# Kentucky Bourbon Cluster: Cluster Competitiveness Project

HKS PED-329, HBS 1260, Fall 2015

May 8, 2015

Johnny Bowman, Jillian McLaughlin

Lyell Sakaue, & Chris Sommerfeld

| SECTION | Page Number |
| --- | --- |
| **1.Executive Summary** | **2** |
| **2.U.S. Economy Overview** | **5** |
| **3.Kentucky Overview: The State's Competitive Positions** | **8** |
| *3.1 Population and Labor* | **8** |
| *3.2 State Clusters* | **8** |
| *3.3 Social and Political Institutions* | **9** |
| *3.4 The Kentucky Diamond* | **11** |
| *3.5 Economic Development Policy in Kentucky* | **11** |
| **4. The Global Distillation Industry** | **14** |
| *4.1 Industry Participants* | **14** |
| *4.2 Industry Overview* | **15** |
| *4.3 The State of Kentucky Bourbon* | **16** |
| **5. Kentucky Bourbon Cluster** | **17** |
| *5.1 History of Kentucky Bourbon* | **17** |
| *5.2 Kentucky Bourbon Cluster Map* | **20** |
| *5.3 Kentucky Bourbon Highlights and Performance Analysis* | **23** |
| *5.4 The Cluster Diamond* | **24** |
| *5.5 Review and Assessment of Kentucky's Current Strategy* | **25** |
| *5.6 Key Challenges and Opportunities for the Cluster* | **30** |

**1. Executive Summary**

The Kentucky bourbon cluster has experienced renewed growth in the past decade. Increased domestic demand spurred by pop culture trends and a growing global market have enhanced the profitability of the cluster. Kentucky bourbon and Tennessee whiskey exports account for 70 percent of the total value of U.S. spirits in 2014. Wages are increasing for cluster participants and capital investment from abroad has expanded the capacity of the cluster. Strong ties to tourism and related industries foster a harmonious and self-reinforcing cycle of economic growth.

Despite the cluster's success, bourbon distilleries face formidable challenges. Kentucky's business environment has features that enhance competitiveness—strong endowments, flexible labor laws, and low tax rates—the state struggles on measures of prosperity. Kentuckians experience higher than average unemployment and lower wages compared to the rest of the nation; its educational institutions also show a state falling behind.

In addition to the general business environment, the state legislature has enacted specific barriers that restrict the growth of the bourbon cluster. An influential anti-alcohol bloc in the legislature has resulted in relatively high excise taxes compared to other leading alcohol-producing states. Local demand is constrained by the number of dry counties (39) in Kentucky. Restrictions on the amount of bourbon tourists can buy also blunt demand. High licensing fees and other costs of entry effectively favor incumbents, choking off aspiring craft distillers, a growing share of total U.S. alcohol consumption. Other states are quickly leaving Kentucky behind as they reform laws to encourage craft distilleries to open. The U.S. and Kentucky must invest in cluster-specific strategies to foster the conditions for bourbon's continued success.

**Public Sector Recommendations:**

**The federal, state, and local governments should ease restrictions on distillers and lower taxes to increase competitiveness.** The federal excise tax on producers dampens U.S. domestic demand and makes spirits one of the most highly-taxed products in the U.S. By removing this tax, U.S. spirits, and Kentucky bourbon, can become more competitive. The state, too, should reduce consumption taxes on alcohol to the level set by other leading distillation states. Lowering the license to start a distillery can encourage a wave of new entrants as well. Although Kentucky's General Assembly recently reduced the licensing fee for craft distillers from $3,080 to $1,000, New York experienced a boom in craft distilleries after slashing the fee to $100.

**Restrictions on the purchase of alcohol should be repealed.** Kentucky has lower domestic demand for spirits than other U.S. states, due in large part to the number of dry counties. If local governments repeal these restrictions, new distilleries can open in their counties and consumers can freely exercise their preferences.

**U.S. free trade agreements should be negotiated to expand export markets.** Bourbon and other spirits are highly-reliant on export markets. The U.S. is currently negotiating the Trans-Pacific Partnership and Transatlantic Trade and Investment Partnership, which would provide additional avenues for American spirits.

The cluster, too, must exercise leadership to maintain and upgrade bourbon's competitiveness.

**Private Sector Recommendations:**

**Cluster participants should upgrade the knowledge of the cluster by designing an educational curriculum to address skill shortages and fill R& D gaps within the cluster.** The

University of Kentucky is launching a certification program in distillation, wine, and brewing studies, however, the curriculum is based on faculty interest, not an identified need by the industry. Other successful clusters, such as the California wine cluster, have fostered close collaboration between universities and industries to drive innovation. The Kentucky Distillers' Association should also convene and catalyze cluster-wide R&D efforts to supplement existing proprietary research.

**Regional banks should work with industry leaders to formulate specialized debt programs for small and mid-size craft distillers.** In addition to the regulatory barriers to new distilleries, financing can prevent competition. Bourbon distillation is a long, capital-intensive process. Distilleries must operate for several years before they can sell their first bottle of bourbon. The market should meet the need for specialized financing to help new distilleries compete with well-capitalized conglomerates.

**Small and medium-sized distilleries should form a cross-border institute for collaboration (IFC) with the Tennessee whiskey cluster to bulk purchase inputs and reduce the cost of goods sold.** Kentucky bourbon's cousin cluster, Tennessee whiskey, is just across the border, but little collaboration exists. Cross-border collaboration could lower the costs of key whiskey inputs since both clusters face similar challenges and have similar needs.

**Finally, the cluster should seek to capitalize on the secular cultural trends that are driving bourbon's popularity by diversifying its consumer base.** Alcohol trends can be highly volatile depending on an ever-evolving consumer taste. Whiskey producers, including bourbon, should try to expand their customer base in this period of unprecedented growth. Whiskey tends to be consumed at bars, not restaurants. Large distilleries should collaborate with chefs and food scientists to devise pairings to increase consumption.

