THE KANSAS RETAIL LIQUOR INDUSTRY

Final Report to the Department of Revenue

State of Kansas

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INTRODUCTION

The ABC Board of Review, a division of the Department of Revenue, State of Kansas, requested a review and analysis of the factors to be used and considered in establishing minimum price markups for alcoholic liquor and the effects of such markups. Arrangements were made with the University of Kansas, through the Institute for Public Policy and Business Research, to conduct the review and analysis. Dr. Darwin W. Daicoff, Department of Economics, and Dr. Douglas C. Houston, School of Business, were the prinicipal investigators; major assistance was provided by Ms. Julie Morgan, economics graduate student.

This report is divided into three major sections. The first major section is fairly brief; it provides information, primarily consumption data and analyses, on the national liquor industry. Because the Kansas retail liquor market is the focus of this study, comparisons are made between Kansas and other license states and between Kansas and the nation.

Section II, the report's principle component, presents a detailed examination of Kansas liquor retailing. Included is a discussion of the historical trend of retail liquor licenses for both the State and major counties. Sales (by product, by year, and by county) also are analyzed. A comparison of liquor prices in Kansas and other states is provided. A statistical analysis, similar to that used to analyze interstate variations in per capita liquor consumption, is presented for Kansas and counties or groups of counties in Kansas. Kansas liquor retailers and wholesalers are examined as to profitability. A review of one recent example of the interrelation between their two levels of the industry is included.

The final major section of this report contains a review of publications

relating to the industry. Both scholarly articles and public (state) reports are included. Additionally, this section presents a few findings related to specific items of concern to the Kansas retail liquor industry.

A final component of this report contains two elements. The first is a summary of principle findings. The second is a selected list of possible policy changes and a description of the likely consequences of the listed changes.

SECTION I

INTERSTATE COMPARISONS

There are various sources of data that permit a fairly detailed comparison of the Kansas retail liquor industry to the industry nationally. Three sets of information are relevant for this comparison--data for Kansas alone; data for all license states, including Kansas; and data for all states, including both license and control states. A number of statistics, for the most recent year available, follow.

Statistics	Units	Kansas	License States	United States
Consumption per capita	(1000 gal.)	1.238	2.155	2.181
Consumption per person (over age 20)	(1000 gal.)	1.863	3.263	3.317
Consumption Per Mean Household Income	(1000 gal./$)	152.1	468.0	427.9
Consumption Per Median Household Income	(1000 gal./$)	182.3	567.8	514.9
Consumption Per Mean Family Income	(1000 gal./$)	131.1	510.5	375.7
Consumption Per Travel Rank	(1000 gal.)	93	2,898	2,078
Consumption Per License	(1000 gal.)	1.29	1.80	2.07
Consumption Per Establishment	(1000 gal.)	3.80	12.88	16.24
Sales Per Establishment	($1000)	167	456	513
Establishments Per Capita	(1000 people)	.326	.198	.169
Employees Per Establishment	(number)	2.9	5.0	8.3
Payroll Per Establishment	($1000)	11.09	36.94	56.33
Payroll Per Employee	($1000)	3.78	7.23	7.96
Liquor Prices	($)	8.60	8.46	8.36

It can be concluded that liquor consumption (sales volume) in Kansas is relatively low when compared to the nation or to other license states. This is

observable if consumption is measured in terms of total population, population over 20 years of age, either of three measures of income, or the relative amount of travel into the State.

From these data, it also is clear that Kansas retail liquor outlets (licenses or establishments) are many and small. Their sales volume, number of employees, and payroll are much below those of retailers in other license states or the nation. In addition, Kansas retail liquor employees earn relatively small wages. The number of liquor establishments, in relation to population, is very high in Kansas--almost twice that of the nation. All this occurs in a Kansas market in which retail prices are relatively high.

