

***Impact of the Highly Regulated Wholesale and
Retail Alcoholic Beverage Markets in Minnesota***

Prepared for

Minnesota Grocers Association

By

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TABLE OF CONTENTS

I. INTRODUCTION	1
II. MINNESOTA PRICES AVERAGE 17.5% ABOVE WISCONSIN.....	3
III. MINNESOTA HOUSEHOLDS PAY \$444 MILLION EXTRA ALCOHOLIC BEVERAGE COSTS	6
IV. APPENDIX ON METHODOLOGY	8

I. Introduction

The Minnesota Grocers Association asked American Economics Group (AEG) to examine the wholesale and retail distribution of liquor, wine and beer in Minnesota to determine if the state's highly regulated environment imposed higher costs on Minnesota households.

We found those Minnesotans who drink are paying on average 17.5% too much for their beverages. We also found that prices varied greatly across the state, with households outside the Twin Cities paying an average of seven percent more for alcoholic beverages than other Minnesota households. Thus, many residents of Minnesota's rural areas are paying over 20% more for their alcohol than they would in a truly competitive environment.

The monopoly tax created by these differentials that are the creature of the state's regulations total \$444.3 million. This is the extra cash Minnesota households paid for their liquor, wine and beer in 2004. Only a portion of this money finds its way to state and local government. Much of the rest adds to the monopoly profits of the lucky few wholesale distributors who, absent serious competition, simply mark up their prices to put more revenue in their own pockets.

This study augments a previous study¹ AEG conducted for the Food Marketing Institute on how the sale of wine in food stores would impact existing liquor stores. We found that states such as Minnesota, where food-store sales are prohibited, have fewer wine outlets per capita and therefore underserve households.

Allowing food stores to sell wine would increase wine sales generally and boost the economy of Minnesota. However, the state's existing wholesale distribution scheme creates a near-monopoly that increases costs to consumers via restrictive market practices, non-competitive pricing and limited selection of products. Even if retailing were made competitive in Minnesota, the stranglehold by the few wholesalers on the supply of alcoholic beverages would continue to generate monopoly profits for them by forcing higher costs on the retailers. Thus, consumer would continue to pay a monopoly "tax."

Restrictions on licensing confers monopoly profits on the few wholesale distributors allowed to operate

In Minnesota, there are only six entities licensed to distribute distilled spirits at wholesale and collect the state's excise tax on liquor, 47 distributors of wine and 132 distributors of beer who supply all retailers throughout the state. This uncompetitive restriction of distributors, unlike most states, is worsened by the added limitation on the number and type of retail outlets. There are far fewer stores per capita than other states, and most outlets are government operated without local competition.

¹"State Licensing of Wine Sales in food Stores: Impact on Existing Liquor stores, with Minnesota Analysis," American economics Group, Inc., May 2004.

The state's retail establishment is dominated by the existence of municipal liquor stores in 230 cities statewide. Instead of the free and open competition that exists as the American way for most businesses, Minnesota joins the most restricting states at all levels of operations. In addition, the state imposes excise and sales taxes higher than most other states and the neighboring state of Wisconsin, a model of competition. Only the Twin Cities area has any significant competition and somewhat lower (but still high) pricing vis-à-vis all other economic regions of Minnesota.

Three elements of distribution and taxation create Minnesota's significantly higher beverage prices. They are:

1. The near-monopoly status (and monopoly profits) granted to a handful of wholesalers,
2. The restriction in the number and types of retail outlets, and
3. The relatively high excise and sales taxes on alcoholic beverages.

In combination, these three elements impose what has been called a monopoly "tax" on consumers in the form of higher prices for liquor, wine and beer.

This report describes price comparisons between Minnesota and Wisconsin and additional comparisons between the Twin Cities economic region, which allows some competition, and the rest of state.

II. Minnesota Wholesalers and Retailers Reap Non-Competitive Profits

While Wisconsin regulates the sale of alcoholic beverages, its laws and regulations are far less restrictive than in Minnesota and it imposes lower taxes on all three major beverages, liquor, wine and beer. Wisconsin has 1,941 retail liquor outlets and 1,877 wine outlets compared to the 981 in Minnesota that sell both liquor and beer for off-premises consumption.