## 2. U.S. Economy Overview

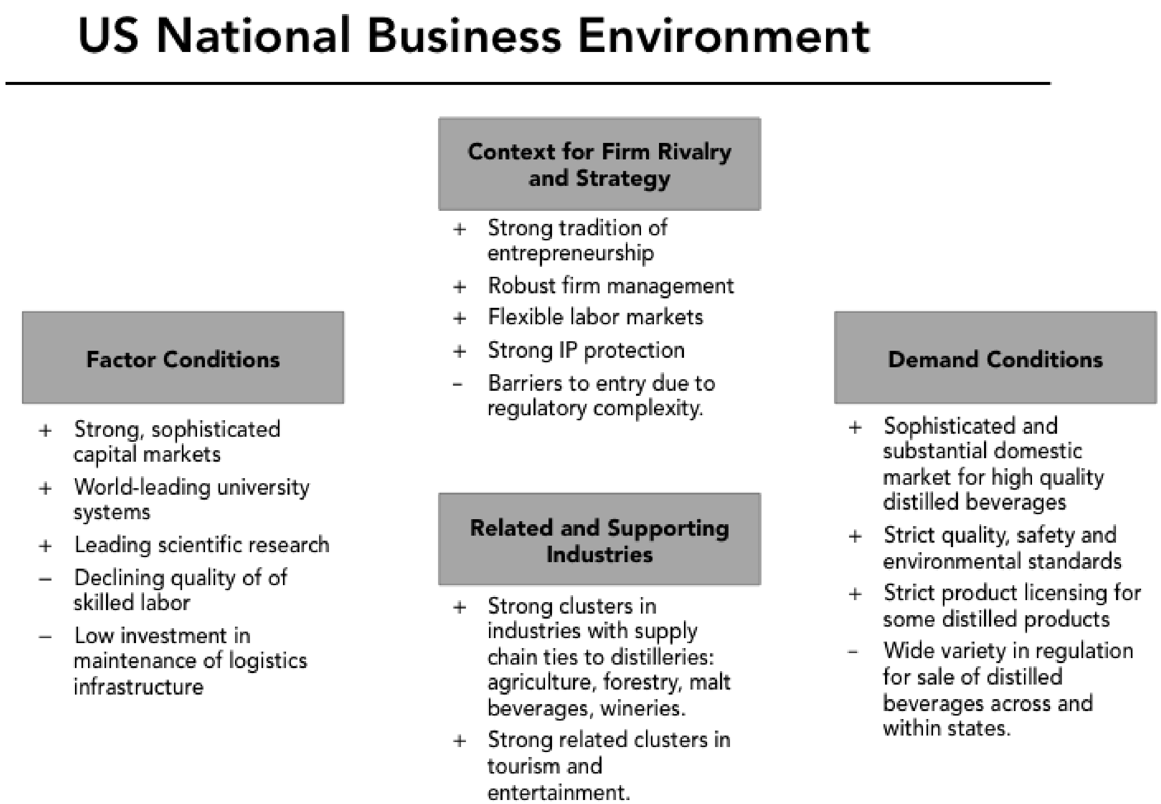



**Figure 1**

The United States faces a growing competitiveness challenge. In this context, competitiveness is defined as “the extent that firms operating in the U.S. are able to *compete successfully* in the global economy while maintaining or improving *wages and living standards* for the average American” (Porter and Rivkin, 2015). While the U.S. has seen growth in profits and a significantly higher gross domestic product (GDP) per capita than its peers in the Organization for Economic Cooperation and Development (OECD), there are signs that the economy is struggling to maintain and increase wages and prosperity for workers. Stagnant growth in employment figures, weak productivity growth, declining labor force participation rates, and increasing concentration of income in the hands of a fraction of the population indicate weakening U.S. competitiveness (Porter and Rivkin, 2015).

Endowments, macroeconomic, and microeconomic determinants of competitiveness play a role in recent trends. Advances in extraction technology have improved the productivity of key U.S. endowments, particularly shale oil and natural gas, which should improve competitiveness through easier access to resources that would otherwise need to be imported (Brown and Yucel, 2013). However, the U.S. has seen its macroeconomic competitiveness erode in the last decade, with poor performance on monetary and fiscal policy, as well as social and political institutions (ISC, 2015). Some of this can be attributed to an increasingly partisan Congress, which has made it difficult to craft coherent and sustainable fiscal policy. U.S. budget deficits are larger than the OECD average, despite underinvestment in core infrastructure initiatives and other key priorities.[1]

In terms of social institutions, the U.S. struggles to provide quality services in both education and health care relative to other advanced nations (Porter, 2015). The U.S. continues to perform well on measures of microeconomic competitiveness, with strong cluster development in key sectors like financial services and medical devices, as well as sophisticated company operations and strategy (Porter, 2014). In terms of factor conditions, the U.S. benefits from sophisticated capital markets and the world's leading system of universities and scientific research institutions but faces declining quality of infrastructure and an increasing shortage of skilled labor relative to peer nations (Porter, 2014). Non-farm labor productivity growth has been on a mostly downward trend since 1951 (Porter and Rivkin, 2015). Still, U.S. firms operate in a competitive national and global environment. The U.S. has strengths in its tradition of

[1] The Economist (2015). "The Economist Intelligence Unit," available at: https://www.eiu.com/.

entrepreneurship, robust intellectual property rights, fairly flexible labor markets and network of management training schools.

The distillation industry benefits from the larger competitive context. The U.S. has a large and sophisticated domestic demand for high quality distilled beverages and strict quality, safety and environmental standards, which are counteracted by the complexity of the regulations surrounding the distribution and sale of distilled beverages across all 50 states. Finally, the U.S. has strong related and supported industries from the perspective of the distilleries: agriculture, forestry, malt beverages, wineries, tourism and entertainment are all well-developed clusters.

Some of these clusters are among the largest in the U.S. economy – hospitality and tourism was the largest traded cluster by export volume in 2013 at $172 billion (ISC, 2013), with agricultural products and logistics also part of the top 10. For comparison, distillers are considered part of the broader processed food industry, which ranked 19$^{th}$ largest in export volume in 2013 at $30 billion. Within the processed food industry, the fastest growth is concentrated in two areas: dairy products and alcoholic beverages, driven in large part by increasing demand from emerging economies. A broader examination of the U.S. economy in Figure 2 reveals that many of the largest clusters rely on core strengths of the U.S. economy, such as financial services and medical devices, which boast the largest share of the world market.

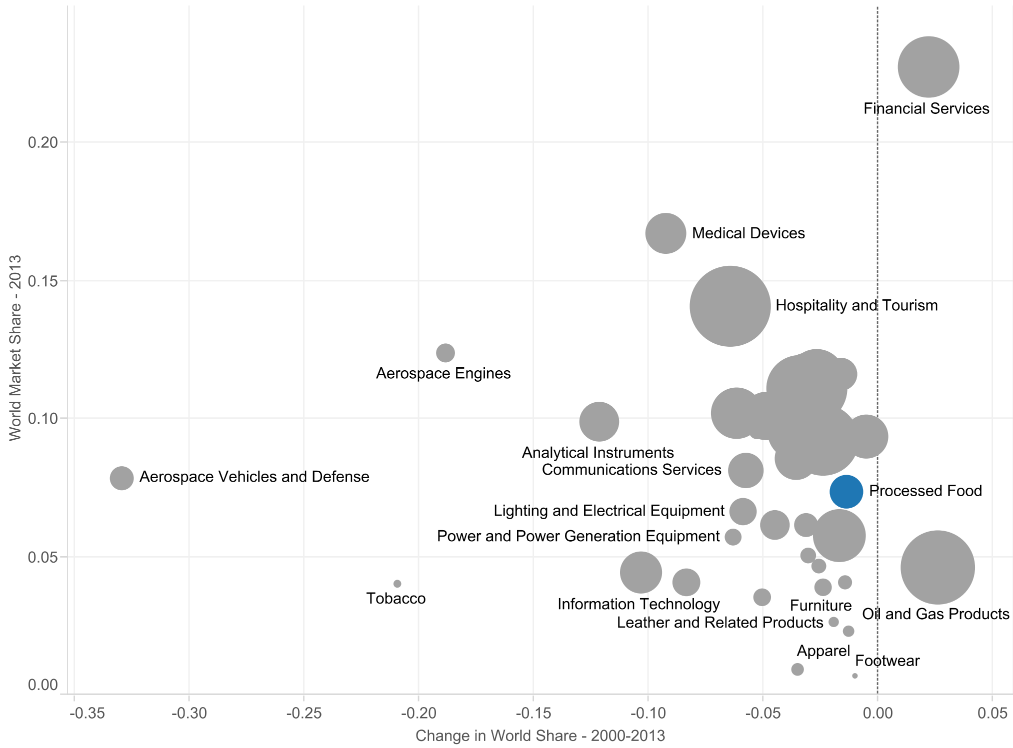



**Figure 2**

## 3. Kentucky Overview: The State's Competitive Positions

The Commonwealth of Kentucky was established in 1792 as the 15th state of the union, formed out of territory once claimed by Virginia.[2] Officially neutral in the Civil War, it has retained its reputation as a border state, marking the economic and cultural separation between northern and southern states. In addition to its central location, the state has access to two major navigable rivers, the Ohio and Mississippi, which help to offset the fact that the state is landlocked. The development of the interstate highway system gave Kentucky easy access to the entire eastern half of the country; today more than 65 percent of the U.S. population lives within a day's drive of the state.[3]

[2] Kentucky Department of Travel and Tourism (2015). "History of Kentucky," available at: http://www.kentuckytourism.com/explore/kyfacts/history.aspx.
[3] Cabinet for Economic Development (2015). "Kentucky Economic Development Guide," available at: http://siteselection.com/cc/kentucky/.

*3.1 Population and Labor*

Kentucky's population was 4.4 million people in 2014, making it the 26th largest in the country.[4] A substantial number of residents hold conservative social and religious beliefs – the population is 33 percent Evangelical Protestant and 23 percent Southern Baptist. Historically and at present, Kentucky has generally struggled on measures of prosperity, with some of the lowest wages and GDP per capita measures in the United States (ISC, 2015). The state has an unemployment rate of 8.27 percent and a poverty rate of 19.3 percent, placing the state 44th and 46th nationally in 2013.

