

Microbrew Consumption in the United States

Do chain retail store availability regulations negatively impact demand for microbrew?

ABSTRACT: Recent regulatory proposals in Colorado have sparked an intense debate over whether or not availability regulations (such as allowing alcohol sales on Sundays) have an impact on the consumption of microbrew beer in the United States. Many brewers argue that allowing full-strength liquor and beer sales in chain outlets, such as grocers and big-box stores, will decrease demand for microbrew due to the greater availability of substitutes. Counterarguments suggest that greater availability would grow the market for beer in general, and increase consumption of microbrew beer.

This paper develops a model for microbrew consumption and examines data from 45 states. The results suggest that the primary explanatory variables describing microbrew consumption are tax regulations, availability of wine (as a complement), minority population, and the number of breweries per capita. The impact of beer availability in grocery stores on microbrew consumption appears to be negative, but statistically insignificant.

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I. Introduction

Over the past 30 years, the craft beer¹ industry in the United States has experienced resurgent production levels not seen since before prohibition. While various European countries have enjoyed high levels of craft beer consumption, this trend was relatively rare in the U.S. Overall market share of craft beer in the United States remains low as compared to that of mass-produced (macrobrew) beer, such as Budweiser or Coors. However, consumption is steadily increasing. Craft beer producers such as the Boston Brewing Company and New Belgium Brewery are experiencing extremely high growth rates. The number of microbreweries² in the U.S. has similarly increased. While there are a substantial number of econometric studies showing the relationship between various independent variables and the consumption of alcohol in general, few have examined the economics of craft and microbrew beers. Numerous econometric studies examine the causal link between alcohol availability and consumption, alcohol abuse, and disease rates. However, few studies examine the nature and causes of the consumption of microbrew beer in the U.S.

In 2008, the Colorado House of Representatives proposed legislation to allow chain retail outlets, such as grocery stores, to sell full-strength beer, wine and spirits to the general public. While the legislation was defeated, the issue is expected to reappear in an upcoming general election. More importantly, the issue sparked opposition from brewers and liquor store proprietors in the state. Specifically, an argument was put forth that statewide grocery sales would be detrimental to the consumption of microbrew beer in Colorado. A decrease in demand

¹ Beer brewed using traditional methods and ingredients (barley, hops, yeast and water), as opposed to mass-produced macrobrew beer. Craft breweries have been traditionally broken down into three categories: Craft brewery, brewpub, and microbrewery.

² A microbrewery is defined as a brewery that produces less than 15,000 barrels of beer annually.

would cause a subsequent retardation of the microbrew industry throughout the state due to the greater availability of macrobrew beer. Unfortunately, there are no studies which support or dispute this claim.

This paper evaluates the soundness of the claim that microbrew consumption is negatively correlated with full-strength grocery store sales. It is comprised of two sections: a literature review and an econometric model. The literature review examines economic analyses to-date, focusing on studies surrounding beer, wine, and spirit availability as well as models determining consumption. Secondly, the author has constructed an econometric model for the consumption of microbrew beer. The model estimates the demand function for microbrew throughout 45 states for the year 2007. Alaska, Hawaii, North Dakota, Utah and Wyoming are omitted from the study due to either lack of data or no microbreweries operating in the state with sufficient capacity. Standard predictive variables such as price indexes and demographic data are accounted for. The model also accounts for church attendance rates and availability regulations by state (e.g. Sunday liquor sales). It is hypothesized that microbrew consumption will not be significantly dependent upon grocery and/or chain liquor store availability regulations.

The results of the model show several unique determining factors, chief among them being the number of microbreweries per capita in a given state. This may be a misleading result, however, since consumption is a determinant of the number of microbreweries in a state and vice versa. The test suggests that tax rate, minority population percentage, and Sunday wine and liquor sales are also statistically significant. More importantly, the data do not show that allowing grocery and chain liquor stores to sell full strength beer significantly impacts microbrew consumption.

