

Are Alcohol Tax Hikes Fully Passed Through to Prices?

Evidence from Alaska

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ABSTRACT

On October 1, 2002 the State of Alaska increased taxes on malt beverages from \$0.35 per gallon to \$1.07 per gallon; increased taxes on wine from \$0.85 per gallon to \$2.50 per gallon; and increased taxes on distilled spirits from \$5.60 per gallon to \$12.50 per gallon. We use primary data on alcoholic beverage prices in Alaska to study a very basic question: What was the impact of the tax hikes on prices? Economic theory and previous empirical studies, mainly of taxes on goods other than alcoholic beverages, do not provide very much guidance on what to expect. For competitive markets with constant marginal costs of production, taxes are predicted to be fully passed through to prices, but in imperfectly competitive markets a 1-cent increase in taxes may increase taxes by less than or more than 1-cent. To address this very basic empirical question, just before and a year after the tax hike we conducted telephone surveys of on-premise and off-premise alcohol retail establishments across Alaska. The rich data allow us to estimate the impact of the tax hike: across beverage types (beer, wine, spirits); across brands; and across premise type.

1. Introduction

On October 1, 2002 the State of Alaska increased taxes on malt beverages from \$0.35 per gallon to \$1.07 per gallon; increased taxes on wine from \$0.85 per gallon to \$2.50 per gallon; and increased taxes on distilled spirits from \$5.60 per gallon to \$12.50 per gallon. The net effect of the changes is that beer, wine and spirits will be taxed at approximately 10 cents per standard drink. In this study we use primary data on alcoholic beverage prices in Alaska to study a very basic question: What was the impact of the tax hikes on prices?

As discussed in more detail in section 2, economic theory and previous empirical studies, mainly of taxes on goods other than alcoholic beverages, do not provide very much guidance on what to expect: It is an empirical question. To answer the question, just before and a year after the tax hike we conducted telephone surveys of on-premise and off-premise alcohol retail establishments across Alaska. The primary data collection effort is described in section 3. In section 4 we use the rich data to estimate the impact of the tax hike: across beverage types (beer, wine, spirits); across brands; and across premise type. Section 5 discusses the preliminary conclusions and outlines some directions for future research.

2. Background

The Alaskan tax hike is an important alcohol control policy change with potential public health significance. The Alaskan tax hikes are substantial when compared to the recent history of federal and State excise taxes. Alcohol excise taxes are not routinely increased to compensate for the effects of inflation. As a result, after adjusting for inflation real tax rates have declined over most of the postwar period, except for the federal tax increase in 1991. The 1991 doubling of the federal excise tax on beer, which increased the tax from \$0.29 per gallon to \$0.58 per

gallon, was much smaller than the new Alaska beer tax hike from \$0.35 to \$1.07 per gallon. Across States in 1994, excise taxes on beer ranged from \$0.02 per gallon in Wyoming to \$0.89 per gallon in Hawaii; in 32 States the excise tax rate on beer was \$0.20 per gallon or less (USDHHS 1997, p. 278). Similarly, by current U.S. standards, the approximate tripling of the Alaskan excise tax on wine and the approximate doubling of the Alaskan excise tax on spirits are very large increases.

The Alaskan experience takes on added importance because of the continuing policy interest in alcohol taxes. Other States that have considered raising taxes on alcoholic beverages in the past few years include Connecticut, Hawaii, Kansas, Louisiana, Nebraska, New Mexico, Oregon, South Carolina, and Tennessee (JoinTogether Online, 4/3/2002, 5/15/2002). On the other hand, HR 1305, a bill to roll back the federal excise tax on beer to its pre-1991 level, currently has 225 co-sponsors in the House of Representatives.

The public health significance of alcohol taxes depends upon their effectiveness in reducing problematic alcohol consumption. Most economists who have studied the issue agree that higher alcohol taxes or prices reduce alcohol consumption and alcohol-related problems. Leung and Phelps (1993), Cook and Moore (1993, 2002), Kenkel and Manning (1996), and Chaloupka, Grossman and Saffer (2002) provide more detailed reviews of the econometric research literature on this subject. Alcohol demand functions have been estimated using different types of data and measures of consumption: time series data on national aggregate consumption; pooled time series of state cross-sections; and micro-level data on consumption from surveys of individuals. Recent alcohol demand studies that incorporate addiction provide more evidence that alcohol consumption falls when prices rise (Waters and Sloan 1995, Moore

