

Location Trends and Analysis of the American Beer Brewing Industry

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Introduction

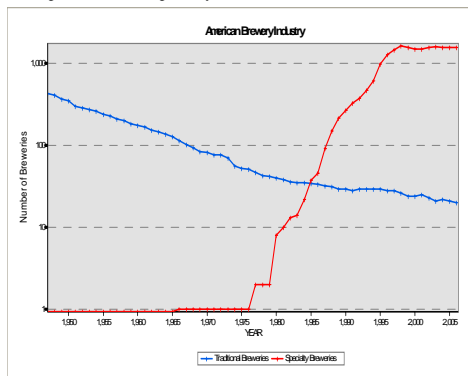
The U.S. is the second largest beer producer in the world, accounting for 14 percent of the world's total market share. The 162 billion dollar industry directly employs 900,000 U.S. workers, and millions of workers indirectly through agriculture, packaging materials, and wholesaling.

Beer drinkers in the US consumed 210 million 31 gallon barrels of beer in 2006. The per capita consumption for persons over 21 is 21.6 gallons.

There has been a major paradigm shift in the brewing industry in the past 30 years. In 1980, 40 traditional breweries and 8 specialty breweries were in business. Today, there are 1,552 specialty brewers and just 20 traditional brewers.

This GIS will look at total number of breweries by state and determine which states produce the most beer, which states consume the most beer, and which states have the highest production to consumption rates.

Fig. 1. Shows the gradual decline of traditional breweries and the rapid increase of specialty breweries since 1980.



Methods

A U.S. Census Shape file of the United States was joined with brewery information acquired from the American Beer Institute "Brewers Almanac".

A graduated color scheme was developed to show state categories and state rankings.

To determine the production to consumption ratio, a separate "ratio" column was created in the attribute table. The field calculator was used to divide the total consumption column by the total production column. The states with a ratio of less than 1 have a negative production to consumption ratio and were symbolized as one group. The remaining states with a ratio greater than .99 were grouped according to their rank.

Data represents shipments from brewers to wholesalers within the state. Shipments are the best available proxy for "consumption". Per capita consumption figures are based on population from the individual state based on 1998 Census figures.

Results

The following maps reflect location, production, and consumption trends in the U.S. Beer Industry.

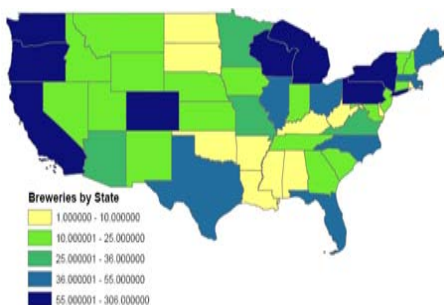


Fig. 2. Ranks states by total number of breweries. States along the West Coast, East Coast, Upper Midwest, and Colorado have the most breweries.

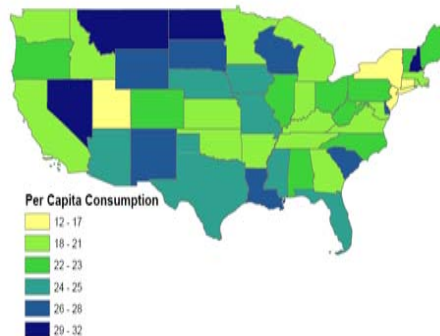


Fig. 3. Illustrates beer consumption per person over age 21 for each state.

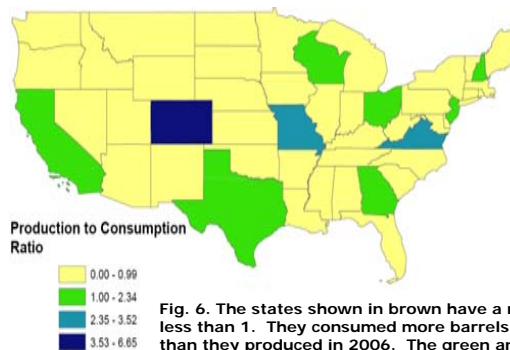


Fig. 6. The states shown in brown have a ratio of less than 1. They consumed more barrels of beer than they produced in 2006. The green and blue states produced more than they consumed.

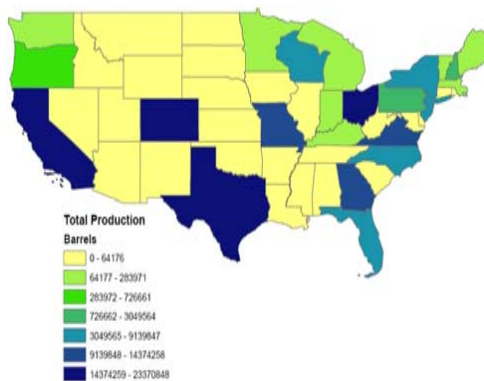


Fig. 4 Total Production by state in 31 gallon barrels

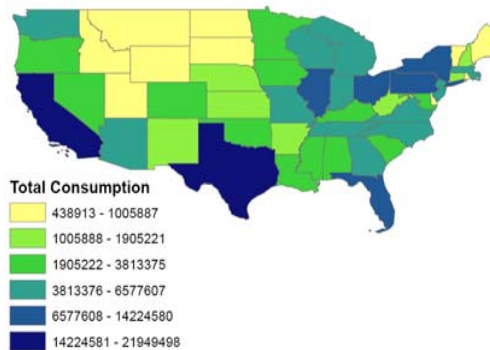


Fig. 5. Total Consumption by state in 31 gallon barrels

Conclusions

The States that produce the most beer in the U.S. are the West Coast states, the East Coast states, and the Upper Midwestern states. The deep south states: Mississippi, Alabama, Louisiana, Tennessee, and Florida rank among the lowest beer producing states in the U.S.

Colorado is the largest producer in the Country, with 108 breweries producing 23,370,848 barrels of beer in 2006. California leads the nation in breweries, with 306, and is second to Colorado in barrel production. Missouri ranks 6th, producing 14,000,000 barrels in 2006. Texas, Ohio, and Virginia are also in the top 5.

The states with the highest per capita consumption rates are North Dakota and New Hampshire at 32, followed by Nevada: 31, Wisconsin: 30, and Louisiana at 28. Missouri, consuming 24 gallons per capita, ranks just above the mean of 23.

Although California has more breweries than any other state, it ranks among the lowest in per capita consumption. The average Californian over age 21 drinks 19 gallons of beer each year. Utah has the lowest per capita consumption at 12 gallons per capita, followed by Connecticut, New York, and New Jersey at 17 gallons per capita.

Only 10 states have a positive production to consumption rate (PTC Rate). Colorado, with a production to consumption rate of 6.1 is the highest, followed by Missouri at 3.2. Virginia, New Hampshire, Ohio, and Georgia follow respectively with PTC rates in the 2's.

Alabama, Mississippi, Oklahoma, Arkansas, Iowa, and North Dakota all have PTC rates of less than .0009.

Literature cited

U.S. Census Bureau, United States TIGER Shape file

Brewers Almanac. 2008. United States Beer Institute

U.S. Bureau of the Census. 1998. Population Figures

Acknowledgments

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