent) went to various other government entities.

### Estimated Distilled Spirits Property Taxes Paid by Kentucky Distillers, 2013



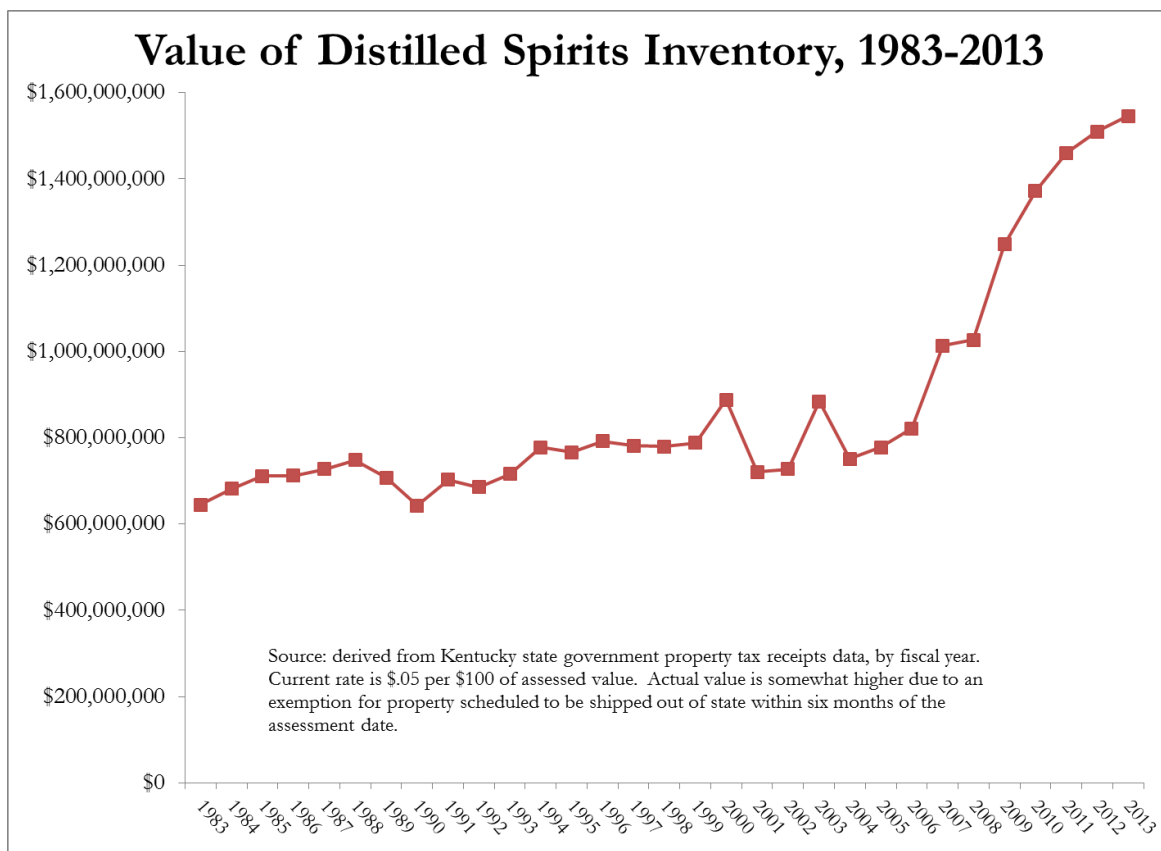
**Total estimated 2013 distilled spirits in bonded warehouses tax payments: \$11,940,044**

Distilleries separately pay tax on distilled spirits inventory to Kentucky state government, and we have compiled a history of the value of the distilled spirits aging in bonded warehouses from the tax collections data reported by the Kentucky Department of Revenue. The state tax rate is \$0.05 per \$100 of valuation. In fiscal year 2013, the state received nearly \$773,000 in receipts from this tax, implying an inventory value of \$1.55 billion. Using historical data on General Fund receipts from this tax we can see the upward trend in inventory values over the past twenty-five years, displayed in the chart on the next page.

Kentucky is the only place in the world that taxes aging distilled spirits on an annual basis as property, and the state's distillers have long argued that it puts them at a competitive disadvantage and may stunt the growth of craft distillers here because the fledgling businesses can least afford the extra expense. This is particularly relevant because Bourbon is an important part of the business plan for most of Kentucky's current craft distillers and will likely be the case going forward. Bourbon ages longer than most other spirits products, tying up important capital, particularly for start-up distilleries.

It is also the case that most of the tax collections on these aging barrels occur in just nine counties, with only Jefferson County having a population above 100,000 people, so the taxes collected at the local level have a big impact in those communities. A compromise was reached with the passage this

spring in the Kentucky General Assembly of House Bill 445 which provides the distilleries with a corporate income tax credit against the amount of barrel taxes paid, and requires distilleries to reinvest that money into their Kentucky operations. The reinvestment tax credit will help with the planned \$630 million in near-term capital investment as the industry continues its expansion.



### Alcohol consumption taxes

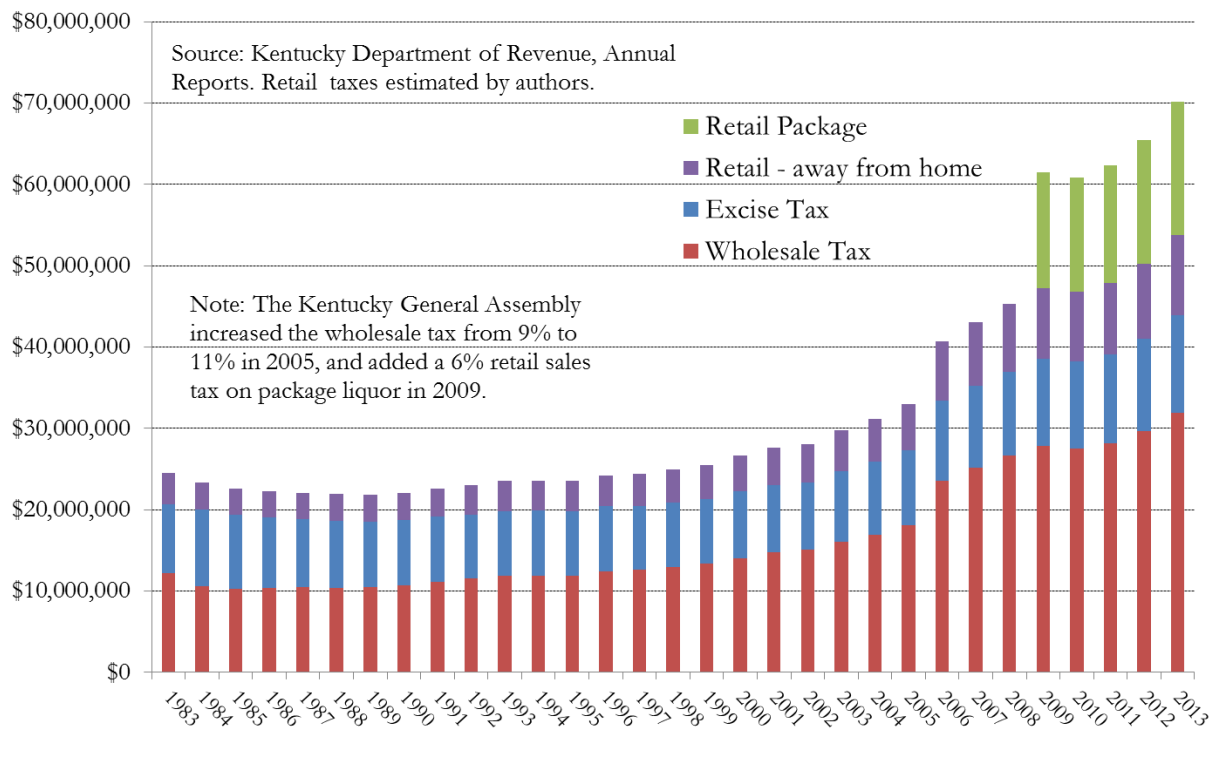
Kentucky state government levies a number of taxes on alcohol sales generally, and distilled spirits in particular. Kentucky taxes alcohol consumption away from home (restaurants, bars, hotels) at a 6 percent rate, and levies the same rate on package sales at liquor stores. Kentucky also taxes at the wholesale level, with an 11 percent sales tax collected on transactions from wholesalers to retailers, and an excise tax of \$1.92 per wine-gallon of spirits sold. There is also a 'case tax' of \$0.05 per case levied on wholesalers, though this brings in only around \$100,000 per year in revenues to state government.