and Cook 1994, Grossman, Chaloupka and Sirtalan 1998). This is consistent with studies that find strong relationships between alcohol prices or taxes and various measures of alcohol abuse, including liver cirrhosis death rates and motor vehicle fatality rates (e.g., Cook and Tauchen 1982, Chaloupka, Saffer and Grossman 1993, Ruhm 1996). Both Manning et al. (1995) and Kenkel (1996) find that many heavy drinkers are responsive to price, but there is evidence of a subset of very heavy drinkers who are not. However, some studies raise more doubt about the impact of higher alcohol taxes or prices. Dee (1999) and Mast, Benson, and Rassmussen (1999) fail to find a strong relationship between beer taxes and motor vehicle fatality rates. Sloan et al. (1994) fail to find a strong relationship between alcohol prices and deaths related to alcohol.

The econometric studies typically estimate either the impact of taxes or the impact of prices on alcohol consumption and alcohol-related problems: These studies do not directly estimate the relationship between taxes and prices. Instead, these studies yield estimates of the tax- or price-responsiveness of consumer demand, usually summarized by an elasticity defined as the percentage change in quantity demanded that results from a 1 percent change in tax or price. If taxes are passed through to prices at a rate α the relationship between the tax elasticity, η_{TAX} and the price elasticity η_{PRICE} , is given by $\eta_{PRICE} = \eta_{TAX} \times (\alpha T/P) - 1$. A standard assumption is that alcohol taxes are fully passed through to consumer prices at a rate $\alpha = 1$: a 1-cent tax increase is assumed to result in a 1-cent price increase.

Economic theory suggests reasons to question the assumption that alcohol taxes are fully passed through to consumer prices. The extent to which taxes are passed through to prices depends upon factors including market competitiveness and demand conditions. For competitive industries with constant marginal costs of production, economists expect taxes to be fully passed

through to consumers ($\alpha = 1$). This may not apply to business sectors in which competition is limited, which some authors have suggested is the case for alcoholic beverage markets (Cook and Moore 1993). In such industries, a 1-cent increase in taxes may increase prices, but by less than or more than 1-cent. For example, under a simple monopoly where one firm supplies the entire market, if the firm's marginal costs are constant and it faces a linear demand curve, the price to consumers rises by exactly half the tax rate ($\alpha = 0.5$). But if the demand curve faced by the monopolist displays constant elasticity, the price will always rise by more than the amount of the tax ($\alpha > 1$). Katz and Rosen (1985) and Besley (1989) extend the analysis to an oligopoly setting where a few large firms tend to dominate the market. Stern (1987) examines tax effects using the conjectural-variations model under a spectrum of possible market structures including perfect competition, monopolistic competition, Cournot-oligopoly and monopoly. After describing various possible outcomes about the rate of tax pass through, Stern (p. 154) concludes that "Taken together these examples show that the simple analysis of tax shifting in perfect competition may be misleading and that one should allow for a much broader range of possibilities."

The empirical evidence on the extent to which alcohol taxes are passed through to prices is mixed and very limited. In what appears to be the only comprehensive study of U.S. alcohol taxes, Young and Bielinska-Kwapisz (2002a) estimate that retail prices of alcoholic beverages rise by more than the amount of an excise tax; the implied pass-through rates α range from about 1.6 to 2.1. Young and Bielinska-Kwapisz use price data on specific beverages collected by the American Chamber of Commerce Research Association (ACCRA). There are a number of limitations to the ACCRA price data. First, ACCRA provides the prices of only three beverages.

Second, for each beverage at any given point in time the ACCRA data provide only one price measurement per city. Third, as Young and Bielinska-Kwapisz (2002a, 2002b) point out, the ACCRA price data probably contain substantial measurement error, in part because members of local chambers of commerce are responsible for collecting and reporting the data. Despite these limitations, Young and Bielinska-Kwapisz (2002a) take an important step by directly examining the link between alcohol taxes and prices.