*3.2 State Clusters*

While many factors contribute to Kentucky's substandard performance, three are particularly relevant: long-term trends in core industries, human capital investment and economic development policies. An examination of the overall composition of the Kentucky economy in Figure 3 shows the state accounts for nearly 18 percent of national employment in coal mining, reflecting the state's large reserves and historical dependence on this key industry. Alternative energy sources and a focus on emissions reduction have wounded the industry. Strong recent growth in the automotive, aerospace, and chemical industries, along with the existence of a strong logistics cluster, offset the losses in other clusters. The logistics cluster includes two national distribution hubs at airports located in Kentucky, with UPS and DHL both recognizing

[4] United States Census Bureau (2015). "State & Country Quickfacts," available at: http://quickfacts.census.gov/qfd/states/21000.html.

the strategic location and highway infrastructure present in the state.

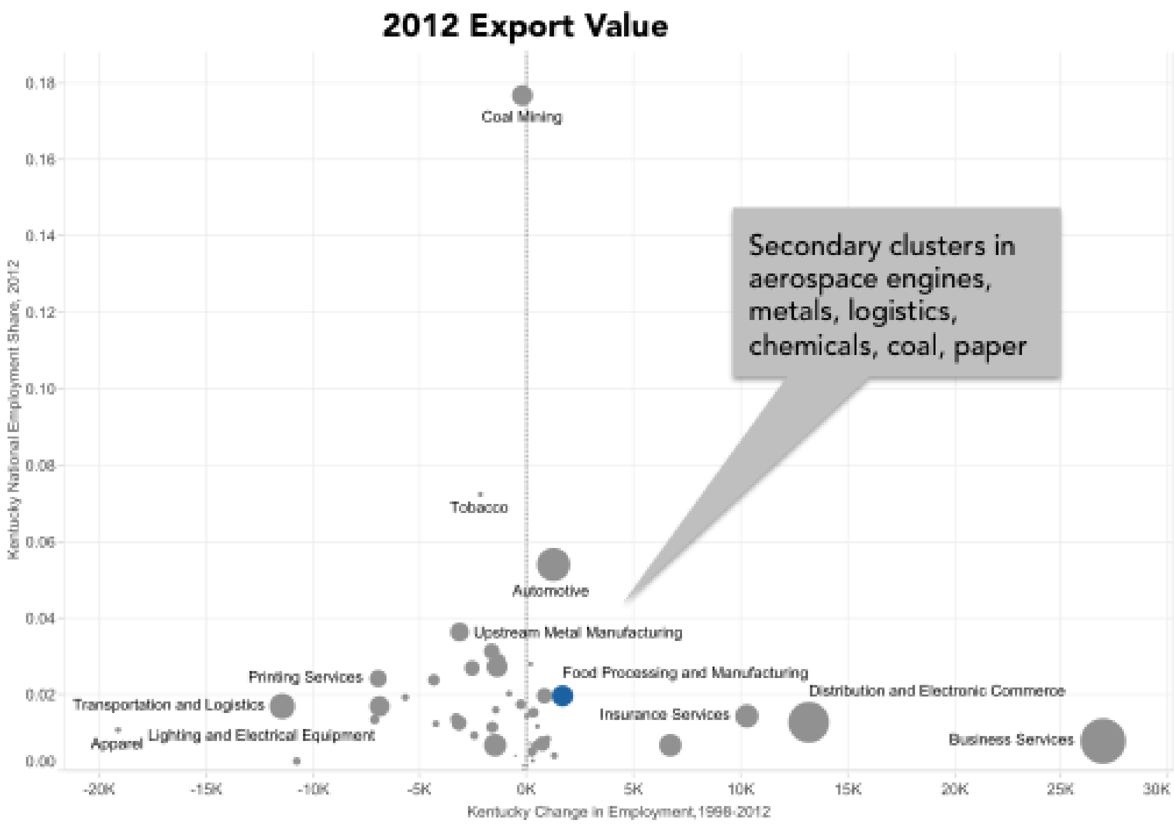



**Figure 3**

*3.3 Social and Political Institutions*

Kentucky has a mixed record establishing and maintaining effective social and political institutions. On the political side, the state has made strides to improve its fiscal position, and has recently received a favorable outlook from bond raters.[5] The state has taken steps to reform its pension and medical care liabilities, and has a relatively average tax burden as a percentage of GDP. However, significant challenges remain, including below-average funding for pension liabilities, a dependence on revenue from specialty taxes on cigarettes and coal production, and persistently low income levels. On the social side, the state has dramatically improved health

[5] Moody's Investors Service (2014). "Moody's revises Kentucky outlook to stable and affirms Aa2 issuer rating," available at: https://www.moodys.com/research/Moodys-revises-Kentucky-outlook-to-stable-and-affirms-Aa2-issuer--PR_300854.

insurance coverage after the passage of the Affordable Care Act, decreasing rates of the uninsured from 20 percent to 12 percent from 2013-2014.[6] The state still struggles on many measures of educational achievement, however. Less than half of high school juniors meeting college readiness standards on the ACT in either reading or math.[7]

*3.4 The Kentucky Diamond*

Analyzing Kentucky's business environment using the diamond model shows strong factor conditions from the logistics cluster, but deferred maintenance for physical infrastructure has led to an alarming deterioration in road conditions.[8] In addition to the challenges in K-12 education, the state suffers from low investment in higher education relative to peer states and does not have strong private institutions of higher education –hampering research and development as well as efforts to attract high-wage, high-skill industries to the state. The state performs reasonably well on the context for firm strategy and rivalry, with strong entrepreneurship, fairly flexible labor laws and average tax rates. Finally, demand conditions are harmed by low-income levels and wildly uneven regulations on the sale of alcohol, but also benefit from a long history and proud tradition of sophisticated demand for bourbon in the state (ISC, 2015; Kornstein, 2014).

*3.5 Economic Development Policy in Kentucky*

Kentucky's state economic policy is formulated and executed by the Cabinet for Economic Development, the state agency charged with implementing the Governor's competitiveness and business attraction and retention goals. The Cabinet is governed by the

[6] Governor Steve Beshear (2015). "State of the Commonwealth," available at: http://governor.ky.gov/Speeches/20150107_SOTC.pdf.
[7] Kentucky Department of Education (2012). "ACT Grade 11 Kentucky Trends," available at: http://education.ky.gov/AA/Reports/Documents/ACT_11_Trends_201112.pdf.
[8] American Society of Civil Engineers (2013). "2013 Report Card for America's Infrastructure," available at: http://www.infrastructurereportcard.org/kentucky/kentucky-overview/.

Kentucky Economic Development Partnership, a body composed of 13 members, eight of whom are from the private sector and four Cabinet secretaries (Economic Development; Finance and Administration; Environmental and Public Protection; Tourism, Arts & Heritage). The Governor chairs the Partnership.[9]

The current Governor, Steve Beshear (D), has been in office since 2007. Under his leadership, the Cabinet for Economic Development pursued a number of strategic initiatives to increase Kentucky's competitiveness (see Figure 4). The majority of the initiatives target small businesses, exports, and attracting capital. According to the Kentucky Export Initiative, the state focuses on the automotive industry, food and beverage, logistics, and healthcare to drive foreign exports.[10] In recent months, Governor Beshear has led trade delegations to Canada, Asia, and Europe.[11]

**Figure 4**

| **Selected Strategic Economic Development Initiatives (2007-2015)** | |
|---|---|
| Kentucky: Here We Grow Series (2013)[12] | The State hosted a series of business seminars across Kentucky educate businesses on tax incentives, export assistance, government procurement, and loans. |

[9] Cabinet for Economic Development (2015). "Kentucky Economic Development Partnership Board," available at: http://thinkkentucky.com/KYEDC/PartnershipBoard.aspx.
[10] Kentucky Export Initiative (2015). "Priority Sectors," available at: http://www.kyexports.com/prioritySectors.aspx.
[11] Analysis of press releases from the Cabinet for Economic Development. (Cabinet for Economic Development (2015). "Cabinet for Economic Development Archived Press Releases," available at: https://www.thinkkentucky.com/newsarchive/newsarchive.aspx.)
[12]Cabinet for Economic Development (2013). "Press Release: Kentucky: Here We Grow Business Tour Kicks off in February," available at: http://www.thinkkentucky.com/newsroom/newspage.aspx?x=01302013_herewegrow.html.