The difference is more striking on a per capita basis, because Wisconsin has nearly double the number at 51.7 liquor stores per 100,000 population and 50.0 for wine. This compares with only 28.7 outlets per 100,000 in Minnesota. Wisconsin allows both greater competition, resulting in more outlets, and also allows wine sales in food stores.²

Taxes on alcohol are also lower in Wisconsin. Minnesota's neighbor taxes strong beer at 6 cents per gallon compared to 15 cents in Minnesota, wine at 25 cents per gallon compared to 30 cents and liquor at \$5.03 per gallon compared to \$3.25 in Minnesota.

Figure II-1 demonstrates the combined impact on wine prices of Minnesota's monopolistic wholesale distribution system, its limited retail competition and its higher taxes.

Figure II-1

Typical Wine Price: Minnesota v. Wisconsin				
750 ml Bottle Table Wine				
	Minnesota	Wisconsin	Difference	Percent difference
Producer Price	\$4.95	\$4.95	\$0.00	0.0%
Federal Excise Tax	\$0.24	\$0.24	\$0.00	0.0%
Cost to Wholesaler	\$5.19	\$5.19	\$0.00	0.0%
State Excise Tax	\$0.06	\$0.05	\$0.01	20.0%
Wholesaler Total Cost	\$5.25	\$5.24	\$0.01	0.2%
Wholesaler Mark-up	\$2.09	\$1.31	\$0.78	59.9%
Total Cost to Retailer	\$7.34	\$6.55	\$0.79	12.1%
Retailer Mark-up	\$2.25	\$1.62	\$0.63	39.2%
Retail price	\$9.59	\$8.16	\$1.43	17.5%
Sales Tax	\$0.86	\$0.41	\$0.46	111.5%
Full Price to Customer	\$10.45	\$8.57	\$1.88	22.0%

² See AEG study, op. cit., for a discussion on the beneficial economic impacts of expanding wine sales to food stores and also the limited effect it will have on the profitability of existing liquor stores.

The table compares the price of a typical bottle of wine in Minnesota and Wisconsin. The household purchasing the 750ml bottle at retail pays \$10.45 in Minnesota, but only \$8.57 in Wisconsin, including all taxes. The table itemizes each component of price. In both states, the producer's price (including transportation) is increased by the federal tax of 24 cents to \$5.19, representing the equal cost to a wholesaler in both states. After that the pricing diverges dramatically.

First, Minnesota adds a 6 cent excise tax while Wisconsin adds 5 cents. Next, the monopolistic wholesaler in Minnesota marks up the bottle by \$2.09 compared to the \$1.31 markup in Wisconsin, a 59.9% greater markup, the difference going right to profit. The total cost to the retailer is \$7.34 in Minnesota compared to \$6.55 in Wisconsin.

The Minnesota retailer (usually a government run municipal liquor store) marks the bottle up another \$2.25, while the competitive store in Wisconsin marks it up only \$1.62. Thus, the Minnesota household pays \$10.45 per bottle, which is the retailer's price of \$9.59 plus Minnesota's 9% sales tax. The household in Wisconsin pays only \$8.16 plus a 41 cent sales tax totaling \$8.57. The consumer in Minnesota bears an added cost of \$1.88 or 22% more, entirely created by the state's restrictive regulation and higher tax.

Figure II-2

Contribution to Higher Prices in Minnesota 750 ml Bottle Table Wine		
	Amount Minnesota is Higher	Percent Share of Higher Minnesota Price
State Excise Tax	\$0.01	0.5%
Wholesaler Total Cost		
Wholesaler Mark-up	\$0.78	41.6%
Total Cost to Retailer		
Retailer Mark-up	\$0.63	33.7%
Retail price		
Sales Tax	\$0.46	24.2%
Higher Minnesota Price to Customer	\$1.88	100.0%

Figure II-2 focuses on each component of the price difference between Minnesota and Wisconsin, the model for a more competitive distribution system. The \$1.88 difference in price between the two states consists of four elements: The amount of higher excise tax, one cent per bottle, represents one-half of one percent of the difference. The 78 cents higher wholesaler markup is 41.6% of the difference. The 63 cent higher retailer markup 63 cents is 33.7% of the difference, and the 46 cent higher sales tax is 24.2% of the difference.