In a similar study, Baker and Brechling (1992) use time series data from the United Kingdom to estimate the impact of excise duties on the prices of beer, wine, spirits, tobacco, and petrol. They can not reject the hypothesis that taxes on beer, spirits and petrol were fully passed through to prices, while they find evidence of over shifting of the wine tax and under shifting of the tobacco tax. Thus the findings of Baker and Brechling are only partly consistent with Young and Bielinska-Kwapisz's estimates that alcohol taxes are over-shifted. The larger research literature that estimates the impact of cigarette excise taxes on prices also has mixed findings, with some support for modest over shifting of taxes in U.S. and European cigarette markets (Barzel 1976, Johnson 1978, Sumner and Ward 1981, Keeler et al. 1996, and Delipalla and O'Donnell 2001). In contrast, Poterba (1996) finds that retail clothing prices rise by approximately the amount of a sales tax. Besley and Rosen (1999) find similar results consistent with competitive markets ($\alpha = 1$) for Big Macs, eggs, Kleenex, and (ironically) Monopoly games. However, for more than half of the commodities they study, Besley and Rosen find evidence of over shifting.

3. Data on Alcohol Beverage Prices in Alaska

The core data for these analyses come from telephone surveys of Alaskan retail

establishments licensed to serve alcohol. The survey utilized computer-assisted telephone interviewing (CATI) techniques to collect pricing information from on-premise and off-premise alcohol retailers throughout the state of Alaska.¹ Any respondent familiar with the alcohol prices at the establishment was eligible to participate in the study. The telephone interviews lasted an average of 13 minutes.

Two waves of surveys provide measures of alcoholic beverage prices before and after the October 1, 2002 tax hike. Data collection for the first wave took place over a 32-day period from August 28 through September 28, 2002. Data collection for the second wave took place about a year later, from September 26 to October 20, 2003. The second wave surveys were conducted during the same time of the year to avoid any seasonality effects on alcoholic beverage prices. (For example, the State of Alaska Advisory Board on Alcoholism and Drug Abuse (2000) estimates that about 10 percent of Alaska's alcohol consumption is related to the visitor industry, which is highly seasonal.) The full impact of the tax hike on prices should be evident by the Fall 2003, given Young and Bielinska-Kwapisz's (2002a) evidence that the full impact of taxes on alcoholic beverage prices occurs within three months.

The survey sample was drawn from 1,320 alcohol license records obtained from the State of Alaska's Alcoholic Beverage Control Board. Removal of duplicate records resulted in a universe of 1,242 licensed establishments for which calls were attempted. Of the 1,242 unduplicated license records, first wave interviews were completed for 538 (43.3%). 367 calls,

¹Through sub-contracts from Cornell University and the NBER to the Prevention Research Center, Paul Gruenewald and Andrew Treno oversaw the design and administration of the surveys. The surveys were conducted by the survey firm, Population Research Systems. Treno *et al.* (2004) discuss the survey methods in more detail and conduct additional analysis of the data from the first wave.

representing 29.5% of all attempted contacts, resulted in refusals to participate in the survey; there were a number of reasons for the other non-interviews.² Of the 538 establishments that completed first wave surveys, 405 were successfully re-contacted and completed second wave surveys.

Of the 538 completed first wave surveys, 426 (79.1%) were characterized by interviewees as on-premise outlets and 112 (20.9%) as off-premise establishments. This compares to 71.8% on-premise and 28.2% off-premise in the total population of outlets in Alaska. The on-premise outlets were most commonly described as bars (20.4% of all interviews) or restaurants (42.4%). Almost half of off-premise establishments were characterized as liquor stores (9.9% of all interviews). Among on-premise establishments, 100.0% serve beer, 90.8% serve wine by the glass, and 63.4% sell liquor. For the off-premise outlets, 96.4% sell beer, 95.5% sell wine, and 92.9% sell liquor. Many of these outlets are quite small. For example, about half of the off-premise establishments carry three or fewer brands of beer. Additionally, these establishments are fairly concentrated geographically: 26.4% of establishments in our survey are in Anchorage, 9.1% are in Fairbanks, and 5.8% are in Juneau. This compares to 25.6%, 9.3%, and 4.0% in the total population of outlets. Most cities represented in the sample have two or fewer establishments, with the mode being one.