| | |
|---|---|
| Office of Entrepreneurship (2013)[13] | The Office of Entrepreneurship is housed within the Cabinet for Economic Development. The Office's goal is to provide technical assistance to small businesses and stimulate an entrepreneurial climate in the state |
| Kentucky Angel Investors Network (2013)[14] | The Angel Investors Network is a virtual platform to connect start-ups and accredited investors |
| Small Business Credit Initiative (2012)[15] | The SBCI provides private lenders with various loan guarantees to encourage the extension of credit to small businesses that fall outside the margin of creditworthiness |
| Kentucky Export Initiative (2010)[16] | The Kentucky Export Initiative (KEI) educates business leaders on trade, matches state businesses with international partners, and offers a grant through the Small Business Administration to support export growth |

Kentucky's economic development policy relies heavily on tax incentives to lure businesses and capital investment to the Bluegrass State. Kentucky began extending tax credits to businesses in 1984 to encourage businesses to train workers (Anderson Economic Group, 2012). Now, fourteen different tax incentives are available to businesses within the state, ranging from credits that subsidize recycling equipment to those that encourage capital investment.[17] The Anderson Economic Group estimated the effect of these subsidies on the state's employment and economic output, concluding that the incentives cost an average of $3,300 per job annually between 2001 and 2010 (Anderson Economic Group, 2012).

[13] Cabinet for Economic Development (2013)."Press Release: Gov. Beshear Announces Creation of Office of Entrepreneurship within Cabinet for Economic Development," available at: https://www.thinkkentucky.com/newsroom/NewsPage.aspx?x=07222013_OEC.html.
[14] Lexington Herald-Leader (2013). "Gov. Steve Beshear launches angel investing network," available at: http://www.kentucky.com/2013/11/23/2948897_beshear-launches-angel-investors.html?rh=1
[15] Cabinet for Economic Development (2015). "Small Business Credit Initiative Fact Sheet," available at: http://thinkkentucky.com/kyedc/pdfs/KSBCIFactSheet.pdf.
[16]Kentucky Export Initiative (2015). "Kentucky Export Initiative: Home," available at: http://www.kyexports.com/.
[17] Cabinet for Economic Development (2015). "Kentucky Business Incentives," available at: http://thinkkentucky.com/kyedc/pdfs/kybusinc.pdf.

The state has also introduced initiatives aimed at high-tech industries. Since 2006, Kentucky has awarded matching grants to businesses through the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) program. [18]

**4. The Global Distillation Industry**

*4.1 Industry Participants*

The global spirits industry is valued at approximately $300 billion.[19] Whiskey (which includes bourbon) is just one segment in this category. The spirits industry consists of all types of spirits segments, including vodka, brandy, rum, liqueurs, gin, and tequila. Vodka is the most consumed spirit globally, with the combined whiskey category (which includes bourbon, scotch and others) close behind. Vodka and whiskey compete for the most consumed spirit in the U.S. as well. U.S. whiskey and vodka sales in 2014 were each approximately $17 billion.[20]

The global spirits market is rather fragmented globally with the top five distributers (Diageo, United Spirits Limited, Pernod Ricard, Suntory/Beam, and Bacardi) consisting of just 7% of global production. The U.S. market is more consolidated, particularly among whiskey producers. Nearly half of whiskey purchased in the U.S. comes from seven major brands (see list below).

Largest brands by 2014 annual U.S. sales[21]

- Jack Daniel's (Tennessee whiskey), $204 million
- Crown Royal (Canadian whiskey), $173 million

[18] Cabinet for Economic Development (2015). "Press Release: Kentucky Awards Funding to Six High-Tech Small Businesses," available at: http://www.thinkkentucky.com/newsroom/NewsPage.aspx?x=04132015_high_tech_awards.html.
[19] MarketLine (2014). "Spirits: Global Industry Almanac," available at: http://store.marketline.com/Product/spirits_global_industry_almanac?productid=ML00016-299.
[20] International Wine & Spirits Research (2014). "Forecast Report 2014-2019 Global Review," available at: http://www.theiwsr.com/iwsr_forecast_reports.html.
[21] Business Journal (2014). "Top 20 best selling whiskey brands of 2014," available at: http://www.bizjournals.com/dayton/gallery/58551?s=image_gallery&img_no=20.

- Jim Beam (bourbon), $117 million
- Fireball (specialty whiskey), $86 million
- Seagram's 7 (standard American whiskey), $67 million
- Jameson (Irish whiskey), $66 million
- Johnnie Walker (Scotch whisky), $59 million

*4.2 Industry Overview*

All distilled spirits are made from fermenting a sugary organic and then distilling and aging it to reach a certain proof. The specifics of the distilling and aging process determine the kind of spirit produced. Whiskey is specifically made from fermented grain, as is gin. Rum starts with sugar cane and Tequila starts with agave. While these broad categories are useful in understanding the market, significant variation exists among subcategories of each spirit.

In addition to "standard whiskey", there are several key sub-categories: bourbon, Tennessee whiskey, Scotch whisky, Irish whiskey, Canadian whiskey, and specialty whiskey. The chart below details the specifics of each.

| | |
|---|---|
| **Bourbon** | • May only be produced in the U.S., but can be made in any state<br>• Any combination of cereal grain, as long as there is at least 51% corn<br>• Must be filled into <u>new</u> charred oak casks for maturation<br>• Those matured for more than 2 years can label 'Straight Bourbon |
| **Tennessee Whiskey** | • Identical to Bourbon, but must also:<br>• Be made in Tennessee<br>• Go through a unique charcoal-filtering process |
| **Scotch Whisky** | • Must be distilled and matured entirely in Scotland<br>• Must be in casks for at least three years before it can legally be called whisky |
| **Irish Whiskey** | • Must be distilled and matured entirely in Ireland<br>• Must be in casks for at least three years before it can legally be called whiskey |
| **Canadian Whiskey** | • Must be distilled and matured entirely in Canada<br>• Must be in casks for at least three years before it can legally be called |

| | |
|---|---|
| | whiskey |
| **Rye** | • Any whiskey labeled 'Rye Whiskey' must be made from at least 51% rye grain |

*4.3 The State of Kentucky Bourbon*

Kentucky distilleries produce 95 percent of all American bourbon.[22] According to state figures, bourbon distilling contributes nearly $2 billion in yearly gross state product. Kentucky is the second biggest spirits exporter in the U.S. behind Tennessee. The vast majority of this production comes from a handful of large distillers. While 31 companies currently have Kentucky distiller's licenses, 14 of these produce less than 50,000 gallons per year. A handful of large distillers produce the vast majority of Kentucky bourbon. See the table below.

| **Distiller** | **Year** | **Major Labels** | **Barrels in Inventory** | **# of KY Sites** |
|---|---|---|---|---|
| Buffalo Trace | 1787 | Buffalo Trace, Eagle Rare, Blanton's, Pappy Van Winkle | 300,000 | 3 |
| Four Roses | 1888 | Four Roses Yellow Label Bourbon, Four Roses Single-Barrel Bourbon | 200,000 | 2 |
| Heaven Hill | 1934 | Evan Williams, Elijah Craig, Old Fitzgerald, Larceny | 1 million | 3 |
| Jim Beam | 1700s | Jim Beam Bourbon, Maker's Mark Bourbon, Knob Creek Bourbon | Not disclosed | 2+ |
| Town Branch | 2008 | Town Branch Bourbon | 1,350 | 1 |

[22] Lexington Herald-Leader (2013). "Bourbon: Details about the major distilleries," available at: http://www.kentucky.com/2013/06/06/2668854/bourbon-details-about-the-major.html.

| | | | | |
|---|---|---|---|---|
| Wild Turkey | 1850 | Wild Turkey 101, Wild Turkey 81, Russell's Reserve | Not disclosed | 3 |
| Brown-Forman / Woodford | 1870 | Woodford Reserve | Not disclosed | 2+ |

Across all spirit categories (including bourbon as well as vodka, cordials, and other types of whiskey), Kentucky exported $383 million of distilled spirits in 2013—21 percent of the U.S. total. Bourbon is the overwhelming contributor to these exports and of total U.S. exports. Combined U.S. bourbon and Tennessee whiskey exports comprised 70% of the value of total U.S. distilled spirits exports in 2014 (see Figure 5).