II. Literature Review

a. Introduction

There is substantial literature discussing the correlation between alcohol consumption, abuse, and price. Many studies have also shown a correlation between government regulation and alcohol consumption. These studies note the relationship (albeit differing in magnitude depending on the type of alcohol) between price and consumption. As price rises, consumption goes down. The primary focus of this literature review is the consumption of alcohol, with a secondary focus on beer. The author will discuss alcohol in depth – including wine and spirits – where the three act as close substitutes. Where appropriate, beer is discussed specifically. Several studies which describe models for consumption functions are also included. While it is the intent of research paper associated with this survey to describe the relationship of government regulation to sales of microbrew in the United States, it is worth noting that many studies focus on externalities from alcohol use. Many studies focus on the impact of consumption on negative social externalities including binge drinking, traffic fatalities, or alcohol-related diseases, though a few note nominal positive gains associated with mild alcohol usage (Tremblay and Tremblay, 2005, 226). While it is not the intent of this literature review to focus on the positives or negatives of alcohol consumption, it is predicted that craft beer consumption will follow many of the same patterns as those found in the sections below. Thus the research proves a solid foundation from which to begin any serious study of beer consumption in the United States.

b. Theory

The theory behind the consumption of alcohol is relatively straightforward. As with all other consumption goods, the demand curve for beer, wine and spirits is downward sloping. As the availability of alcohol is changed due to price modifications from taxes or policy changes such as regulations on liquor sales, consumption is expected to decrease. However, there is not a consensus on measured price elasticity of demand for alcohol in general (Levy and Sheflin, 1985, 47). Godfrey (1986) proposes that the log-linear model is a good starting point for a modeling of the demand functions for most alcoholic products. The author critiques a number of studies based on their usage of time-series vs. cross-sectional data to determine consumption models. The interstate variability of cross-sectional data provides ample price and consumption information, which is useful in building consumption models. It is, however, important to control for different factors impacting state-by-state consumption such as drinking age, income, and availability. Godfrey also discusses various inputs to demand functions, which have an impact on models. Specifically, when modeling demand functions for consumption goods it is important to look for multicollinearity among independent variables as it is often found in cross-sectional data.

In discussing beer consumption models, Adams (2006) suggests that consumption patterns are heavily affected by preferences brought about by marketing and distribution decisions. Television advertising precludes smaller breweries from competing on local levels with their larger counterparts. Larger brewer integration also affects the availability of the various types of beer (craft beer, microbrews, and large producers). Adams also discusses the effect of excise taxes on the availability of the different types of beer (p. 199). He notes that lower taxes on smaller amounts of production saw an increase in the number of microbreweries in the U.S. He concludes that availability is primarily determined by public policy (excise taxes and regulations) and, more importantly, is subject to various economies of scale (p. 200).

Because the availability of alcohol is a substantial determinant of consumption, these restrictions may have a substantial impact on craft brew consumption in the U.S.

While the economics of beer production provide insight into the shape of the market – specifically why a lack of smaller brewers exists in the United States as opposed to other countries, there is data to suggest that not all expenditure models follow those of similar industries. Of particular note is advertising, Tremblay and Tremblay (2005, 227) note that advertising expenditures in U.S brewing have little impact on the size of the market. Each firm may be able to capture greater market share from their competitors, but they do not enlarge the market for beer as a whole. The authors note that specialty brewers only possess a 2 percent market share of all beer sales in the U.S., with “super premium”, “import”, and “specialty” beers having a 16 percent market share in total (Tremblay, 104). They also discuss general factors impacting the specific demand for beer in the United States. The price of beer, income, and the price of complements and substitutes are of particular interest. Specifically the prices of wine and spirits have a large impact on the marginal price of beer. Real income also has an impact on the demand for alcohol, though beer may be less sensitive to income changes than other variants. While real income has more than doubled in the past 50 years, the nominal price of ethanol (or absolute alcohol) has stayed approximately the same. The result is a net increase in demand for alcoholic beverages. This is consistent with other studies in this survey (Chaloupka, Grossman et. al, 2002).

c. Research

Chaloupka, Grossman and Safer confirm that the demand curve for alcohol is downward sloping just as theory suggests. Excise taxes reduce effective demand for alcohol due to an

increase in price. This change in demand does vary between the different alcohol types. The price elasticity of demand for beer is estimated at -0.3, suggesting that beer consumption is relatively price inelastic. Other policies have been effective in changing the demand for alcohol, including warning labels, stronger misdemeanor enforcement laws (including drunk driving legislation) and so-called “blue laws” which make obtaining alcoholic beverages more difficult for consumers. States may, for example, prohibit liquor store sales on various days or the week or after hours. The authors note that regulation is by far the more common method of altering demand curves for alcohol; taxes on alcoholic beverages have changed little since the 1950’s. Because the nominal price of alcohol has remained relatively stable for the past 50 years, this means the real price has effectively dropped. The authors note this corresponds to an increase in alcohol consumption over that time period.