On-premise prices were collected for individual servings of a 12 ounce can or bottle for beer, a typical glass for wine and a standard shot for spirits, where the serving size of wine and

²There were 67 records whose phone numbers were not working, 59 where a respondent was never available, 57 deemed not eligible, 48 with no answer, 28 connected to an answering machine, 18 connected to beepers/fax/modems, 16 that were always busy, 16 with a language barrier, 15 residential phones, and 13 phone numbers that were disconnected.

spirits is reported by the respondent. Off-premise calculations were based on 6 packs of beer, 750 ml bottles of wine and 750 ml bottles of spirits. The prices of the eight best-selling brands of beer in the U.S. were collected: Budweiser, Bud Light, Coors Light, Miller Lite, Natural Light, Busch, Corona Extra, and Heineken. Similarly, the prices of the best-selling brands of spirits were collected: Jack Daniel's Bourbon, Jim Beam Bourbon, Bacardi Rum, Smirnoff Vodka, Absolut Vodka, and Jose Cuervo Tequila / Cuervo 1800. Because wine sales are typically split among a wide variety of brands and varieties, the survey requested only the price of each establishment's most frequently sold brand.

4. Results

For our calculations of product-specific rates of tax pass-through, the unit of observation is an establishment. The rate of tax pass-through for each product is calculated for the sample of establishments that provided a price for the beverage in question in both survey waves. As a result, the sample size varies across products; for example, 267 on-premise establishments provided prices of Budweiser in both waves, but only 144 establishments provided prices for Corona and only 1 on-premise establishment provided prices for Busch. In most cases where prices of a given brand are missing, it is because establishments simply did not carry the brand in either wave.

The real price hike between the waves is calculated as the difference between the second price and the inflation-adjusted first wave price. Based on the all items Consumer Price Index for the western region, inflation was estimated to be about 3 percent between the waves.³

The tax pass-through rate is calculated by dividing the real price change by the amount of

³The all items CPI for Anchorage implies a very similar inflation rate.

the tax hike for the beverage and quantity in question.

Table 1 presents the average baseline price from the first wave, the average price hike, and the mean and median tax pass-through rate. The median is presented as well as the mean in order to examine the influence of outliers, which represent establishments that reported either large price increases or decreases between the waves.

For virtually all cases, the mean and median rates of tax pass-through are substantially over 1, suggesting that taxes are more than fully passed through to prices. For both on-premise and off-premise establishments, for many brands of beer the mean and median pass-through rates are around 2. For off-premise establishments the mean and median pass-through rates are also around 2 for many brands of spirits. But for on-premise wine and on-premise spirits the pass-through rates are even higher and tend to be closer to 4.

To further explore the pass-through process, we estimated product-specific simple regressions of the form: Real price hike = $a + b$ (baseline price). As is typical in the U.S., rather than an ad valorem tax the Alaskan alcohol tax is an excise tax based on the quantity of the beverage purchased. As a result, in a simple model of tax pass-through the real price hike in response to a tax hike should be unrelated to the baseline price, implying that b should be zero. The constant term divided by the tax hike amount would then provide an estimate of the rate of tax pass-through.

The results of the regressions are presented in Table 2. Contrary to the simple model of pass-through, the estimated parameter on the baseline price is always negative and statistically significant. This implies that the establishments that charged higher prices for a given product, e.g. on-premise Budweiser, passed through less of the tax hike to their customers. In fact, if the

regression equations are evaluated at the maximum observed baseline prices, the predicted price hikes are about zero for most products. Conversely, the predicted price hikes for the establishments that charged the lowest observed prices imply rates of tax pass-through even higher than the mean and median rates reported in Table 1.

5. Discussion

The preliminary results suggest that alcohol taxes are more than fully passed through to beverage prices. The general pattern of results is consistent with the limited evidence from earlier studies. In addition, this study provides the first evidence that taxes are over-shifted in both on-premise and off-premise establishments, and that the pass-through patterns are similar across most popular brands of beer, wine, and spirits. An important caveat is that the preliminary estimates of pass-through depend upon assumptions about the general price inflation in Alaska between Fall 2002 and Fall 2003. Available evidence suggests that over this time period inflation was low (around 3 percent) in Anchorage and the western region of the U.S. However, the Bureau of Labor Statistics does not provide measures of inflation specific to other parts of Alaska. The apparent high rates of tax pass-through in some establishments might actually reflect mis-measured inflation.