Figure 5

## 5. Kentucky Bourbon Cluster

### *5.1 History of Kentucky Bourbon*

Historians agree that the origins of Kentucky bourbon are shrouded in mystery. Some argue that bourbon's origins began with Elijah Craig, a Baptist minister, but historical evidence is contradictory. Regardless of the specific origins, the consensus is that distillers began producing whiskey and bourbon in the 1800s and the term "bourbon" was first used in a newspaper in 1821. Importing the ingredients to make rum and gin was expensive and early settlers in Pennsylvania and Kentucky relied on American crops to produce spirits, particularly whiskey which could be made from grains (Veach, 2013).

Kentucky's natural endowments offered easy access to ingredients necessary to produce bourbon. Large reservoirs of limestone-filtered water gave Kentucky bourbon a pure taste. The climate, too, naturally favored bourbon distillation. As bourbon aged in charred oak barrels, the hot summers built up pressure, pushing bourbon into the wood while the cold winters pulled the liquid and caramelized sugars from the wood back out of the barrel (Veach, 2013). The state also boasts fertile farmland. Contemporary bourbon distillers source 40 percent of corn within the state (Kornstein, 2014).

In addition to Kentucky's natural endowments, the U.S.'s purchase of Louisiana from France in 1803 positioned Kentucky close to a sophisticated market of discerning French settlers. Kentucky's signature flatboats traveled down the Ohio River to serve customers in New Orleans. The drink was so popular among French expatriates that some historians believe it got its name from its ubiquity on "Bourbon Street" in New Orleans. Bourbon undeniably owes much to the French distillation process and a demanding local customer (Veach, 2013).

Distilleries benefited significantly from the formation of the Kentucky Distillers' Association (KDA) in 1880.[23] Distillers faced early challenges from rectifiers, who produced imitation bourbon in a fraction of the time it took to age bourbon. The KDA lobbied for legislation that protected the brand from imitators and successful convinced lawmakers to pass

[23] Kentucky Distillers' Association (2015). "Our History," available at: http://kybourbon.com/about/about_us_history/.

bottled-in-bond legislation to distinguish aged whiskey from their cheap imitators. Over and over again, the KDA would reprise its role as the defender and promoter of the bourbon brand (Veach, 2013).

Prohibition crippled the industry, although whiskey could still be sold for medicinal purposes which protected a few producers. The end of prohibition created a wave of consolidation of brands that had bided their time until the law was repealed. The market was flooded with spirits and bigger, more competitive distilleries emerged. In the 1950s, however, bourbon became one of the dominant American spirits. The Cold War scattered U.S. troops across the globe and they brought bourbon with them, introducing the drink to international markets such as South Korea, Japan, Germany, and Italy. In 1964, Congress declared bourbon as a "distinctive product of the United States", reserving the bourbon appellation for spirits made in the U.S. (Veach, 2013).

Bourbon's enormous success in the 1950s and early 1960s could not foreshadow the precipitous drop in demand in the late 1960s. Domestic demand fell among a young generation of Americans who associated whiskey with their parents. Instead, they turned to beer, wine, vodka, and tequila. Many smaller distilleries closed. In the 1990s, bourbon distilleries turned to high-quality small batches and aggressively marketed domestically and abroad. The "Bourbon Tourism" industry began, as waves of Japanese tourists came to Kentucky Bourbon Festival and other cities launched "WhiskeyFests." In 1999, the KDA created the Kentucky Bourbon Trail, a popular tour of member distilleries (Veach, 2013). By 2015, demand for bourbon reached sky-high levels, returning the industry to its previous glory days.[24]

[24] Noah Adams (2014). "As Bourbon Booms, Demand for Barrels is Overflowing," *National Public Radio*, available at: http://www.npr.org/blogs/thesalt/2014/12/29/373787773/as-bourbon-booms-demand-for-barrels-is-overflowing.

*5.2 Kentucky Bourbon Cluster Map*

The Kentucky Bourbon cluster map (see Figure 6) can be organized into suppliers of inputs and production equipment, distributors, research and educational institutions, consumer education, and institutes for collaboration (IFCs). Many of the key input to bourbon can be sourced locally, as mentioned above. Distilleries buy grain, flour, and malt from farmers, use distillation equipment purchased from local manufacturers to produce bourbon, and source white American oak barrels for aging (Kornstein, 2014).

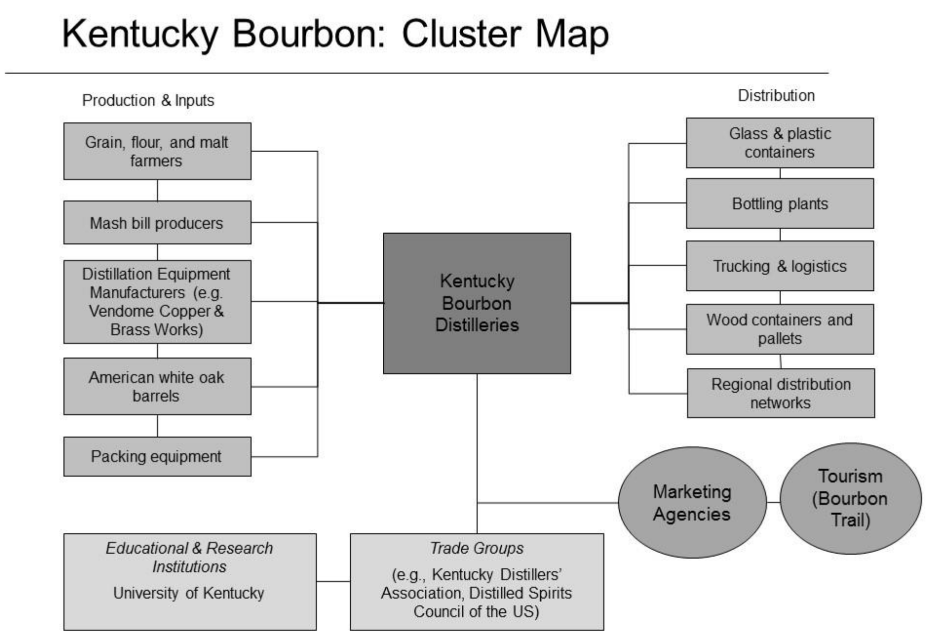



**Figure 6**

Distributors are critical to the bourbon industry given its reliance on exports. Wood containers and pallets, trucking and logistics (enabled by the state's highway network), and regional distribution networks enable the distribution of bourbon across the country and the world. Glass bottles are imported from other states, although increasingly, bottling is occurring in the export destination as bourbon increases it share of the global market (Kornstein, 2014).[25]

Marketing agencies, and particularly the tourism industry, are tremendously important to the continued dominance and growth of bourbon and its association with Kentucky. Place-based marketing through tourism, especially the Bourbon Trail, cements the link between Kentucky producers and bourbon. Major firms rely primarily on national advertising agencies to establish their digital presence and global outreach. Jim Beam, for example, selected San Francisco-based ad agency Mekanism to handle its digital branding.[26] Brown-Furman, the makers of Woodford Reserve, uses a lead agency based in Minneapolis.[27] Some local actors play a role in marketing, including the *Bourbon Review*, a Lexington-based lifestyle magazine devoted to the beverage which reaches 230,000 people in 35 countries and all 50 states.[28]

In contrast to other dominant beverage clusters, such as the California wine cluster, Kentucky's distillation industry has not historically been linked to its educational institutions. Recently, however, the University of Kentucky College of Agriculture began offering a certification in distillation, wine, and brewing studies. The curriculum includes courses on spirit chemistry and distillation science. The certification program was driven by the university, but the KDA, breweries, and wineries are actively consulting on the curriculum. The University is explicitly mimicking viticulture programs at the University of California—Davis. Eastern Kentucky University may also start a fermentation certificate program.[29]

[25] Distilled Spirits Council (2015). "2014 Industry Review," available at: http://www.discus.org/assets/1/7/Distilled_Spirits_Industry_Briefing_Feb_3_2015_Final2.pdf.
[26] Maureen Morrison (2014). "Mekanism Named Digital Ad Agency for Jim Beam." *Advertising Age*, available at: http://adage.com/article/agency-news/mekanism-named-digital-agency-jim-beam/294596/.
[27] E.J. Schultz (2014). "Does Woodford Reserve's Bourbon Ad Liberate or Discriminate?" *Advertising Age*, available at: http://adage.com/article/see-the-spot/woodford-reserve-s-bourbon-ad-liberate-discriminate/292648/
[28] The Bourbon Review (2015). "About," available at: http://gobourbon.com/about/
[29] Author Interview with Kristin Meadors, Director of Governmental and Regulatory Affairs for the Kentucky Distillers' Association (April 8, 2015).