Refer to the accompanying chart for historical data on tax receipts, some of which are from state government reports and some estimated. Clearly, this has been a growing source of revenue for Kentucky state government. The wholesale tax brought in \$31.9 million in revenue to the Kentucky state General Fund in fiscal year 2013, based on the wholesale value of liquor of about \$290 million. The excise tax brought in over \$12 million in revenue the last fiscal year.

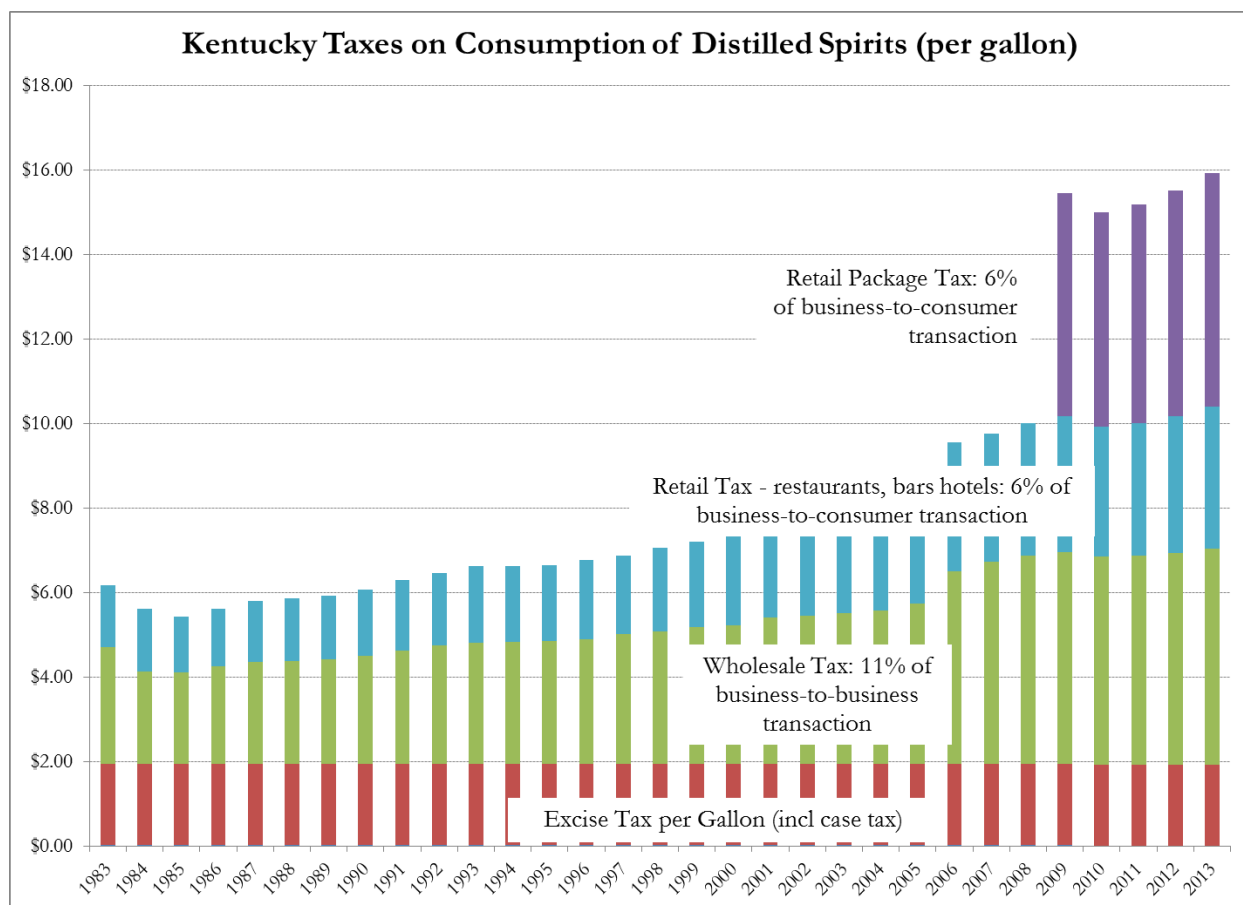
Since there is no state level data available yet from the 2012 Economic Census, we use the 2007 Economic Census' break out of restaurant and bar sales by type in Kentucky to help us estimate retail alcohol consumption taxes. The Census Bureau estimated that the 'Food services and drinking places' industry in Kentucky had \$5.3 billion in total sales in 2007. Of that, distilled spirits accounted for \$122 million, wine \$55 million, and beer \$160 million. Also, according to the Census Bureau, sales of distilled spirits account for 1.5 percent of hotel revenues, or about \$8.2 million. Thus, sales of distilled spirits (for immediate consumption) at Kentucky restaurants, bars, and hotels was about \$130 million in 2007. We use historical growth in wholesale receipts to estimate these retail sales away from home for other years, and multiply by six percent to estimate state tax revenues.

The Kentucky Revenue Cabinet has not provided tax revenue data generated from the 6 percent package retail tax. We have made an estimate using retail sales data on liquor stores in Kentucky. The 2007 Economic Census reported that total retail sales of 'Beer, wine, and liquor stores' was \$525 million. Details at the federal level show that such stores derived 40.9 percent of their revenues from distilled spirits. This implies that package spirits sales at such stores were \$215 million that year. A 6 percent retail tax would thus bring in around \$12.9 million revenues to state government, and we have brought the estimate forward using the growth in wholesale tax revenues. The four consumption tax streams are shown in the accompanying chart, with Kentucky state tax revenues hitting \$70 million in 2013.

## Kentucky State Tax Receipts on Consumption of Distilled Spirits, Fiscal Years 1983-2013



It is not straightforward to aggregate these different tax rates, or do comparisons over time or with other states, because the tax base may vary by category of tax. Excise taxes are levied by volume (gallons, cases), while wholesale and retail sales taxes are levied by sale price. We have attempted to convert Kentucky's taxes on consumption of distilled spirits to a single basis to get insight into the total tax per unit, as well as the historic trends. For retail consumption, we assumed a 50 percent split between purchases at restaurants, bars and hotels versus package sales. We divided sales tax receipts by gallons, as revealed from the excise tax paid by wholesalers. This implies that the 6 percent retail tax in Kentucky amounts to a tax of \$3.35 per gallon, and package sales are taxed at a rate of \$5.53 per gallon. The combined tax, wholesale and retail, on consumption is now approaching \$16 per gallon, double what it was in 1984.