In perfectly competitive markets with constant marginal costs, taxes are predicted to be shifted one-for-one to prices. Therefore, the preliminary results tend to suggest that as a whole, local alcohol beverage markets in Alaska should not be characterized as perfectly competitive. However, there is substantial heterogeneity in the calculated pass-through rates across establishments, so there may be geographic markets or market segments in which the rate of tax pass-through is closer to one. Alaska is a useful laboratory to study local retail markets for

alcoholic beverages. Local markets range in size from Anchorage, which has hundreds of outlets and a relatively high outlet density, to many small and remote localities where a small number of retailers have substantial local market power. In future work we will test predictions from industrial organization and public economics, that the tax hike was passed through to prices at different rates in local markets with different degrees of competition.

The preliminary results in Table 2 are suggestive evidence of the importance of market competition on the rate of tax pass-through. The regression results reported in Table 2 show a consistent pattern: establishments that charged a higher baseline price passed less of the tax hike through to prices. The observed baseline prices are equilibrium prices that emerged from a variety of local markets. As such, the fact that some establishments charge higher prices could reflect their local market power. If these establishments are already charging prices near or at the monopoly profit-maximizing level, their incentive to increase prices in response to the tax hike could be limited as they move into the elastic region of the consumer demand curve. While this interpretation is a possible explanation for the low rates of pass-through at high prices, it does not provide a complete explanation of why the low-price establishments appear to substantially over-shift the tax hike to prices. In our future work we plan to use measures of competition, such as the Herfindahl index, rather than use the observed baseline price as a possible proxy for the degree of competition.

If the preliminary results that alcohol taxes are more than fully passed through to prices are robust, they are also important for policy. First, most econometric studies of alcohol consumption and alcohol-related problems fail to estimate all of the links in the chain of causality running from the policy tool of taxes to prices to alcohol consumption patterns to

public health outcomes. By providing evidence about one of the structural relationships in the chain of causality, the new results complement the reduced-form approach used in many previous studies.

Second, the new evidence on the extent to which taxes are passed through to prices may also help reconcile evidence that very heavy drinkers are not responsive to higher prices with evidence in some studies of a very strong tax-responsiveness of traffic fatalities. Part of the explanation may be that tax increases reduce drunk driving incidents occurring among those who are not very heavy drinkers. The distinction between alcohol taxes and prices may be another piece of the puzzle. Some, but not all, of the studies that find relatively weaker effects estimate the relationship between alcohol outcomes and prices (e.g., Sloan et al. 1994, Manning et al. 1995, Kenkel 1996), while some of the strongest effects emerge in studies that estimate the relationship between alcohol outcomes and beer taxes (e.g., Chaloupka, Saffer and Grossman 1993). As the formula given above for the relationship between the elasticities η_{TAX} and η_{PRICE} shows, the partially conflicting results are easier to reconcile if beer taxes are more than fully passed through to prices.

A third contribution of this study is to provide a more complete understanding of the role taxes can play in improving public health. For example, prior to this study we are unaware of any evidence about the extent to which alcohol tax hikes are passed through to prices charged at on-premise establishments. Because consumption at on-premise establishments may be more likely to result in an adverse outcomes such as drunk driving, such evidence is needed to design the most effective policies.

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Table 1: Product-Specific Rates of Tax Pass-Through

Product	Average base price	Average real price hike	Average pass-thru rate	Median pass-thru rate
On-premise Beer (12 ounce can or bottle; tax hike = \$0.07)				
Budweiser (N=267)	\$3.05	\$0.15	2.29	2.69
Bud Light (N=252)	\$3.05	\$0.16	2.41	2.69
Coors (N=212)	\$3.02	\$0.17	2.50	2.69
Miller (N=236)	\$3.04	\$0.15	2.21	2.69
Natural (N=1)	\$2.75	\$0.19	2.77	2.77
Busch (N=1)	\$2.50	-\$0.06	-0.848	-0.848
Corona (N=144)	\$3.70	\$0.14	2.12	2.43
Heineken (N=215)	\$3.73	\$0.13	1.96	2.35
Off-premise Beer (6-pack of 12 ounce cans or bottles; tax hike = \$0.41)				
Budweiser (N=64)	\$6.28	\$0.87	2.14	1.76
Bud Light (N=61)	\$6.14	\$0.82	2.03	1.66
Coors (N=52)	\$6.23	\$0.71	1.75	2.13
Miller (N=53)	\$6.27	\$0.35	0.87	1.37
Natural (N=8)	\$6.30	\$1.72	4.26	4.70
Busch (N=8)	\$6.80	\$1.54	3.81	3.90
Corona (N=50)	\$9.28	\$0.68	1.67	1.96
Heineken (N=58)	\$9.43	\$0.64	1.57	1.90