The certification program offered at the University of Kentucky may professionalize the industry, but the Distilled Spirits Epicenter, a distilling center in Louisville, offers hands-on practical application to aspiring craft distillers. Dubbed the "Ivy League of Spirits," the Distilled Spirits Epicenter teaches students the art of distillation methods, hosts workshops on marketing and distribution, and provides legal advice and expertise on regulation and taxation, among other subjects. The Epicenter's faculty is comprised of members of industry (Distilled Spirits Epicenter, 2015).

The KDA and the Distilled Spirits' Council (DISCUS) are the two most important IFCs for the cluster's development. The KDA serves as a lobbyist for the industry, its chief marketer, and a sponsor of consumer education efforts. Large distilleries represent the majority of KDA's members, but the Association has nonetheless been active in promoting reform to remove barriers to entry for craft distillers. The KDA documents the economic impact of bourbon and advocating for the repeal of laws and regulations that hold back the industry. Recently, the KDA succeeded in passing a number of bills to lower costs for distilleries in Kentucky:

- Senate Bill 83 (2014): Lowered the distiller license fee from $3,090 to $1,000 for producers of fewer than 50,000 gallons per year
- House Bill 445 (2014): Offset the tax on unsold barrels by offering a corporate income tax credit against the tax

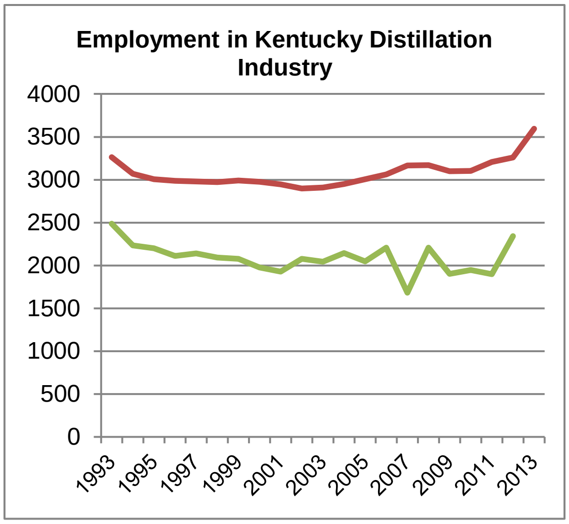
The KDA continues to lobby for rules that would loosen restrictions on new distilleries as a way to encourage craft distilleries to open in the state. The DISCUS also plays an important role for the bourbon industry, although they represent all American spirits. DISCUS lobbies for greater market access for American spirits' exports, fewer regulations within the U.S. on the transportation and purchase of alcoholic beverages, and encourages responsible alcohol consumption.[30]

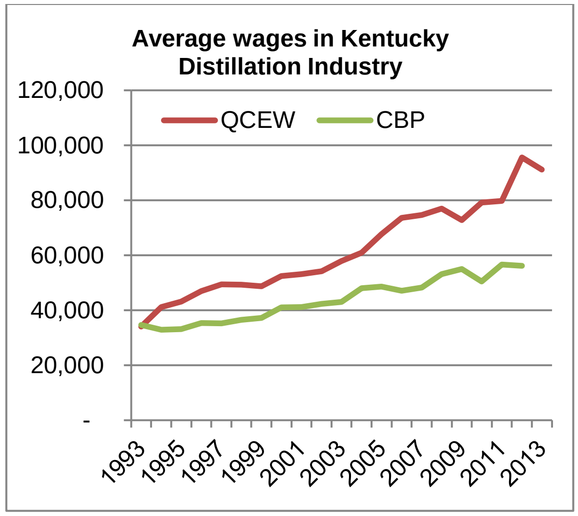
Kentucky's Bourbon Trail is the most visible example of the KDA's success linking bourbon to Kentucky producers. Hundreds of thousands of tourists completed the Kentucky Bourbon Trail last year. The KDA also sponsors the Filson Bourbon Academy, a new whiskey tasting and consumer education workshop in Louisville. These two projects contribute to a sophisticated and demanding customer palate and should enhance the industry's competitiveness.

### *5.3 Kentucky Bourbon Highlights and Performance Analysis*

Kentucky bourbon, along with its cousin Tennessee whiskey, has seen business and competitiveness soar in the last fifteen years, with a marked uptick since 2009. Exports are at an all-time high, with the last five years seeing an 11.9% CAGR.[31] Not only is the value of the cluster growing, but the growth also extends to employment and wages, key indicators of prosperity. The Bureau of Labor Statistics and the U.S. Census Bureau use slightly different methodologies, but the numbers show upward trends since 2009 in the cluster.[32]

[30] Distilled Spirits Council, (2015). "About," available at: http://www.discus.org/about/.
[31] Long-term bourbon export data is reported in aggregate with Tennessee Whiskey (Distilled Spirits Council, (2014). "2013 Industry Review," available at: http://www.discus.org/assets/1/7/Distilled_Spirits_Industry_Briefing_Feb_4_2014.pdf.
[32] The Quarterly Census of Employment and Wages (QCEW) from the U.S. Bureau of Labor Statistics and the County Business Patterns (CBP) by the U.S. Census Bureau use differing methodologies and different master lists of business establishments. Most notably, QCEW data includes some corporate headquarters activity, while CBP data does not (Kornstein, 2014).

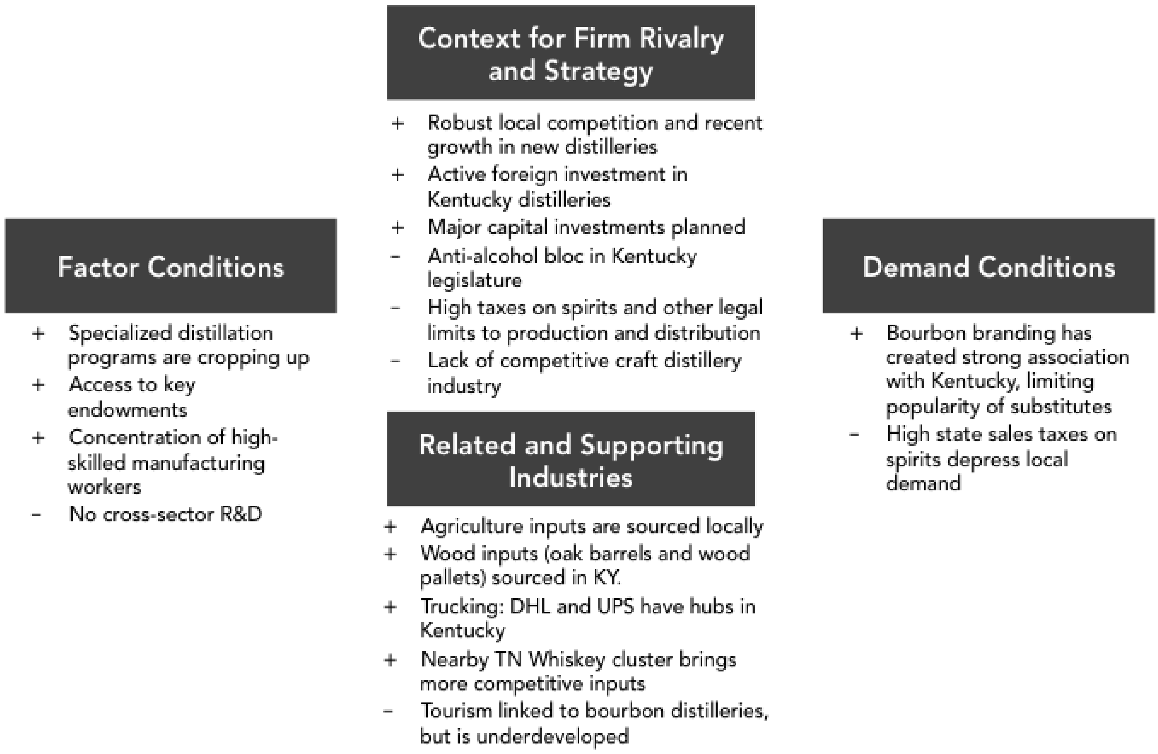



*5.4 The Cluster Diamond*

The cluster's strength can be attributed to favorable factor conditions, strong linkages among related and supporting industries, a context that encourages productive firm rivalry and strategy, and promising demand conditions. In order to continue the cluster's impressive growth, however, policymakers and business leaders should focus on two points of the diamond that have weaknesses: local rivalry and strategy and demand conditions (see Figure 7).