The wholesale and retail taxes are important revenue streams to Kentucky state government. However, because they are based on household consumption, nearly all of these revenues would remain even if Kentucky's distilling industry were not here. Certainly, high taxes get reflected in higher prices of spirits in Kentucky, and consumers shift purchases to bordering states (and to other products) if their tax rates are lower. But this consumption substitution occurs independently of where the spirits production occurs.

It is difficult to compare taxation of distilled spirits among states, even when limiting the scope to consumption and ignoring the taxation of production. Many states levy excise taxes at the wholesale level, on a per gallon basis. Excise taxes are those levied on specific commodities, based on volume not as a percentage of sales value. Examples include gasoline per gallon, cigarettes per pack, and wine and beer (per gallon). Kentucky also levies a wholesale sales tax of 11 percent on the value of the transaction between wholesalers and retailers. Kentucky is the only state where wholesalers pay a tax on both the volume of distilled spirits and their value every time they transact with retailers. There are four other states that levy per case or per bottle excise taxes (Arkansas, Minnesota, South Carolina, and Tennessee), all higher than the \$0.05 per case Kentucky levies.

Seventeen states sell spirits through state-owned or price-regulated outlets, including three of our bordering states: Ohio, Virginia, and West Virginia. These are often referred to as 'control' states as

opposed to ‘open’ states. These states effectively set retail prices by various mark-up formulas, with the purpose of enhancing state revenues and, in some cases, limiting access. Additionally, most states levy a general retail sales tax that covers alcohol sales in restaurants, bars, hotels, and sometimes in package stores. Also, city and county governments in most states levy an additional sales tax.

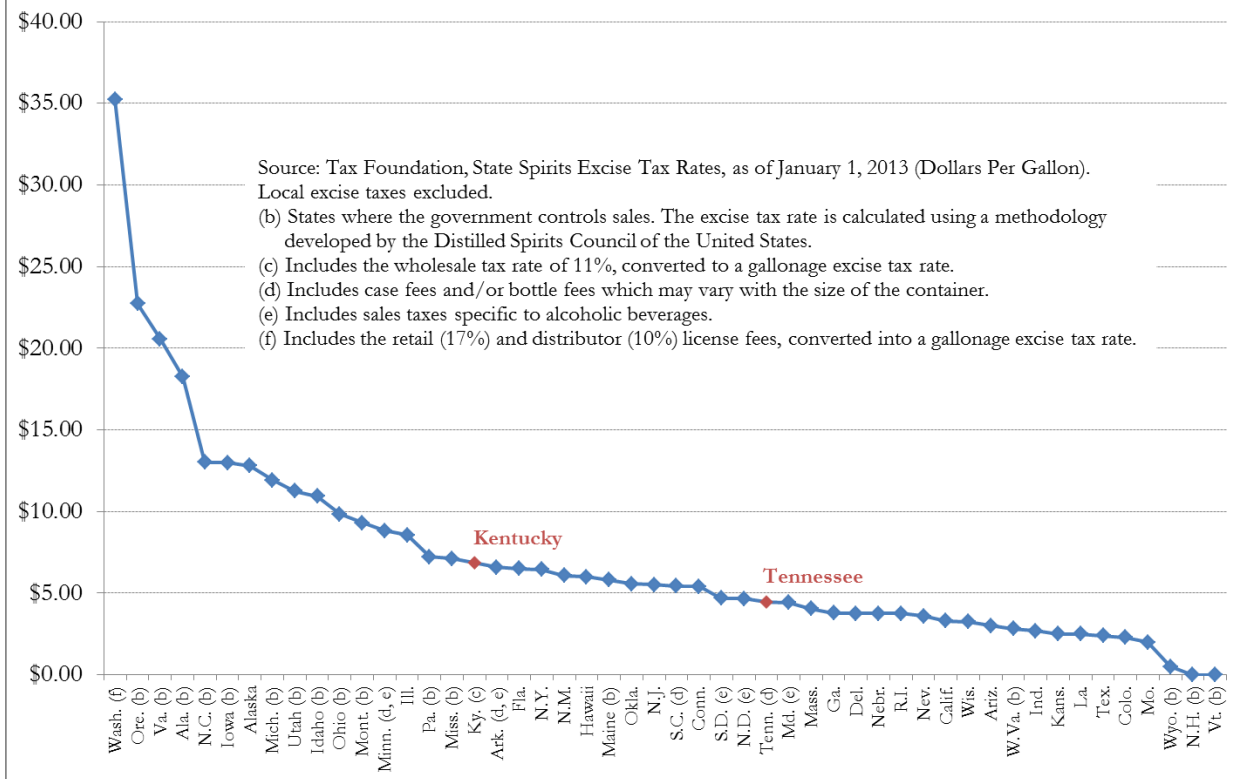
The Tax Foundation compiles a listing of state excise taxes each year. It collaborates with DISCUS to estimate excise taxes in states where spirits are only sold in state-owned or price-regulated stores. They adjusted their estimates to include the wholesale tax for Kentucky, converting from a percentage to per gallon basis, as we also did in the previous chart. The next table shows the rates for Kentucky and its bordering states, along with each state’s rank among all 50 states. Kentucky ranks fourth highest among its bordering states in terms of excise and wholesale taxes combined. Among all states, Kentucky ranks 17<sup>th</sup> highest. Among the 33 open states, Kentucky ranks 5<sup>th</sup> highest behind just Washington, Alaska, Minnesota, and Illinois. This comparison does not reflect differences in additional state taxation at the retail level, at restaurants and bars, or in package stores. Note that Tennessee, second to Kentucky in whiskey production nationally, taxes distilled spirits at about two-thirds the rate as Kentucky. However, Tennessee does have much higher state and local sales taxes on both package spirits and spirits by the drink. The chart shows the rates for all states.

**State Excise and Wholesale Distilled Spirits Excise and Wholesale Tax  
Rates per Gallon, 2013  
Kentucky and Bordering States**

	<b>Tax Rate</b>	<b>National Rank</b>	
Missouri	\$2.00	47	* Ohio, W. Virginia, and Virginia are states where the government controls sales. In these “control states,” products are subject to ad valorem mark-up and excise taxes. The excise tax rate is calculated using a methodology developed by the Distilled Spirits Council of the United States.
Indiana	\$2.68	42	
West Virginia*	\$2.82	41	
Tennessee	\$4.46	30	
Kentucky	\$6.86	17	
Illinois	\$8.55	14	
Ohio*	\$9.84	11	
Virginia*	\$20.56	3	