Ornstein and Hanssens (1985) attempt to account for regulatory laws’ impact on the demand for alcohol – omitting wine due to lack of price data. Their model incorporates a multiplicative function because of expected non-linear impacts from independent variables. Demand is calculated in terms of alcohol consumption per capita on a state-by-state and year-by-year basis for all 50 states plus Washington D.C. in the years 1974-1978 . Independent variables are split into economic, sociodemographic, and regulatory components. Of particular note is the variable *Retail Availability*, which is the focus of this author’s associated study. Retail restrictions are accounted for, such as restrictions on alcohol type, number of outlets, Sunday sales, and grocery store sales (204). The study concludes that demand for beer, as opposed to distilled spirits, is highly income inelastic – suggesting that price and income will have a smaller effect on beer consumption. The study also notes that religious variables for beer are “positive and significant” (209). While a determination shows that Sunday liquor sales is a statistically

significant factor of consumption, grocery store sales showed a positive correlation of .006 which was not statistically significant at the 5 percent level. Instead, the primary factor influencing demand is the youthfulness of the population (210).

Other studies use a similarly direct approach to determining the demand curve for alcohol consumption (Levey and Shefflin, 1985). By calculating demand for alcohol as a total (including beer, wine, and spirits), cross-price effects can be eliminated from consumption models. To calculate demand and price elasticity, Levey and Shefflin use a time-series analysis from the previous forty years across the United States. The authors calculate gallons of alcohol consumed as a function of per capita income and the relative price of alcohol. Control variables such as age, substitution of illegal alcohol (moonshine), tourism, advertising, and population density are accounted for. They then used a log-log least squares regression to determine both consumption as well as the price elasticity of demand. The results show the price elasticity of demand at -0.5. This suggests that a change in the availability of alcohol which has a nominal effect on price, such as allowing grocery store liquor sales, will have a moderate effect on consumption. This data appears contradictory to other studies (Ornstein and Hanssens, 1985). However, this may be due to price effects on consumption rather than direct availability effects. The authors conclude that tax policy would be effective in affecting consumption, though equity issues and the efficacy of tax policy on reducing alcohol abuse are still at issue. It is worth noting that every study cited found a different price elasticity of demand depending on the independent variables used. Almost all studies cited noted this difference (Godfrey, 1986) (Adams, 2006).

There does, however, appear to be a substitution effect between alcohol and tobacco. Goel and Morey (1995, 458) note that as prices of cigarettes increase due to excise taxation, consumption of alcohol increases. The authors used a least-squares regression to determine the

substitution effect between liquor sales and alcohol sales., They controlled for the price of alcohol, government regulations, advertising expenditure and persistence effects. The study found a tobacco price coefficient of +0.332 (significant at the 5 percent).

Other studies note that there is a correlation between alcohol availability and consumption (Zakocs 2000, 328). The author notes that communities with lower rates of liquor availability (based on number of outlets) observe lower rates of consumption and, as a result, lower rates of associated alcohol-related problems such as drunk driving, cirrhosis of the liver, and alcohol related violent crime. Zakocs uses a multivariable regression analysis to determine how “local option policies” affect the availability of alcohol in 100 counties in North Carolina. Local option policies are votes allowing local governments to determine the extent to which alcohol sales are allowed on a jurisdictional basis. The author controlled for the number of hotels within the jurisdiction per 10,000, median household income, racial makeup, socioeconomic makeup, and land/population ratios. The study concludes that local options policies are the strongest correlate of beer, wine, and spirits availability. Although consumption-related problems are mostly beyond the scope of this literature review, the author’s conclusion is that this is the first link in the chain to reducing alcohol-related problems in communities.

d. Summary of Research

Most of the research involving alcohol consumption in the United States over the past 50 years has been focused on addressing consumption as a means to support governmental policies. Traditionally, these policies have been directed toward reducing negative externalities associated with alcohol abuse: traffic fatalities, domestic abuse, cirrhosis of the liver, and other use-related problems. Noted in all the studies, the primary determinants of consumption are the price of

alcohol or beer as well as the price of complements (Levey and Shefflin, 1985) (Chaloupka et. al, 2002) (Ornstein and Hanssens, 1985). Other studies noted that alcohol availability and the youthfulness of a given community were major predictors of consumption in the U.S. (Zakocs, 2000) (Ornstein and Hanssens, 1985). Generally, log-linear or linear regressions were used, though Ornstein and Hanssens provide a notable exception, arguing that independent variables have a non-linear relationship to per-capita consumption.