A statistical analysis of the determinants of liquor consumption has been conducted for this study. In order to simplify the presentation, only summary findings are presented. The formulation of the multiple regression model is such that it seeks to account for the variation in per capita alcohol consumption among all the states and the District of Columbia. Standardized regression coefficients, listed below, are dimensionless and measure the contribution of each variable to explaining the variation of per capita consumption. It should be noted that the results presented below (and elsewhere in this report) meet the standard statistical requirements for a satisfactory analysis.

Variable	Standardized Coefficient
Number of Churches	- .323
Percentage of Church Attendance	- .239
Liquor Prices	- .259
Licenses Per Square Mile	+ .383
Per Capita Income	+ .344

This means that, when simultaneously considered, per capita alcohol consumption is positively influenced (is larger in states) with a greater

number of retail outlets per square miles and larger per capita incomes. It is negatively influenced (is smaller in states) with more churches, a greater portion of the population who attend church, and higher liquor prices. Then, if a state wanted to reduce consumption, it should move to reduce the number of retail liquor outlets and raise liquor prices. Reducing the number of licenses would be a bit more effective.

An equivalent analysis was conducted only for the license states, including Kansas. In this instance, there are 34 states; the following multiple regression results were produced.

Variable	Standardized Coefficient
Number of Churches	- .678
Square Miles	+ .333
Travel Rank	- .528
Establishments Per Square Mile	+ .679

In this instance, the price influence is absent; however, the influence of the other policy variable (outlets) retains its positive influence.

SECTION II

THE KANSAS LIQUOR INDUSTRY

This examination of the Kansas liquor industry concentrates on the retail segment of the industry. Licenses and sales (by product, by year, and by county) are examined. A liquor price comparison is offered as are a set of inter-Kansas multiple regressions. Profitability of retailers and wholesalers is taken up next. The section ends with a discussion of an instance of the interrelationship between retailers and wholesalers.

Licenses

The Division of Alcoholic Beverage Control, Kansas Department of Revenue maintains data on the number of liquor licenses, tax collections, sales, and alcohol law violations. As a consequence of disclosure restrictions, only part of these data are publicly available. Items which are relevant and available for the entire State and for major counties are discussed.

Table 1 contains historical data on the number of liquor licenses and applications by status. From 1965 to 1984, the number of retail licenses approved has doubled. In fact, for every year for which data are available, there has been an increase in the number of approvals. The number of denied, revoked, and reinstated licenses have remained approximately constant throughout the time period. In contrast, cancelled licenses increased 150 percent from 1965 to 1984. The number of now operating licenses (which was 1,104 in 1965 and 1,078 in 1984) reached its peak in 1977, when there were 1,211 licenses. Overall, the number of retail liquor licenses now operating may be described as being relatively constant over the first third of the time period, increased during the middle third, and decreased during the last

TABLE 1

Kansas Retail Liquor Licenses
Approved, Cancelled, Denied
Revoked, Reinstated and Now Operating
Calendar Year 1965-1984

Year	Approved	Cancelled	Denied	Revoked	Reinstated	Now Operating*
1965	3174	1988	302	90	8	1104
1966	3307	2133	306	91	8	1091
1967	3442	2266	310	92	8	1092
1968	-	-	-	-	-	1087
1969	-	-	-	-	-	1086
1970	-	-	-	-	-	1086
1971	4008	2819	319	95	9	1103
1972	-	-	-	-	-	1125
1973	-	-	-	-	-	1138
1974	-	-	-	-	-	1152
1975	-	-	-	-	-	1159
1976	4931	3643	326	107	10	1191
1977	5139	3832	329	109	12	1211
1978	5301	4001	334	109	12	1203
1979	5458	4173	339	113	12	1184
1980	5615	4348	339	119	12	1160
1981	5791	4557	339	122	12	1124
1982	5961	4741	339	122	12	1110
1983	6145	4944	340	123	13	1091
1984	6316	5124	342	126	13	1078

*Note: As of December 31 of each year.

Source: "Summary of Action Liquor Industry," No. S-12, Alcoholic Beverage Control Division, Kansas Department of Revenue, Topeka, Kansas, annual.

portion of the period. Since 1977, the number of retailers has declined each year. The decline for the seven year period has been nearly 11 percent.