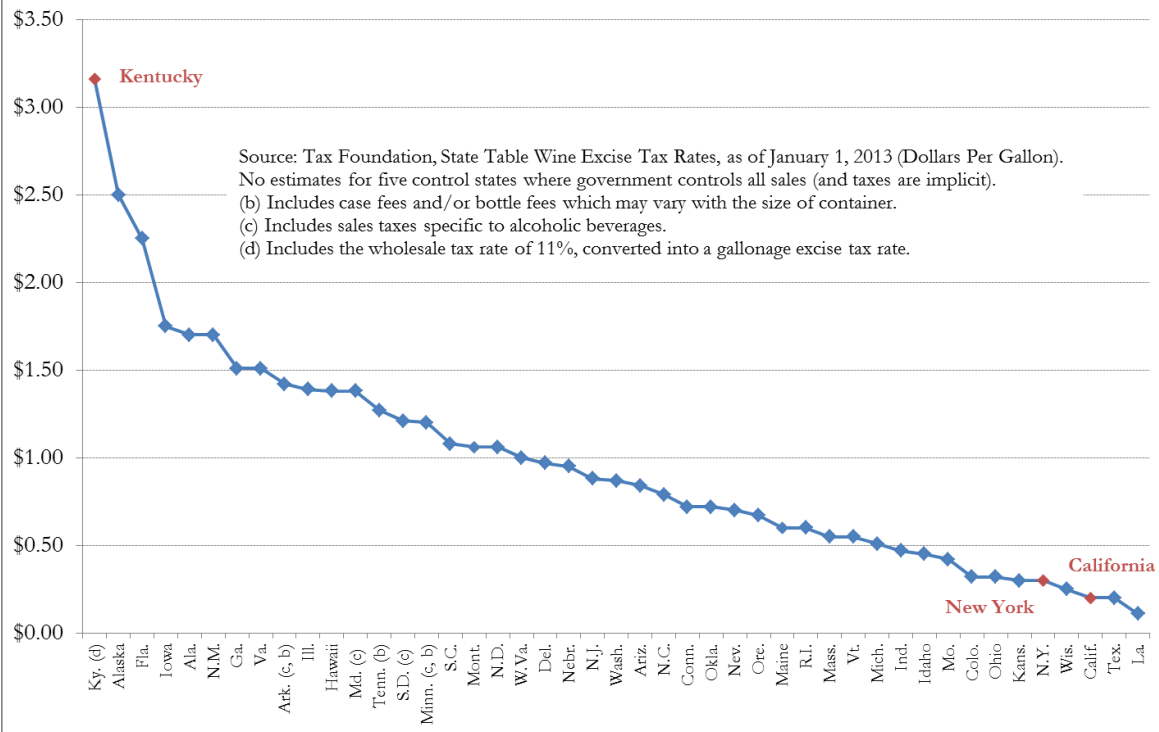
Source: Tax Foundation.

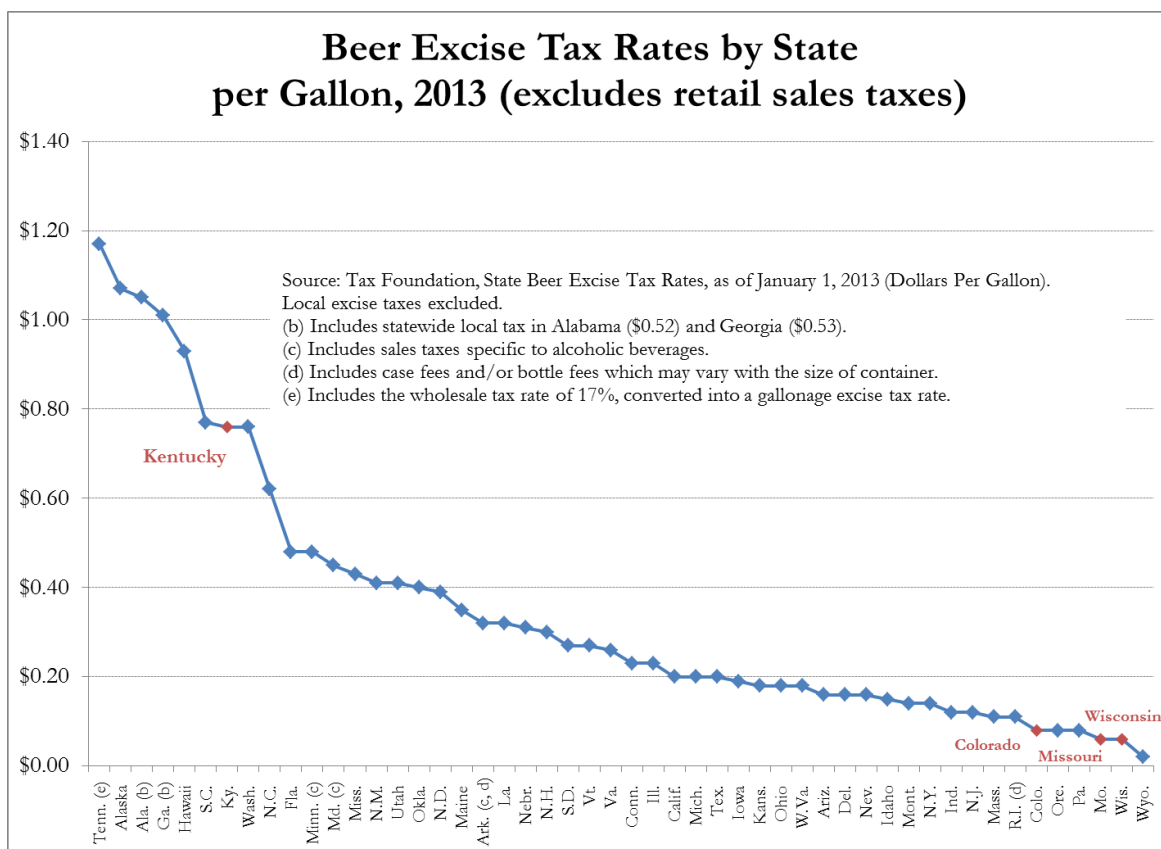
## Distilled Spirits Excise Tax Rates by State per Gallon, 2013 (excludes retail sales taxes)



It is interesting to see how other major alcohol-producing states tax production. California, for example, dominates wine production in the United States, followed by New York state. These two states rank near the bottom in wine excise taxes. Similarly, Missouri, Colorado and Wisconsin are the top states for beer production, and they also rank near the bottom in beer excise taxes. See charts.

## Wine Excise Tax Rates by State per Gallon, 2013 (excludes retail sales taxes)





## State licenses and fees

The Kentucky Department of Alcoholic Beverage Control administers a number of license fees that apply to any business producing, storing, transporting, distributing, selling, or serving alcoholic beverages within the state. In fiscal year 2013, the state collected \$5.6 million in fees for these licenses. There currently over 13,400 active licenses, and given the current fee structure the state has collected about \$5.7 million in their issuance. Not all of those are relevant to the distilling industry, as many are restricted to those who produce, sell, or serve only malt beverages or wine. But around 8,500 either directly or indirectly impact the distilling industry through their treatment of distilled spirits.

On the production side there are distiller's Class A and B licenses and a storage license which bring in \$173,000 from the state's distillers. The Kentucky General Assembly passed SB 83 during the 2014 Session which created the new Class B (craft) license for distillers producing fewer than 50,000 gallons of spirits annually. The bill has only been in effect since mid-July, so the distilling and storage licensing fees will drop a bit in the near future as many of the smaller distilleries will switch to the new Class B license when they next renew their licenses (the Class B license is \$1,000 versus the \$3,090 they paid for their current license). However, since several of the new distillery projects either under construction or announced will be larger Class A facilities, and the number of Class B sized

distilleries is expected to increase significantly over time, the drop in revenue from these licenses should be shortlived.

On the consumption side, we group together many different licenses for retail drink and package sales, transportation, wholesale, distribution, and solicitors or agents. We use national sales ratios of retail sales of beer, wine, and spirits from DISCUS to derive the percentage of these fees attributable to distilled spirits. For 2013, spirits accounted for about 35 percent of alcohol sales, and the ratio between spirits and wine was approximately two-to-one. Applying these ratios to the appropriate licenses, we estimate that distilled spirits currently account for \$1.6 million in consumption related license fees paid to the state.