Every study supported the theory that demand for alcohol is downward sloping. Although estimations varied quite a bit by study, studies noted a low (negative) income inelasticity of demand for beer in particular – suggesting that the demand for beer is less dependent upon income and price than other types of alcohol. That said, there are substitution effects associated with other goods. The data suggest that cigarettes and the prices of other substitutes have an impact on alcohol consumption (Goel and Morrey, 1995) that could be statistically significant.

While cross-sectional and time-series studies have looked at the impact of availability, regulation, and price on the consumption (and abuse) of alcohol, there is little data showing the relationship between these variables and the consumption of different types of alcohol. The impact of regulation on craft beer, specialty wine, or other niche markets is still an uncovered topic – one that may prove insightful in light of recent changes in consumption patterns in the U.S.

III. Model

a. Overview

The difficulty in developing a model for the consumption of microbrew in the United States is twofold. First, primary data on microbrew consumption is not readily available. While there are several sources available for production data, consumption data does not appear to exist. Because of this, the model uses production as a proxy for consumption³. Macrobrew beer such as Coors and Budweiser are produced in a few states and then shipped throughout the country. While large amounts of craft brew operate in the same fashion - for example, Sam Adams Ale is shipped throughout the U.S. by the Boston Beer Company – it is presumed that distribution is substantially less dispersed in the microbrew industry. The Ska Brewery, a medium-sized microbrewery in Colorado, likely produces the vast majority of their beer for Colorado consumption. As such, the model uses microbrew production as a proxy for consumption. The author notes that this is an opportunity for the augmentation of the model.

Independent variables were chosen based on expected determinants of microbrew consumption, such as price, availability laws, taxation, general beer consumption and various demographic inputs. While the drinking age for all states in the U.S. is 21, it is expected that a large number of 18-21 year olds also consume alcohol in significant portions⁴. Demographic data accounts for younger drinkers as well. For example, per capita consumption is averaged for the population 18 and up. Taxation data was available for several different container types (Beer Institute 2008). Regressions showed much of this data to be collinear, so only beer tax per case was used.

b. Model Design

³ This may be truer for microbrew beer than craft beer. Many craft breweries have entered into agreements with larger distributors to have their beer distributed over a greater region.

⁴ Evidence of drinking in the 18-21 year old range was observed during the author's initial primary research, performed a number of years before the study began.

i. Price Variables

PRICE_BEER – The price of a six-pack of Heineken, averaged over each city sampled in each state (ACCRA Cost of Living Index 2007).

PRICE_WINE – The price of a bottle of wine, averaged over each city sampled for each state (ACCRA Cost of Living Index 2007).

BEERTAXPERCASE – Tax per case of beer (24 cans or bottles) by state (Beer Institute 2008).

ii. Consumption Variables

SPIRITS_PERCAP18 – Spirits consumption per capita⁵ in each state (Beer Institute 2008).

WINECONS_PERCAP18 – Wine consumption per capita in each state (Beer Institute 2008).

BEERCONS_PERCAP18 - Total beer consumed per capita in each state (Beer Institute 2008).

iii. Demographic Variables⁶

PERCAPGDP – Per capita GDP by state (Beer Institute 2008).

CHURCHAT – Percentage of population by state that attends church, compiled from 2004 to 2006 (Gallup 2006).

MINORITY_PCT – Percentage of non-white (Hispanic or otherwise) population by state (U.S. Census Bureau 2007).

iv. Availability or Regulatory Variables

BREWERIES_PERCAP18 – Microbreweries per capita (18+) (The New Brewer 2008).

ABC_STATE – Dummy variable: whether or not the state is an Alcoholic Beverage Control state (Wikipedia n.d.).

SUNDAY_BEER – Dummy variable: whether or not the state allows full strength Sunday beer sales (Beer Institute 2008).

⁵ All per capita data is based on an 18+ population. While the legal drinking age for all state in the U.S., it is presumed that a significant portion of those aged 18-21 also consume alcoholic beverages.

⁶ Population data was omitted from the study (specifically population and population over 18) due to collinearity. Per capita data was derived from population numbers.

SUNDAY_SPIRITS – Dummy variable: whether or not the state allows sales of spirits on Sundays (Beer Institute 2008).