The entire \$1.88 higher Minnesota price is caused by the state's regulation and higher taxes. However, the entire amount does not benefit the state by flowing into its coffers as a benefit to all. The wholesaler profits by using the protection of state restrictions to charge 78 cents per bottle over a competitive markup. The retailer acts similarly by adding 63 cents, although some portion of this may flow to local governments that share in the "profits" of their liquor stores. Why does not all the excess retail markup flow to government? The reason is the lower efficiency of many of the municipal liquor stores.

In competitive areas surrounding the Twin cities, Minnesota's municipal liquor stores operate with far lower expenses than in areas with less competition. In areas of low competition around the state, the expense ratio averages 31.4% while in areas of high competition it averages 19.9%, as seen in figure II-2's top panel. In more rural areas store size is smaller and inherently less efficient; this explains part of the difference in expenses as a percent of sales (the operating expense ratio). However, part of the higher expenses is caused by lack of competition, leaving stores to operate with little pressure on costs and without respect to efficiently sizing their operations.³

Figure II-2

Operating Expense Ratio Minnesota Municipal Liquor Stores 2003	
Average of All Stores	
Low Competition Areas	31.4%
High Competition Areas	19.9%

Gross Operating Margin Minnesota Municipal Liquor Stores 2003	
Average of All Stores	
Low Competition Areas	34.6%
High Competition Areas	24.7%

The bottom panel compares average markups on alcoholic beverage products for stores in areas of low competition versus the more competitive Twin Cities area. There is an average 10% added markup where competition is low.

³ While AEG has not conducted an employment analysis of Minnesota's municipal liquor stores, we have found in other studies that government business entities may hire more employees than similarly sized competitive businesses.

III. Minnesota Households Pay \$444 Million Extra Alcoholic Beverage Costs

The combination of monopoly wholesale distribution, retail stores operating without significant competition and higher Minnesota excise and sales taxes add extra cost to households that purchase alcoholic beverages. Dubbed the “monopoly tax,” the extra costs imposed added \$444.3 million to the over \$2,000 million Minnesota households spent on liquor, wine and beer during 2004.

Figure III-1 summarizes the breakdown among each major category of beverage: distilled spirits cost \$136 million more than if Wisconsin-style competition were allowed. Wine cost consumers an additional \$91.4 million, and Minnesota’s beer drinkers paid \$216.8 million more than they should have paid.

Figure III-1

Extra Cost to Consumer of Minnesota's Non-Competitive Distribution of Alcoholic Beverages		
	Extra Cost in 2004	Percent of Total
Distilled Spirits	\$135,988,838	30.6%
Wine	\$91,495,215	20.6%
Beer	\$216,777,170	48.8%
Total Extra Cost	\$444,261,223	100.0%

Figure III-2

Contribution to Extra Cost to Consumer of Minnesota's Non-Competitive Distribution of Alcoholic Beverages		
	Extra Cost in 2004	Percent of Total
Restrictive Wholesale Distribution	\$165,611,476	37.3%
Non-Competitive Retail Distribution	\$155,016,436	34.9%
Above Average Taxes	\$123,633,311	27.8%
Total Extra Cost	\$444,261,223	100.0%

Figure III-2 shows who gains from household’s extra cost. Approximately 37.3%, equal to \$165.6 million, of the total \$444.3 million in unnecessary cost to the consumer was caused by the monopoly power that restrictive licensing gave to a small number of

distributors. The non-competitive retail environment accounted for 34.9% of the total added cost, about \$155.0 million. Finally, tax rates above those in Wisconsin added \$123.6 million more, about 27.8% of the extra cost Minnesota households paid in 2004.

IV. Appendix on Methodology

Profit margins relative to size

Multiple regression is a technique often employed to analyze the influence each of a list of factors exerts on another. For example, a regression equation might express how per capita liquor sales change from state to state depending upon the population characteristics of each state, income, average liquor prices and taxes⁴.

The first sets of regressions are based on data from the Minnesota tax audit,⁵ which contains information for 230 municipalities and major economic regions of Minnesota, whose population ranges from 33 to 59,325. (The area with only 33 people is not typical, so for this analysis we considered areas with population of 200 at the low end and 50,000 at the high end. However, the results do hold for any population figures within the overall range.