### **Local licenses and fees**

Any business selling alcoholic beverages in Kentucky must pay annual license fees to local governments. This includes restaurants, caterers, hotels, bars, grocery stores, pharmacies, and package stores. The fees vary by type of alcohol sold and by size of city. For example, a restaurant in Louisville offering spirits must pay the City-County government \$1,600 each year, compared to \$500 in Morehead. Moreover, jurisdictions typically assess different fee amounts for different types of establishments (e.g., airport, racetrack, restaurant, package store), and even by time of day (higher fees if establishment is open after midnight).

We do not know the total amount of fees paid annually to all the jurisdictions. Some alcohol sales are allowed in 66 counties, many of which have multiple cities of different sizes and alcohol laws. Nevertheless, we can make a rough estimate from some published data. In Jefferson County, the Metro government handles all licensing throughout the county, and collects about \$2.2 million annually in license fees. The comparable number for the Lexington-Fayette Urban County Government is \$0.9 million. These two counties combined account for 24 percent of the state's population, but they account for 37 percent of the state's retail sales by package stores, 37 percent of restaurant sales, and 48 percent of hotel sales. So, a reasonable estimate is that statewide alcohol license fees are about three times the collections in Jefferson and Fayette County, or \$9.3 million. Of course, not all of that can be attributed to distilled spirits. Using national ratios of retail sales of beer, wine, and spirits, we believe the spirits portion accounts for about 35 percent of alcohol sales. Thus, we estimate that distilled spirits accounts for \$3.1 million in license fees for local governments annually in Kentucky.

### **Tax revenues related to payroll of distilleries**

We have considered the direct property taxes paid by distillers, the excise and sales taxes paid by consumers of distilled spirits, and the license fees paid by retailers. Next we turn to the income and sales tax paid by employees who owe their incomes to distillery operations in Kentucky. The most important categories are the Kentucky individual income tax, the Kentucky general sales tax, and the occupational taxes paid to local governments. In several counties, we suspect that the distillery's employees are the largest direct payer of occupational taxes among all places of employment, but firm-specific payroll data is not publicly available.

Kentucky income and sales tax receipts related to distillery payrolls can be estimated using effective tax rates. Effective tax rates are calculated by dividing historical tax revenues by payrolls, as shown in the accompanying table. We use the average effective tax rates over the 2003-13 period. The effective income tax rate is 4.64% and the effective sales tax rate is 4.03%.

<b>Effective Tax Rates for Kentucky Income and Sales Taxes</b>					
<b>Fiscal Year</b>	<b>Wages &amp; Salaries Paid in KY, Adjusted to Fiscal Year Basis</b>	<b>Income Tax</b>		<b>Sales &amp; Use Tax</b>	
		<b>Receipts</b>	<b>Effective Tax Rates</b>	<b>Receipts</b>	<b>Effective Tax Rates</b>
2012-13	\$77,848,478,500	\$3,722,963,791	4.78%	\$3,021,794,387	3.88%
2011-12	\$75,853,630,000	\$3,512,075,128	4.63%	\$3,052,236,048	4.02%
2010-11	\$73,301,291,000	\$3,417,778,504	4.66%	\$2,896,251,816	3.95%
2009-10	\$71,214,897,500	\$3,154,488,000	4.43%	\$2,794,057,329	3.92%
2008-09	\$71,418,616,500	\$3,315,368,217	4.64%	\$2,857,665,168	4.00%
2007-08	\$71,481,100,000	\$3,483,137,317	4.87%	\$2,877,814,014	4.03%
2006-07	\$68,972,090,500	\$3,041,535,604	4.41%	\$2,817,652,253	4.09%
2005-06	\$65,735,048,500	\$2,918,610,982	4.44%	\$2,749,765,011	4.18%
2004-05	\$62,781,965,000	\$3,036,230,706	4.84%	\$2,594,966,373	4.13%
2003-04	\$59,981,119,000	\$2,796,331,049	4.66%	\$2,447,584,698	4.08%
			<b>4.64%</b>		<b>4.03%</b>

Sources: U.S. Bureau of Economic Analysis; Kentucky Department of Revenue Annual Report 2012-13.

Multiplied times the total distillery-related payroll of \$707 million yields \$32.8 million in Kentucky individual income tax receipts and \$28.5 million in Kentucky sales tax receipts, for a total of \$61.3 million to state government annually. This represents an estimate of how much less in tax receipts Kentucky state government would receive from these two most important categories were the distillery industry to go to another state.

Next, we turn to occupational taxes received by local governments. We have taken the local government jurisdictions that levy occupational taxes in locations containing Kentucky distilleries and weighted their rates by the number of distillery jobs in that jurisdiction. This gives us a weighted average local occupational tax to apply to the direct payroll impact of the IMPLAN model. We have also created a weighted average of all occupational taxes across the state using population inside and outside these jurisdictions as the weight. We apply this weighted average to the combined indirect and induced payroll impact. We applied the same methods for school district occupational taxes. Most of these jurisdictions also levy a ‘net profits tax’ on companies, typically at the same rate as the tax on payrolls, but we do not have data on corporate profits subject to the tax.

Applying the appropriate distillery-related payroll impact (either direct or combined indirect and induced) to the weighted local tax rates, we estimate that local school districts received about \$1 million in occupational taxes in 2013, and local city or county governments received \$7.4 million.

### Comparison to the 2012 study

The next table compares our current estimates of the taxes generated at all levels of government that can be attributed to the impact of the distilling industry with the estimates from our January 2012 study. In total, we estimate that the industry can be said to be generating 18 percent more tax revenue throughout the state than it did in 2010, around \$25.5 million. Note that in the table below we report individual income tax, general sales tax, and occupational taxes from distillery-related payrolls for 2010 based on our recalculated impacts using the impact methodology of this study, so the figures are greater than previously reported.

#### Comparison of Estimated Annual Kentucky Taxes on the Production and Consumption of Distilled Spirits, Current versus the 2012 Study

Revenues Generated at All Levels of Government	2013	2010	Change	Percent
<b>Production-related</b>				
Property taxes - real estate and tangible property	\$3,600,882	\$2,705,829	\$895,053	33.1%
Property taxes - spirits aging in barrels	\$11,940,044	\$11,697,908	\$242,136	2.1%
Individual income taxes from distillery-related payrolls	\$32,792,590	\$25,248,351	\$7,544,239	29.9%
General sales taxes from distillery-related payrolls	\$28,494,070	\$21,938,745	\$6,555,325	29.9%
Occupational taxes from distillery-related payrolls	\$8,424,378	\$6,497,408	\$1,926,969	29.7%
Corporate income taxes paid (partial)*	\$6,050,000	\$5,917,009	\$132,991	2.2%
Distilled spirits license fees**	\$237,190	\$186,790	\$50,400	27.0%
Subtotal	\$91,539,153	\$74,192,041	\$17,347,112	23.4%
<b>Consumption-related</b>				
Case sales tax	\$122,873	\$110,086	\$12,787	11.6%
Excise tax per gallon	\$11,962,448	\$10,942,531	\$1,019,917	9.3%
Wholesale tax	\$31,911,903	\$28,175,617	\$3,736,286	13.3%
General retail sales tax, restaurants and bars	\$9,908,614	\$8,748,501	\$1,160,113	13.3%
Package retail sales tax	\$16,358,821	\$14,443,509	\$1,915,312	13.3%
Distilled spirits license fees**	\$4,697,707	\$4,301,591	\$396,116	9.2%
Subtotal	\$74,962,366	\$66,721,835	\$8,240,531	12.4%
<b>Grand Total</b>	<b>\$166,501,519</b>	<b>\$140,913,876</b>	<b>\$25,587,643</b>	<b>18.2%</b>

\* This represents an estimate based on a five year average of Kentucky corporate income tax payments and local net profits tax payments from some, but not all, the major companies compiled for the previous version of this study. Corporate income tax payments tend to vary widely from year to year, making prediction unreliable.