**Figure 7**




*5.5 Review and Assessment of Kentucky's Current Strategy*

Kentucky's lack of craft distilleries is cause for concern. Craft distilleries took off in 2011 after state-based barriers to entry were loosened in Washington, Colorado, and New York. Operating license fees were lowered for small producers and bans on on-site tastings and sales were reversed. Consequently, the number of U.S. distilleries with less than 20 employees jumped from 101 in 2010 to 199 by 2012. As other states added craft distilleries, the number of small producers in Kentucky stayed flat at four.[33] Kentucky accounts for one-third of all distilleries that employ twenty or more people, but just 2 percent of all distilleries that employ less than twenty people, down from 10 percent in 2006 (Kornstein, 2014). This trend, combined with a

[33] David Serchuk (2015). "KY spirits have record export year as bourbon continues to rise," *Insider Louisville*, available at: http://insiderlouisville.com/business/ky-spirits-record-export-year-bourbon-rise/

lack of coordinated cluster-wide R&D efforts, makes the cluster vulnerable to threats from new and innovative distilleries based in other states.

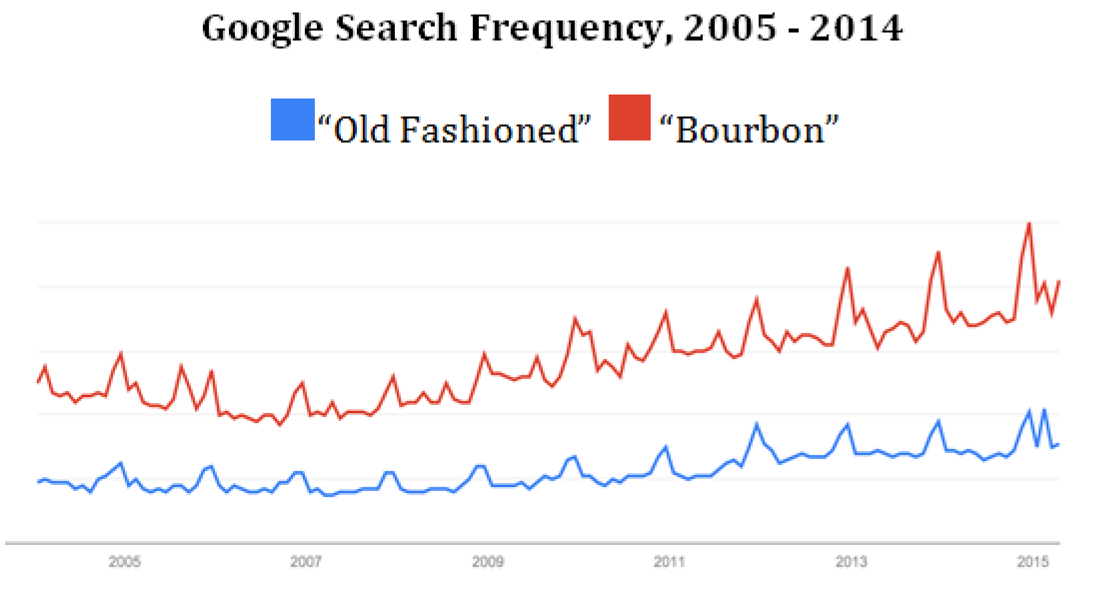
The other main challenge is to capitalize on secular trends that have increased demand for bourbon. In the U.S., demand for bourbon can be attributed to the following cultural trends: increasing sensitivity to "authentic" products, an affinity for cocktails over beer, and the steady removal of local alcohol bans.

Authentic products in America are defined in the consumer mindset by local production, small quantities, or longstanding ties to American heritage. The popularity of such "authentic" products is visible across the U.S. food and beverage industry.[34] U.S. organic food sales, for example, grew 11 percent to $35.9 billion in 2014, representing 5 percent of U.S. food sales.[35] U.S. craft beer sales rose 17 percent in volume in 2014 to command 11 percent of the total U.S. beer market.[36] As America's native spirit, bourbon is well-positioned to capitalize on this trend. The major labels have responded to consumer tastes by releasing small batches of bourbon. Four Roses, for example, touts its small batch bourbon and emphasizes the craftsmanship involved in cultivating a "mellow symphony of rich, spicy flavors along with sweet, fruity aromas and hints of sweet oak and caramel."[37]

Cocktail consumption is also on the rise in U.S. in large part due to the popularity of the TV show Mad Men. The show brought back old school cocktails such as the bourbon-based Old

[34] Matthew Hutson (2014). "Quenching consumers' thirst for 'authentic' brands,' *New York Times,* available at: http://www.nytimes.com/2014/12/28/business/quenching-consumers-thirst-for-authentic-brands.html?_r=0
[35] Jeff Gelski (2015). "U.S. organic food sales rise 11% in 2014," *Food Business News*, available at: http://www.foodbusinessnews.net/articles/news_home/Consumer_Trends/2015/04/US_organic_food_sales_rise_11.aspx?ID=%7B0C1920D3-1822-4467-9FF0-F1EE00E53F54%7D&cck=1.
[36] John Kell (2015). "Craft brewers now produce 1 out of every 10 beers sold," *Fortune*, available at: http://fortune.com/2015/03/16/craft-beers-volume-rising/.
[37] Four Roses Bourbon (2015). "Small Batch," available at: http://fourrosesbourbon.com/bourbon/small-batch/?age-verified=4b15c3b872.

Fashioned. Google search trends show a correlation between the Old Fashioned with the series premier in 2007.[38] The series' return after a 17-month hiatus broke ratings records in 2012.[39]




Finally, the steady reversal of local alcohol sales bans has also contributed to rising U.S. sales. Since 2002, 16 states and Washington D.C. have reversed bans on Sunday liquor sales. Sunday is the most popular day to buy groceries for 35-54-year-olds, who comprise 43 percent of the U.S.'s alcohol consumers.[40]

These developments have offset the effect of local regulations that inhibit demand. In Kentucky, an anti-alcohol bloc with strong political and religious clout limits distillers' local sales. Kentucky's excise tax on spirits is high compared to other leading alcohol-producing states. Kentucky ranks 30th among U.S. states for the lowest alcohol excise taxes, compared to New York and California, the top two wine-producing states, which rank third and fifth,

---

38 Google search trends chart compiled by authors.
39 James Hibberd (2015). "Mad Men Premier Ratings Shatters Records," *Entertainment Weekly*, available at: http://www.ew.com/article/2012/03/26/mad-men-season-5-premiere-shatters-records
40 The Distilled Spirits Council of the United States (2015). "Sunday Alcohol Sales," available at: http://www.discus.org/policy/sunday/.

respectively. Colorado, Missouri, and Wisconsin, the top three beer-producing states ranked sixth, third, and second in beer excise taxes. Tennessee, a close competitor, also has lower taxes.