We would expect to find that prices and costs are lower in more densely populated areas for two reasons: costs would be lower because of economies of scale, and prices would be lower because of greater competition. That is indeed what the results show in the regression equations based on 226 observations.

While size reduces prices and costs, it does so in a non-linear fashion. The most logical theoretical relationship would be that changes are proportional to the percentage increase, rather than the absolute increase, in size, so the logarithm of population was used as an independent variable in the equation. Empirically, this specification also proved superior to a number of alternative specifications.

The other independent variable is per capita sales – the ratio of sales to population. Because this ratio fluctuates within a fairly narrow range, issues of heteroscedasticity do not arise, and it was not necessary or logical to take the logarithm of this variable. Its inclusion signifies that prices and costs are expected to be lower in areas where per capita sales are higher, as well as where population is higher.

The following equation was estimated for gross profit margins:

$$(1) \text{ Gross Margin} = 72.77 - 0.00175 \text{ Sales/Pop} - 5.170 \log (\text{Pop})$$

$$(2.5) \qquad (12.1)$$

Both variables are statistically significant at the 1% level, as indicated by the t-ratios, shown below each coefficient.

Because the results are in a mixed log-linear relationship, it may be difficult to understand the relevant results without further discussion. Hence, we use the value of the elasticities, the percentage change in the dependent variable associated with a

⁴ The AEG study, op. cit., describes regression and its limitation where crossborder sales are prevalent.

⁵ Analysis of Municipal Liquor Store Operations for the Year Ended December 31, 2003, Office of The State Auditor State of Minnesota.

given percentage change in an independent variable, at the mean value of the variables. We also use the percentage change in gross margin that would be expected between areas of different size.

Consider a case where the population in a given area is twice the mean value, in which case its logarithm would be 3.8945. The log of population would increase by 0.3010. Based on the above regression, the gross margin would fall by 1.55 points (e.g., from 36.55 to 35.00), assuming per capita sales and expenses also remained the same.

Using similar calculations, if per capita sales were to double, margins would decline by 1.33 points. This regression reflects only the markup between the cost of sales and the retail price.

Price comparisons between Minnesota and Wisconsin

The results, above, focus on the price differentials by region within Minnesota, but they do not address the issue of how prices might vary between Minnesota and a state that is less restrictive and allows competition to flourish.

For this part of the study, data were collected on popular brands of wine and liquor for various locations in Minnesota and in Wisconsin. Locations in Minnesota were assigned a code of 1, 2, or 3, depending on the degree of competitiveness reflected by profit margins. Regressions were then calculated as a function of the location in Minnesota or Wisconsin, competitiveness rating, beverage type and bottle size, using dummy variables where appropriate.

Regression Results for Minnesota and Wisconsin Comparisons					
	MN code coefficient	Avg Price	%Higher in Rural	WI code coefficient	%lower in WI
<i>SPIRITS (1.75 liter)</i>					
Seagram 7	0.94	19.28	4.9	3.64	18.9
Gordon's Gin	1.18	16.96	7.0	5.31	31.3
Smirnoff	1.34	18.32	7.3	0.62	3.4
Absolut	2.48	31.97	7.8	3.33	10.4
Bacardi Gold	0.96	20.31	4.7	1.88	9.3
<i>WINE (750 ml)</i>					
Sutter Home	0.31	7.09	4.4	2.55	36.0
Beringer	1.28	10.46	12.2	1.61	15.4
Mondavi	0.86	9.81	8.8	2.65	27.0
Clos du Bois	0.64	11.67	5.5	0.72	6.2
Average			6.9		17.5

The results show that wine and liquor prices in Minnesota are an average of 6.8% higher in rural than in competitive urban areas. Furthermore, and more to the point, average prices are 17.5% higher in Minnesota on average than in Wisconsin.

The 6.8% higher price increase in rural versus urban areas in Minnesota is somewhat below the 12.4% figure calculated using the first set of regressions and below the weighted average differential of about 10%. It is likely that the 6.8% figure represents a lower boundary for the price differential between urban and rural areas; the actual varying by beverage and brand.

The 17.5% price differential with Wisconsin provides a clearer example of the degree to which Minnesota regulations are likely to result in higher prices to consumers.