\*\* Distilled spirits license fees at the state level were not included in the previous report, but we have estimated what they would have been and added that to the 2010 results.

The changes in the consumption related taxes are fairly straightforward. Simply put, Kentucky consumers have been just as much a part of the worldwide Bourbon boom as anybody else. Since the tax rates have all remained the same, it is simply a matter of the number of cases and gallons sold in the state, and the value of sales increasing. That the excise tax per gallon has the lowest percentage increase tells us that the average price of the spirits Kentuckians have been drinking is going up, which is consistent with the growth of premium brands.

On the production side of things, the increases in property taxes and distilled spirits license fees reflect the recent wave of investment made by the distillers and the increase in the number of licensed distillers. The large increases of the income, sales, and occupational taxes are all related to the total payroll effect of our input-output model which estimated that \$707 million in payroll at Kentucky businesses was being directly or indirectly supported by the distilling industry. This is 30 percent more than the revised model from the previous study (\$544 million).

### **The Kentucky Bourbon Trail® and its Tourism Potential**

At the time of our research, the Kentucky Bourbon Trail® featured eight distilleries in the Louisville, Lexington, Shepherdsville, Bardstown, Lawrenceburg, and Versailles areas. A ninth stop was added in mid-September – the historic Stitzel-Weller distillery in Louisville, which is opening for the first time to the public. And, Four Roses Distillery announced recently that its Cox’s Creek bottling and aging center will become part of its Kentucky Bourbon Trail® experience. Founded by the KDA in 1999, the Kentucky Bourbon Trail® tour has generated significant media exposure for participating distilleries as well as the Commonwealth. National Geographic named it a top 10 “Best Spring Trip” in 2013, and CNN International designated it a “Top 10 Classic American Experience.”

The attraction has expanded from its original six distilleries which all have long histories of operation and venerable labels with worldwide brand recognition. It now also includes two new kinds of ventures that are bringing the full Bourbon experience to Kentucky’s two largest cities. The first is a brand new distillery in the heart of Lexington, Alltech’s Town Branch, and the second, Evan Williams Bourbon Experience, is appropriately located on Louisville’s “Whiskey Row” as it combines an artisan distillery with an immersive educational experience. (Brown-Forman’s Old Forester Distillery, Michter’s Distillery and the Angel’s Envy Distillery, all planned for Whiskey Row in Louisville, also are prime candidates for future Kentucky Bourbon Trail® stops). Aside from these newcomers, Four Roses, Jim Beam, Maker’s Mark, Wild Turkey, and Woodford Reserve have all expanded, upgraded, and thoroughly renovated their visitor centers and revamped their tour experiences during the last two years. Jim Beam, Maker’s Mark, and Woodford Reserve now have more than 100,000 visitors a year tour their distilleries, with Four Roses, Heaven Hill’s Bardstown visitors center, and Wild Turkey not too far behind.

Overall visitation on the Kentucky Bourbon Trail® increased by 12 percent from 2012 to 2013 as a record 571,701 people toured at least one participating distillery. An additional 61,698 traveled to the Kentucky Bourbon Trail Craft Tour® in its first full year of existence, for a total of 633,399 distillery guests statewide.

The three new stops on the Kentucky Bourbon Trail® tour also highlight the growing interest in small artisanal, or craft, distilling. The complementary Kentucky Bourbon Trail Craft Tour®, created in the fall of 2012, now features nine craft distilleries, up from seven in its founding. Four are in close proximity to most of the main tour's member distilleries, but two are in far northeast Kentucky and three are spread across western Kentucky. The Kentucky Bourbon Trail Craft Tour® has also experienced significant growth, with some of the craft distilleries seeing 10,000 to 20,000 visitors during 2013. Nearly 62,000 people traveled the Kentucky Bourbon Trail Craft Tour® in its first year of existence, indicating its bright future as a tourism stop.



Loyal, or simply curious, customers like to visit the places where the whiskey is made, to learn about the distilling process and rich and storied history of Kentucky Bourbon dating back more than 200 years, and enjoy the pastoral settings. Like some wine regions of California and Europe, there is potential to make the Kentucky Bourbon Trail® and Kentucky Bourbon Trail Craft Tour® experiences a major tourism attraction that can bring new dollars into the Kentucky communities and further enhance the spirits industry. Indeed, there is evidence of strong growth in tourism activity since our last study. Kentucky state government, local visitor and convention bureaus, and private businesses have been investing considerable time and dollars in establishing and marketing this tourism asset.

### **Sites, visitation data**

Begun in 2007, the Kentucky Distillers' Association has a program that recognizes people who visit all of the Kentucky Bourbon Trail® distilleries. Once a person has their 'Passport' stamped at each site, they can either mail it to the KDA or take it to the visitor and convention bureau offices in Louisville, Bardstown, Lebanon, or Shepherdsville to receive a free t-shirt. This program generates a database of people, along with their home addresses and key demographic information. Clearly, the Kentucky Bourbon Trail® attracts nationwide patronage, as seen in the accompanying table. We have address information for about three-quarters of the approximately 60,000 Passport holders who had completed the entire tour through the end of 2013. Only 17 percent of those Passport holders live in Kentucky, but the percentage has actually dropped from 18 percent during the first four years of the Kentucky Bourbon Trail® tour to 15 percent over the last two years. Naturally, many Passport holders are residents of nearby Ohio and Indiana, with nearly 30 percent visiting from the Bourbon region's closest neighbors. Kentucky's other bordering states account for another 17 percent of visitors. The percentage of visitation from all of Kentucky's seven bordering states has increased over the last two years by exactly as much as the Kentucky percentage has declined. The share of visitors from elsewhere in the U.S. has been a steady 36 percent. The individual states listed in the table are all among the top 15 states of origin for Passport holders. There is no particular geographic ordering to the list, with top states being located to the northwest, northeast, southwest and southeast of Kentucky, and on both coasts. In fact, about the only part of the country that the Kentucky Bourbon Trail® does not draw well from is the Pacific Northwest which is, ironically, home to many of the country's new craft distillers.

The Kentucky Bourbon Trail® also draws a steady stream of visitors from foreign countries. About 1.5 percent of passport holders have been from other countries, led by Canada, followed by combined European countries, and Australia and New Zealand. It may not seem like a large number of foreign visitors, but it does represent three out of every 200 Passport holders and one international visitor for every 10 from Kentucky.

### **Geographic Distribution of Kentucky Bourbon Trail® Passport Holders**

<b>State or Country</b>	<b>Percentage, 2007-2011</b>	<b>Percentage, 2012-2013</b>
Kentucky	18.43%	15.42%
Ohio and Indiana	27.52%	29.64%
Illinois, Missouri, Tennessee, Virginia, West Virginia	16.31%	17.19%
Elsewhere in the United States	36.07%	36.29%
Michigan	4.02%	4.42%
Pennsylvania	2.44%	2.96%
Texas	2.55%	2.86%
Florida	3.22%	2.72%
Wisconsin	2.19%	2.36%
Georgia	2.29%	2.29%
North Carolina	2.17%	2.29%
California	2.09%	2.01%
New York	1.67%	1.84%
Foreign Countries	1.67%	1.46%
Canada	0.73%	0.57%
Europe	0.47%	0.53%
Australia & New Zealand	0.36%	0.33%

Source: Kentucky Distillers' Association database.