SUNDAY_WINE – Dummy variable: whether or not the state allows Sunday wine sales (Beer Institute 2008).

GROC_SALES – Dummy variable: whether or not the state allows full strength sales of beer in grocery stores and other chain retail outlets.

c. Data and Results

Results are listed bellow for the following equation. Linear regression was run using the EViews 5 software package:

$$\begin{aligned} MICRO_PERCAP18 = & \beta_1 + \beta_2 PRICE_BEER + \beta_3 PRICE_WINE + \beta_3 BEERTAXPERCASE + \\ & \beta_4 SPIRITS_PERCAP18 + \beta_5 WINECONS_PERCAP18 + \beta_6 BEERCONS_PERCAP18 + \beta_7 PERCAPGDP + \\ & \beta_8 CHURCHATT + \beta_9 MINORITY_PCT + \beta_{10} BREWERIES_PERCAP18 + \beta_{11} ABC_STATE + \\ & \beta_{12} SUNDAY_BEER + \beta_{13} SUNDAY_SPIRITS + \beta_{14} SUNDAY_WINE + \beta_{15} GROC_SALES + e \end{aligned}$$

i. Model Data

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--|-------------------|----------------|-----------------|----------------|
| Intercept | -0.61448 | 0.69430 | -0.88503 | 0.38340 |
| Price of beer (6-pack Heineken) | 0.10722 | 0.06933 | 1.54644 | 0.13280 |
| Price of wine (750ml) | -0.01586 | 0.03451 | -0.45955 | 0.64930 |
| State tax on beer, per case | -0.14738** | 0.06104 | -2.41471 | 0.02230 |
| Spirits consumed per capita per year (gallons) | 0.05699 | 0.06569 | 0.86753 | 0.39280 |
| Wine consumed per capita per year (gallons) | -0.00001 | 0.04849 | -0.00026 | 0.99980 |

| | | | | |
|---|---------------------|-------------------|-----------------|----------------|
| Beer consumed per capita per year (gallons) | 0.00305 | 0.00597 | 0.51045 | 0.61360 |
| Per capita GDP | -0.00001 | 0.00001 | -1.21780 | 0.23310 |
| Attends church regularly (percent) | -0.37180 | 0.59998 | -0.61969 | 0.54030 |
| Minority population (percent) | 0.77763** | 0.32285 | 2.40864 | 0.02260 |
| Number of breweries per capita | 19372.23000† | 2664.13400 | 7.27149 | 0.00000 |
| ABC State | -0.00054 | 0.04418 | -0.01212 | 0.99040 |
| Sunday beer sales allowed | 0.04100 | 0.10027 | 0.40894 | 0.68560 |
| Sunday liquor sales allowed | -0.22937† | 0.06355 | -3.60908 | 0.00110 |
| Sunday wine sales allowed | 0.21584** | 0.08629 | 2.50134 | 0.01830 |
| Grocery store sales of full strength beer allowed | -0.10760 | 0.06977 | -1.54207 | 0.13390 |

* Significant at the 10 percent level

** Significant at the 5 percent level

† Significant at the 1 percent level

$R^2 = 0.841850$

ii. Model Interpretation

The results of the linear-linear regression above shows that “Tax per case of beer”, “Percent minority” and “Sunday wine sales” are all significant variables at the 5 percent level. “Sunday liquor sales” is a significant independent variable at the 1 percent level. However, the data suggest that the primary determinant of microbrew consumption is the number of microbreweries per capita. This does, however, represent a chicken-and-egg problem. While one can make an argument that demand drives production and, hence, the number of microbreweries per capita, it is also logical to suggest that states with legal structures favorable to microbrewers

experience a correlated increase in consumption. That is to say, if you brew it, they will come. Unfortunately, there is not enough research in the area to provide an answer at this time.

It is worth noting that a number of predictive variable coefficients were unexpected. The author initially expected all other forms of alcohol to act as substitutes to microbrew beer. In fact, this is not the case. While the model shows that spirits and microbrew are substitutes, wine and microbrew appear to be complements. This was an unexpected result, but makes sense in hindsight given an expected difference in consumption patterns among the sexes⁷. Additionally, the data show that as the price of beer increases, consumers tend to purchase more microbrews. While the coefficient is not statistically significant, its negative value is counterintuitive. This appears to be the result of the specific price data used – namely the cost of a six-pack of Heineken. The result suggests that microbrew and macrobrew beer may be substitutes. *Ceteris paribus*, as the cost of macrobrew beer increases, consumers should opt for higher quality alternatives. This explains the apparent contradiction between an increase in “price of beer” and a resulting increase in demand for microbrew.