In addition to higher taxes on alcohol consumption, county bans on alcohol sales are more prevalent in Kentucky than in the rest of the U.S. Of the 120 counties in Kentucky, 39 are completely dry. Thirty two are "wet," and the remaining counties permit sales under special circumstances, such as wine sales at a vineyard.[41]

The tourism cluster, which cultivates demand from out-of-state visitors and promotes the Kentucky bourbon brand, faces state limitations on the amount of alcohol that can be sold on-site to tourists. Forty percent of all Bourbon Trail visitors purchase three liters, the maximum amount of whiskey allowed by state law.[42]

Foreign demand for bourbon stems from tariff reductions and an intense marketing effort by the cluster. Prominent examples of tariff reductions include:[43]

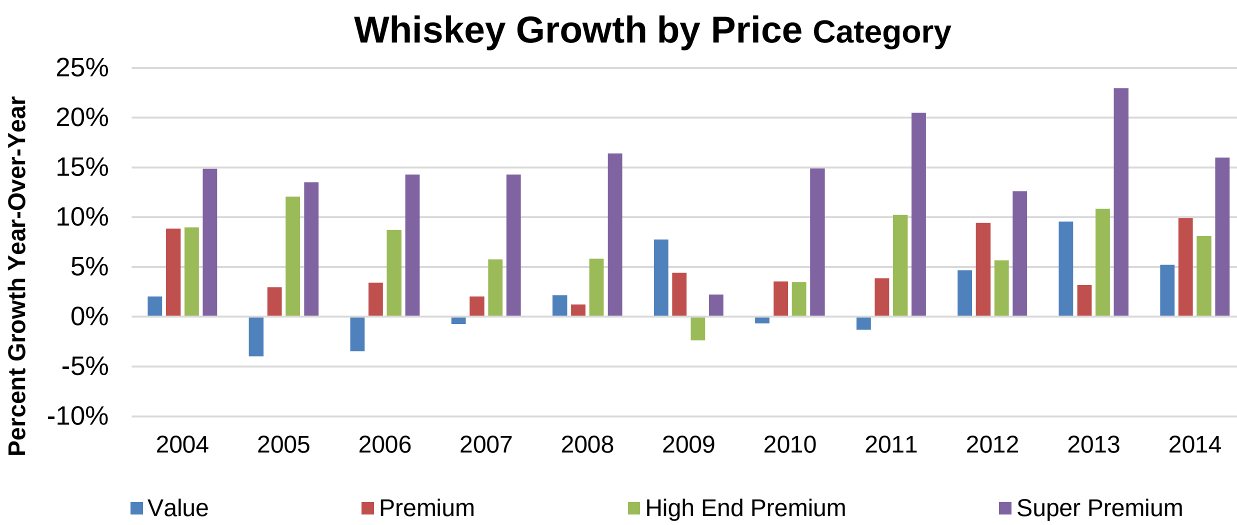
- The European Union eliminating U.S. spirits tariff in 1994. Since then, U.S. spirits exports have tripled to $660 million and the EU accounts for 45% of total U.S. spirits exports.
- Australia eliminating spirits tariff in 2005, after which U.S. spirits exports doubled to $17 million.
- China lowering its tariff to 10% in 2005. Since then, U.S. spirits exports have increased 315% to $8.42 million.

In the U.S. and abroad, consumers are opting for higher-quality spirits. This trend is called "premiumization," and is dominated by growth in limited release, craft, or higher alcohol content brands. Across whiskey, vodka, and tequila consumer markets, super premium brands have

[41] Jack Brammer (2012). "Want to buy or sell an alcoholic drink in Kentucky? That'll depend on where you are," Kentucky.com, available at: http://www.kentucky.com/2012/08/10/2294424_want-to-buy-or-sell-an-alcoholic.html.
[42] Author Interview with Kristin Meadors, Director of Governmental and Regulatory Affairs for the Kentucky Distillers' Association (April 8, 2015).
[43] Distilled Spirits Council (2015). "2014 Industry Review," available at: http://www.discus.org/assets/1/7/Distilled_Spirits_Industry_Briefing_Feb_3_2015_Final2.pdf.

experienced higher growth in the past decade. Whiskey has seen the highest growth in the "super premium" category (see Figure 8).[44]

**Figure 8**




Improving firm rivalry and strategy and the conditions that underlie demand will have the biggest impact on the cluster's future growth, but there is also an opportunity to develop related and supporting industries. Kentucky has a strong network of supporting industries, particularly tourism, but producers and would-be producers face a major gap in terms of specialized financing. Distillers face large capital expenditures, followed by a three year aging process, before they can even sell their first bottle of bourbon. Currently, distillers cannot meet the rising demand for bourbon—a factor that should attract specialized debt financing to cater to distillers' unique needs. The lack of such a tool inhibits growth for all but the most well-capitalized players.

---

[44] The report's authors compiled data gathered and published by the Distilled Spirits' Council in its annual Import/Export reports to produce Figure 8. The reports can be found by navigating to the following link: http://www.discus.org/economics/import/.

*5.6 Key Challenges and Opportunities for the Cluster*

Kentucky bourbon sales benefit from cultural trends at home and improving trade conditions abroad, but cluster leaders and policy makers should seize the opportunity to create the conditions for bourbon's long-term dominance.

## RECOMMENDATIONS

### Context for Firm Strategy and Rivalry

*The U.S. federal government should:*

- Pass the Trans-Pacific Partnership and Transatlantic Trade and Investment Partnership to open new export markets.

*The Kentucky General Assembly should:*

- Reduce the license to operate a craft distillery to $100. The Kentucky General Assembly recently cut the distillery fee to $1,000 from $3,080, but an even lower price would invite new entrants. New York experienced a boom in craft distilleries after reducing the licensing fee to $100 (Kornstein, 2014).

### Demand Conditions

*The U.S. federal government should:*

- Eliminate the federal excise tax to boost U.S. demand and retention of producer profits. Spirits rank among the most highly-taxed products in the U.S. Studies show the government earns $2 in taxes for every $1 producers earn.[45]

*The Kentucky General Assembly should:*

- Reduce consumption taxes from $6.86 to under $1 to conform to the standard of other leading distillery states.
- Eliminate the cap on the amount of spirits consumers can purchase on-site at distilleries. Forty percent of Kentucky Bourbon Trail visitors buy the maximum and their purchase

[45] Distilled Spirits Council of the United States (2015). "Increased Alcohol Taxes Punishes the Entire Hospitality Industry," available at: http://www.discus.org/policy/taxes/.

amounts would likely increase if the cap is lifted.

*Local governments should:*

- Repeal all alcohol sale prohibitions to spur local demand. The number of dry counties in Kentucky inhibits the development of a sophisticated local palate.

## Related and Supporting Industries

*Regional banks should:*

- Develop specialized debt financing programs for small and mid-sized distillers.

*Large distilleries should:*

- Expand their customer base to counter volatility in alcohol trends. Whiskey tends to be consumed at bars, not restaurants. Large distilleries should collaborate with chefs and food scientists to devise pairings to increase consumption.

## Factor Conditions

*The KDA should:*

- Design an educational curriculum to close skill shortages and fill gaps in R&D within the cluster. The University of Kentucky's program is a good start, but the curriculum is based on faculty interest, not the identified needs of distillers.
- Catalyze sector-wide R&D efforts to supplement existing proprietary research and develop shared technology on aging processes and flavor science

*Small and medium-sized distilleries should:*

- Form cross-border IFCs with the Tennessee whiskey cluster to source and bulk purchase inputs and reduce the cost of goods sold.

**References:**

Anderson Economic Group (2012). “Review of Kentucky’s Economic Development Incentives.”

Brown, S.P. and M. Yucel. (2013) “The Shale Gas and Tight Oil Boom: U.S. States’ Economic Gains and Vulnerabilities.”

Institute for Strategy and Competitiveness. (2015). Data.

Kornstein, B. (2014) “The Economic and Fiscal Impacts of the Distilling Industry in Kentucky.”

Porter, M. E. (2015) “The Looming Challenge of U.S. Competiveness.” Presented in Microeconomics of Competitiveness, Harvard Business School.

Porter, M. E. and J. Rivkin. (2014) “An Economy Doing Half Its Job: Findings of Harvard Business School’s 2013-14 Survey on U.S. Competitiveness.”

Veach, M.R. (2013) *Kentucky Bourbon Whiskey: An American Heritage.* Lexington: The University Press of Kentucky.