These people are clearly serious visitors, as it would take three days to visit and tour all eight distilleries. Some no doubt did spread their visits over multiple trips (31 percent of Passport holders surveyed say they made more than one trip to Kentucky to complete the Kentucky Bourbon Trail®), perhaps on annual snowbird migrations from Michigan and Wisconsin. Some Passport holders learned of the tour through interstate signage or rest area visitor centers (about 11 percent of survey respondents indicated one or both of these methods), but the fact that 70 percent learned either through word of mouth or a website indicates a large degree of prior planning was involved in the decision to visit the distilleries. The potential economic impact of the enhanced tourism business is real and seems to just be beginning.

### **Visitor profiles, impacts**

The KDA asks Passport completers to answer an online survey. While it does not include questions on spending while in the region, it does include much useful information. We have examined 3,798 surveys completed since the beginning of 2011 through the first quarter of 2014. The proportion of Kentuckians among the survey respondents is actually lower (13 percent) than among the entire population of Passport completers. For the seven bordering states and foreign total the percentages are nearly identical. This suggests that the survey results are likely representative of Passport holders traveling from beyond the region. The survey responses show that:

- 73 percent reported that the Kentucky Bourbon Trail® tour was the primary reason for their visit to Kentucky, with only 3 percent reporting that they were just passing through the state;
- The average party contained 2.95 persons, and the average length of stay was 3.07 days (as estimated using midpoints of ranges reported);
- 75 percent stayed in area hotels or B&Bs, with only 7 percent staying at the homes of family or friends;
- 36 percent of the Passport visitors reported household income above \$100,000 annually. The respondents were asked to choose an income category, rather than revealing their exact income. Nevertheless, using the midpoints of the income ranges, it appears that the average household income of the group was \$95,800, with the median being in the range of \$85,000 to \$90,000;
- The average age of the responding visitor was 49, as estimated using midpoint of ranges reported;
- Half of Passport holders reported traveling in groups of two, and 38 percent reported traveling in groups of three to six people;
- 4 percent of the responding Passport holders reported traveling in groups of nine or more people, and just over one percent were with groups of eighteen or more people. This suggests that group travel is becoming an important aspect of the Kentucky Bourbon Trail®; and
- The tourism impact is spread throughout the region. Only 26 percent of respondents said they stayed overnight in Louisville and 31 percent in Lexington, the state's two largest cities and both home to Bourbon attractions. The city most stayed in overnight was Bardstown, with 35 percent of respondents having stayed there. But visitation was spread out among all of the towns in the region as can be seen in the table below. The survey presents the respondents with the nine cities in the table to choose from (or "other") and allows them to choose multiple cities. About 37 percent of respondents lodged in more than one city during their visit.

**Where Kentucky Bourbon Trail®  
Passport Completers Stayed Overnight**

	Number of Responses	Percent
Bardstown	1,308	35.3%
Lexington	1,156	31.2%
Louisville	972	26.2%
Lawrenceburg	302	8.1%
Versailles	195	5.3%
Shepherdsville	155	4.2%
Harrodsburg	108	2.9%
Lebanon	106	2.9%
Danville	44	1.2%
Other	833	20.7%
Respondents who stayed overnight in more than one city		37.0%

Source: KDA online survey of Passport completers, January 2011 through April 2014.

Including all of the Kentucky distilleries that offer tours of their facilities, from KDA statistics and various news reports, total distillery tour attendance during 2013 was approximately 735,000 people. The average distillery is open for tours on 350 days of the year (closed on major holidays and often on Sundays in January, February, and sometimes March), and given the tour lengths (usually an hour, but people usually spend more time at each distillery) and drive times between distilleries even a determined tour-goer can only manage two to three distillery tours per day. Thus, there are probably about 850 people each day who are out and about experiencing Bourbon tourism. Judging by the number of completed Passports in recent years, about 125 of those are Passport holders. While we have some information on the Passport participants we do not know very much about the other tour-goers. Therefore, the best we can do is construct estimates of the economic and fiscal impacts on communities near the Kentucky Bourbon Trail® distilleries of hypothetical tourists executing an itinerary typical of someone completing his or her Passport.

We have taken information from the survey of KDA members, the KDA survey of Passport holders, and information from several other tourism related economic impact studies to construct an estimate of a typical spending profile for an averaged size out-of-state party undertaking the Kentucky Bourbon Trail® over a three day period. We have adjusted the average size of a touring party to reflect a single lodging room per party. The average party size reported above includes many respondents who reported being in groups of eight or more people. Given the age and income demographics of the respondents, we think it is likely that nearly all of the larger parties are more

properly seen as two or more smaller parties traveling together. We also expect that people sharing a single lodging unit will spend elsewhere as a single party as well, independently of other people they may be traveling with. The adjustments yield an average party size of 2.49 people.

We expect them to spend about \$978 per party during their stay in Kentucky. We feel this is a fairly conservative estimate, especially given the average household income of Passport holders. The breakdown of spending categories is in the table below. We assume 87 percent of these out-of-state parties lodge in paid accommodations during their stay, averaging \$90 per night (the percentage use of paid accommodations rises significantly when Kentucky residents are excluded from the survey results). Transportation costs include gasoline for the drives among the distilleries and some side trips, plus rental car costs for a portion of the parties. Food and beverage costs are based on the Federal per diem rates for Louisville, Lexington, and other Kentucky cities, which are quite generous. Estimated retail purchases include spending at distillery gift shops (based upon reported spends from our KDA member survey) plus some extra spending. Finally, the recreation and entertainment estimate includes distillery tour admission fees with some additional spending elsewhere.

The table also shows the total spending by category that would result from 5,500 such parties traveling the Kentucky Bourbon Trail® for three days. Since we assume 2.49 people per party and 84.6 percent of recent Passport holders who have completed the trail are from outside of Kentucky, this corresponds to about 16,200 Passport holders in total, which is roughly the number who have completed their Passports during each of the last two years. We therefore base our economic impact analysis on this number of parties and believe it gives a good approximation of the impact that this significant portion of Kentucky Bourbon Trail® participants has imparted on the state of Kentucky each of the last two years.

**Estimates of Average Direct Tourist Spending in Kentucky  
by Non-Resident Kentucky Bourbon Trail® Participants  
Staying Three Nights in the Region**

<b>Per Party Spending Estimates</b>	
Lodging	\$234.90
Transportation	\$56.97
Food & Beverage	\$343.82
Retail Purchases	\$193.37
Recreation/Entertainment	\$149.49
Total Expenditures	\$978.55

<b>5,500 Party Spending Estimates</b>	
Lodging	\$1,291,950
Transportation	\$313,331
Food & Beverage	\$1,891,007
Retail Purchases	\$1,063,544
Recreation/Entertainment	\$822,177
Total Expenditures	\$5,382,008

Note: Calculations based upon KDA surveys, other tourism related surveys and prior studies.

Five thousand five hundred parties is approximately the number of out-of-state Passport parties completing the Kentucky Bourbon Trail® each of the last few years.

Average party size is assumed to be 2.49 people. Lodging estimate assumes 87% of parties use paid accommodations at \$90/night. Transportation estimate includes costs for gasoline and rental car fees (excluding taxes) for a portion of parties. Food & Beverage estimate based on Federal per diem rates for cities in Kentucky. Retail purchases estimate includes spending in distillery gift shops, plus other miscellaneous spending. Recreation/Entertainment estimate includes distillery tour admission fees, plus some extra spending.