Table 1: Product-Specific Rates of Tax Pass-Through (continued)

Product	Average base price	Average real price hike	Average pass-thru rate	Median pass-thru rate
On-premise Wine (6 ounce glass; tax hike = \$0.08)				
White (N=182)	\$3.85	\$0.25	3.27	2.27
Red (N=180)	\$3.98	\$0.32	4.19	2.12
On-premise Spirits (1 ounce shot; tax hike = \$0.05)				
Jack Daniels (N=180)	\$4.08	\$0.21	3.90	3.04
Jim Beam (N=176)	\$3.94	\$0.17	3.24	3.04
Bacardi (N=189)	\$3.89	\$0.21	3.82	3.15
Smirnoff (N=149)	\$3.92	\$0.21	3.83	3.04
Absolut (N=156)	\$4.25	\$0.23	4.27	2.94
Jose Cuervo (N=167)	\$4.21	\$0.08	1.46	2.73
Off-premise Spirits (750 ml bottle: tax hike = \$1.37)				
Jack Daniels (N=45)	\$21.17	\$2.80	2.05	2.23
Jim Beam (N=50)	\$15.91	\$2.57	1.88	1.96
Bacardi (N=62)	\$14.70	\$2.44	1.79	1.83
Smirnoff (N=54)	\$14.39	\$2.38	1.74	1.95
Absolut (N=42)	\$23.59	\$2.96	2.17	1.81
Jose Cuervo (N=47)	\$22.20	\$3.04	2.22	2.53

Table 2: Regression results: Real price hike = a + b (base price)

Product	a (t-ratio)	b (t-ratio)
On-premise Beer (12 ounce can or bottle)		
Budweiser (N=267)	0.7296 (5.70)	-0.1887 (4.53)
Bud Light (N=252)	0.8541 (5.29)	-0.2269 (4.32)
Coors (N=212)	0.8321 (5.68)	-0.2196 (4.57)
Miller (N=236)	0.8946 (6.29)	-0.2451 (5.29)
Corona (N=144)	0.5232 (2.41)	-0.1027 (1.76)
Heineken (N=215)	0.9556 (5.41)	-0.2207 (4.70)
Off-premise Beer (6-pack of 12 ounce cans or bottles)		
Budweiser (N=64)	0.4610 (0.67)	0.0646 (0.67)
Bud Light (N=61)	1.5807 (3.54)	-0.1234 (1.75)
Coors (N=52)	2.0390 (4.26)	-0.2138 (2.91)
Miller (N=53)	5.620 (7.58)	-0.8403 (7.28)
Corona (N=50)	6.095 (4.58)	-0.5840 (4.16)
Heineken (N=58)	3.458 (4.44)	-0.2995 (3.69)

Table 2: Regression results: Real price hike = a + b (base price)

On-premise Wine (6 ounce glass; tax hike = \$0.08)		
White	1.2708 (3.38)	-0.2642 (2.80)
Red	1.3762 (3.45)	-0.2644 (2.73)
On-premise Spirits (1 ounce shot; tax hike = \$0.05)		
Jack Daniels (N=180)	1.1632 (4.88)	-0.2334 (4.05)
Jim Beam (N=176)	1.0101 (5.03)	-0.2118 (4.22)
Bacardi (N=189)	1.1989 (6.69)	-0.2556 (5.62)
Smirnoff (N=149)	1.4031 (5.82)	-0.3051 (5.03)
Absolut (N=156)	1.8881 (7.11)	-0.3899 (6.32)
Jose Cuervo (N=167)	1.9315 (8.16)	-0.4397 (7.95)
Off-premise Spirits (750 ml bottle: tax hike = \$1.37)		
Jack Daniels (N=45)	12.4934 (3.09)	-0.4578 (2.42)
Jim Beam (N=50)	7.6243 (4.02)	-0.3174 (2.69)
Bacardi (N=62)	8.2234 (7.19)	-0.3939 (5.17)
Smirnoff (N=54)	7.6964 (4.55)	-0.3694 (3.17)
Absolut (N=42)	17.1822 (5.65)	-0.6026 (4.76)
Jose Cuervo (N=47)	13.5296 (4.34)	-0.4726 (3.43)