The number of retail liquor licenses in some Kansas counties also can be examined. From 1976 to 1984, there were 14 counties with 20 or more establishments in any of the years, see Table 2. In 1984, licenses were concentrated in the following counties: Sedgwick, with 162 licenses; Johnson, 100 licenses; Wyandotte, 85 licenses; and Shawnee, 84 licenses. For most counties, for which data are available, there has been a decrease in the number of licenses from 1976 to 1984. The annual average compound rate of growth for the total number of licenses, Statewide, was -1.2 percent. Twelve of the 14 counties had growth rates equal to or greater than the decline recorded Statewide. One county, Douglas, had a smaller rate of the decline than the State; one county, Johnson, had a growth in the number of retail licenses.

Although the number of licenses changed during the 1976 to 1984 time period, for the counties under consideration, the percentage of total Kansas licenses operating in these counties has remained relatively constant, see Table 3. According to most recent data, Sedgwick county has 15 percent of the total; Johnson, Wyandotte, and Shawnee counties have nine, eight and seven percent, respectively. Each of the remaining counties has less than four percent of the total.

Sales by Product

Because the Kansas Liquor Gallonage Tax and Cereal Malt Beverage and Products Tax are based on physical volume, it is possible to use tax

TABLE 2

Kansas County* Retail Liquor Licenses
Now Operating and Growth Rate
Calendar Year 1976-1984

	1976	1977	1978	1979	1980	1981	1982	1983	1984	Growth Rate
Sedgwick	200	196	193	186	179	170	171	169	162	-2.6
Johnson	95	98	100	100	103	102	98	98	100	+0.6
Wyandotte	101	102	99	96	95	89	84	84	85	-2.1
Shawnee	88	88	90	88	84	82	82	74	74	-2.1
Reno	32	31	30	28	28	28	28	28	29	-1.2
Douglas	27	28	26	27	27	26	25	26	25	-1.0
Saline	32	33	33	31	30	27	25	25	25	-3.0
Barton	27	26	24	24	23	23	21	22	22	-2.5
Geary	24	25	25	26	25	22	21	21	21	-1.7
Montgomery	24	22	22	20	21	21	21	21	21	-1.7
Riley	24	24	25	22	21	21	23	22	21	-1.7
Ellis	23	23	23	21	21	20	20	21	20	-1.8
Leavenworth	21	21	20	21	21	20	21	19	18	-1.9
Crawford	18	20	20	20	19	17	16	14	15	-2.3
State	1191	1211	1203	1184	1160	1124	1110	1091	1078	-1.2

*Note: For counties with 20 or more establishments any year 1976-1984.

Source: "Retail Liquor Stores Operating as of December 31, by Counties," Alcoholic Beverage Control Division, Kansas Department of Revenue, Topeka, annual.

TABLE 3

Kansas County* Retail Liquor Licenses
Percent of Total Licenses in Each County
Calendar Year 1976-1984

	1976	1977	1978	1979	1980	1981	1982	1983	1984
Sedgwick	17	16	19	16	15	15	15	15	15
Johnson	9	8	10	8	9	9	9	9	9
Wyandotte	9	8	10	8	8	8	8	8	8
Shawnee	7	7	9	7	7	7	7	7	7
Reno	3	3	3	2	2	2	3	3	3
Douglas	2	2	3	2	2	2	2	2	2
Saline	3	3	3	3	3	2	2	2	2
Barton	2	2	2	2	2	2	2	2	2
Geary	2	2	2	2	2	2	2	2	2
Montgomery	2	2	2	2	2	2	2	2	2
Riley	2	2	2	2	2	2	2	2	2
Ellis	2	2	2	2	2	2	2	2	2
Leavenworth	2	2	2	2	2	2	2	2	2
Crawford	2	2	2	2	2	2	1	1	1
Total	62	61	71	60	60	59	59	59	59

*Note: For counties with 20 or more establishments any year 1976-1984.