One expected result was that regulations on Sunday liquor sales positively impacted microbrew consumption in the states sampled. In fact, the estimated beta value of 0.21584 is significant at the 5 percent level. This suggests that states can have a substantial impact on microbrew consumption simply by tweaking availability regulations. This is consistent with other studies (Zakocs 2000). State taxation of production is also statistically significant, which is in line with other empirical studies. Minority population is also significant at the 5 percent level,

⁷ Women tend to prefer wine to beer. Then for couples, wine and beer may act as complements. As the quantity demanded of wine decreases, the quantity demanded of microbrew may decrease accordingly. Including demographic variables such as per-sex demand for alcoholic beverages in the model may shed light on this question.

with those states consuming more that have larger minority populations. Unfortunately, there isn't as much data to suggest *why* this particular correlation exists.

The focus of this paper was the question of whether or not grocery store and/or chain retail sales would negatively impact microbrew consumption in the various states. The results of the model show that consumption *is* negatively correlated with increased availability in grocery stores and liquor chains. However, the results are not statistically significant at any level. Controlling for other factors, increased availability does not appear to have a substantial impact on consumption patterns. Brewers looking to increase demand for craft beer should turn their attention to more significant variables, such as rates of taxation, Sunday liquor availability, and growing the minority populations of their states. Secondly, because of the correlation between microbrew consumption and the number of breweries per capita, it may very well be the case that brewers can help stimulate demand simply by offering more alternatives.

iii. Further Research Opportunities

While numerous studies have outlined the affects of consumption on teen drinking, alcohol abuse, and other public health topics, few have focused specifically on the determinants of beer consumption. Of those that have, none has directly created a model to explain microbrew consumption. This paper has attempted to describe a basic model outlining the major determinants of consumption. There is, however, room for improvement.

A lack of primary data may have influenced the model through omitted variable bias. While price data was available through the ACCRA cost of living index, the data included only price for macrobrew beer. Because of this, the model doesn't include price data for microbrew or spirits. It is highly likely that there are significant substitution effects between microbrew,

macrobrew and spirits as suggested in other data. Moreover, consumption figures are not currently available for microbrew beer. As a result, production values were used. The author assumes that the majority of beer produced by microbreweries is consumed locally. However, the exact figures are impossible to ascertain without consumption figures. Additionally, this model only incorporates data for 2007. A time-series analysis would be more effective in creating a more accurate picture of the effect of descriptive variables on microbrew consumption on a state-by-state basis.

There is also substantial room for expanding the number of variables in the model. The model currently accounts for 15 independent variables, controlling for many regulatory variable in particular. However, demographic variables may play a larger role in microbrew consumption than previously hypothesized. Moreover, price and consumption data for macrobrew beer are used as proxies for microbrew consumption data, which undoubtedly has an impact on the model. Additionally, the model does not incorporate marketing variables, which have also been proven to be significant in explaining beer consumption in general (Adams, 2006). Other studies have shown that the price of cigarettes is correlated with alcohol consumption (Goel and Morey, 1995, 458). Accounting for these and other complements should increase the accuracy of the model.

IV. Conclusion

The economic climate surrounding the microbrew industry is in a phase of tremendous growth. This new renaissance in the U.S. brewing industry has created opportunities for many new breweries to enter the market. While consumer tastes have become more varied and more entrants fight for market-share, rent-seekers battle for more and more regulatory changes. In the

case of Colorado, this takes the form of grocery store and chain liquor sales. Microbrewers have traditionally argued that increased availability actually hurts their industry due to increased access to substitutes.

An analysis of the literature to date suggests that primary determinants of alcohol consumption are price and regulatory variables. However, while price is a significant determinant, most models note that demand for beer is relatively price inelastic. While all of the models reviewed contain availability-related variables, they do not show retail availability as a statistically significant predictor of consumption.

This paper confirms the hypothesis that microbrew consumption is not significantly determined by outlet availability regulations. While Sunday liquor sales have a statistically significant impact on per-capita consumption of microbrew beer, allowing grocery stores or other chain outlets to sell full strength liquor has little bearing on how much microbrew consumers choose to purchase. Results of the model suggest that microbrewers wishing to have an impact on the economics of their industry should ignore retail availability and instead focus their efforts on other variables.

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