We used our input-output model of the Kentucky economy to simulate the effect of this annual number of Passport parties on the Kentucky economy. The results indicate that this number of Kentucky Bourbon Trail® Passport completing parties, which has been typical of the last two years, spends enough to support 104 jobs with a combined payroll of nearly \$2.1 million, and increase economic activity by \$7.5 million dollars.

**Economic Impact in Kentucky of 5,500 Out-of-State Passport  
Holders Completing the Kentucky Bourbon Trail®**

<b>Impact Type</b>	<b>Employment</b>	<b>Output</b>	<b>Payroll</b>
Direct Effect	79	\$4,526,703	\$1,361,988
Indirect Effect	11	\$1,417,092	\$340,865
Induced Effect	13	\$1,574,468	\$385,538
<b>Total Effect</b>	<b>104</b>	<b>\$7,518,263</b>	<b>\$2,088,391</b>

Source: Customized IMPLAN (IMPacts for PLANing), version 3.1, model of Kentucky, using 2012 economic data.

Note: Five thousand five hundred parties is approximately the number of out-of-state Passport parties completing the Kentucky Bourbon Trail® each of the last few years.

Indirect impact refers to business-to-business spin-off spending; Induced impact refers to household spending that is a result of increased earnings.

Using current tax rates (and effective tax rates based on historical collections of sales and income taxes for tax collections resulting from new payroll) we estimate that the fiscal impact on state and local governments is around \$615,000, with most of that total going to state government via sales and lodging taxes. Two-thirds of the fiscal impact is derived directly from the spending of Kentucky Bourbon Trail® tourists, with the remainder resulting from the added income of Kentucky residents.

**Estimated Annual Local and State Tax Revenues  
Resulting from 5,500 Out-of-State Passport Holders Completing  
the Kentucky Bourbon Trail®**

	<b>Taxes Paid by Bourbon Tourists</b>			<b>Totals</b>
	<b>Transient Room Taxes</b>	<b>Retail Sales Taxes</b>	<b>Gasoline Taxes</b>	
<b>Local Governments</b>	\$62,071			\$62,071
<b>State of Kentucky</b>	\$97,025	\$231,544	\$19,635	\$348,204
<b>Totals</b>	\$159,097	\$231,544	\$19,635	\$410,275
<b>Taxes Paid by Kentucky Residents</b>				
	<b>Local</b>			<b>Totals</b>
	<b>Income/ Occupational Taxes</b>	<b>State Income Taxes</b>	<b>State Sales Taxes</b>	
<b>Local Governments</b>	\$24,209			\$24,209
<b>State of Kentucky</b>		\$96,833	\$84,140	\$180,974
<b>Totals</b>	\$24,209	\$96,833	\$84,140	\$205,182

Note: The tax figures paid by MSA residents include the indirect and induced economic impacts of the tourism industry in the metro area.

Of course, Kentucky Bourbon Trail® Passport holders who complete their passports account for just 20 to 25 percent of all distillery tour attendance. That leaves the potential impact from the vast majority of trail participants unaccounted for. Some are fellow Kentuckians and others just visiting a distillery or two as a secondary part of another trip, but for others the Kentucky Bourbon Trail® is one of their primary reasons for visiting the region. Unfortunately, we do not currently have good information on the motivations, characteristics, or spending patterns of non-Passport tour participants. We hope to be able to have such information in the future so we can assess the full impact of the Kentucky Bourbon Trail®.

### **Other tourism-related activity**

The Kentucky Bourbon Trail® is a daily attraction; other multi-day events also bring tourism dollars into Kentucky, though we do not have sufficient research available to quantify the economic impacts.

The Kentucky Bourbon Festival, in Bardstown, has events throughout the week in the middle of September. This one-of-a-kind festival combines Bourbon themed events with a golf tournament, culinary classes, a balloon glow, an arts and crafts festival, and a music festival. The Kentucky Bourbon Festival has been named one of the top events by Southeast Tourism Society, The

American Bus Association, Business First and The Kentucky Travel Industry Association. Last year's Festival attracted 52,000 attendees, hailing from 46 states and 15 foreign countries.

The Bourbon Chase is a 200-mile race in the fall, beginning in Clermont and ending in Lexington. In its sixth year, it has grown from 1,900 participants in the first race to 4,000 participants during 2013, and approximately 5,000 this year. The event currently raises over \$150,000 annually for three charities. They are Susan G. Komen Lexington (assists low-income women and men battling against breast cancer), Court Appointed Special Advocates (CASA) for Children (a network of 933 community-based programs that recruit, train and support citizen-volunteers to advocate for the best interests of abused and neglected children in courtrooms and communities), and the Leukemia & Lymphoma Society (funds blood cancer research, education, and patient services). The event attracts a highly educated (92% have at least a Bachelor's degree) and affluent (65% earn over \$100,000 annually) group of runners who come from 44 states and 4 foreign countries to compete in this unique relay race.

The Kentucky Bourbon Affair™ fantasy camp, put on by the distilleries themselves, offers rare and behind-the-scenes activities, along with elegant evening celebrations pairing the world's best Bourbon with Louisville's renowned culinary movement. The 2014 Affair featured private distillery tours, personal barrel selections, gourmet delights with renowned Bluegrass chefs, rooftop tastings, custom cocktail parties, receptions at the homes of famed Bourbon Barons and even skeet shooting with a legendary Master Distiller. Nearly 2,000 tickets were sold to 48 events with visitors from 26 states and three countries.

The Bourbon Classic is an annual weekend-long event that delivers education and entertainment exclusively focused on the Bourbon enthusiast, exploring the "best of the best" in the world of Bourbon—from the craftsmanship of distilling to the pure enjoyment of the spirit in its many forms. Bourbon Classic 2014 attracted 1,000 Bourbon connoisseurs from across the country to Louisville. Neither the Bourbon Classic nor the Kentucky Bourbon Affair™ is an inexpensive event to attend. Their attendees generally have ample disposable income available to spend in area hotels, restaurants, bars, and shops.

In addition to this sample of stand-alone events, Bourbon and the Bourbon experience have become significant parts of numerous events throughout the region. A prime example is the Bourbon Lodge at the annual Forecastle Festival of music, art and activism. The lodge offered Bourbon education, a unique culinary experience, and other amenities to a young and hip crowd at Kentucky's premier outdoor music festival, located at Louisville's Waterfront Park.

The worldwide popularity of Bourbon and the growth of distillery tourism have other sorts of spin-offs as well. Transportation companies, such as Mint Julep Tours and R&R Limousine Service, offer a variety of Bourbon related tour packages and Bourbon tourism is a growing part of their business. The Urban Bourbon Trail® of bars and restaurants that all serve up Bourbon-inspired dining, offer Bourbon flights, special Bourbon cocktails and have at least 50 different Bourbon labels on the bar

with trained staff that can explain the nuances and tasting notes in the varied offerings now includes 34 destinations.

In December of 2013, Louisville Mayor Greg Fischer created the Bourbon and Local Food Working Group (consisting of business executives, chefs, distillers, and tourism leaders) with a mission of harnessing the city's Bourbon and food cultures together, enhancing them, and ultimately using the fused culture as an economic development tool.

All of this activity stems from the growth in the distilling industry and the associated tourism that we have documented in this report.