Source: "Retail Liquor Stores Operating as of December 31, by County," Alcoholic Beverage Control Division, Kansas Department of Revenue, Topeka, Kansas, annual.

collections as data to quantify the physical volume of liquor sales. The fiscal year 1985 figures are:

Product	Sales (million gallons)
Alcohol and Spirits	3.003
Fortified Wine	.149
Light Wine	2.127
Strong Beer	21.978
CMB Beer	28.206
Total	55.463

From these data, it is clear that beer dominates the total physical volume of

Kansas liquor consumption. Because of the differences in alcohol content per gallon of liquor, the pure alcohol content of consumption is much less concentrated. But even here, about 55 percent of the total pure alcohol consumption is represented by beer--with slightly over 30 percent in strong beer and slightly less than 25 percent in CMB beer. By this measure (pure alcohol content), alcohol and spirits is the largest single category--representing about 37 percent of the total. The remainder, wine consumption, at about eight percent, is very small.

The time trend of consumption of alcohol products is fairly well known and can be characterized as (1) long-term growth and peak beer consumption in 1981 and irregular and modest decline since, (2) a regular and strong increase in light wine consumption, (3) a long-term decline in fortified wine consumption, and (4) peak alcohol and spirit consumption in 1982, but generally slow growth before and generally slow decline since.

Sales by Year

Kansas liquor sales for selected years since 1963 are shown in Table 4. Total sales increased yearly up to 1982 when they totaled nearly $221 million. In 1983 and 1984, sales declined; in 1985 there was a slight increase. On the basis of sales per retail license, again there was a rather regular increase up to 1982 (when an average of nearly $200 thousand sales per license was reached), declines in 1983 and 1984, and (because of the slight sales increase and a continuation of the decline in the number of licenses) a probable slight increase in 1985. Per capita Kansas retail sales also peaked in 1982 reaching nearly $92 per person. Since then, per capita sales have declined--to under $85 per person in 1985.

TABLE 4

Liquor Sales, Selected Years 1963-1985

Fiscal Year	Total Sales (million dollars)	Sales Per License (thousand dollars)	Sales Per Capita (dollars)
1963	52.312		
1970	74.827		33.27
1975	118.322		51.12
1980	196.623	169.5	83.19
1981	209.268	186.2	87.59
1982	220.859	199.0	91.69
1983	215.739	197.7	88.81
1984	211.902	196.6	86.47
1985	212.621		84.63

Source: ABC records, calculations described in text.

Sales by County

Total Kansas retail liquor sales are concentrated in a few counties. Sedgwick county has sales of $47.1 million, or 22.2 percent of the State total. The five counties with the largest sales (Sedgwick, Johnson, Wyandotte, Shawnee, and Douglas) have sales of $117.1 million or 55.3 percent of State sales. This concentration is further evident by noting that the 15 largest sales counties represent 73.7 percent of the State's $156.1 million sales.

This sales concentration is greater than the Kansas population or income concentration. Sedgwick county has 15.3 percent of State population, the top five counties have 43.9 percent, and the top 15 counties have 61.8 percent. Personal income is a bit more concentrated than population (17.3 percent in Sedgwick, 49.8 percent in the top five, and 67.1 percent in the top 15), but still less concentrated than liquor sales.

As shown in the following data, per capita liquor consumption (on a county basis) exhibits considerable variation; however, there is a concentration in the $40 to $80 range.

Dollar Per Capita Consumption	Number of Counties
0-19	7
20-39	9
40-59	30
60-79	33
80-99	12
100-119	10
120-139	3
140 or more	1

Relative to population, per capita sales range from $145.22 in Seward county to zero in the six "dry" counties. The four smallest positive sales per capita are less than $32 in Doniphan, Jewell, Ottawa, and Stafford counties. Other large per capita sales (besides Seward county), greater than $113, occurred in Geary, Finney, Sedgwick, and Ellis counties.

Not only are current sales concentrated, but also sales growth has been concentrated. Between 1963 and 1984, the Statewide increase was at a 6.9 percent annual average compound rate. The Sedgwick county growth (representing 22.5 percent of the total State growth over that time period) was at a 7.1 percent rate. The same top five counties, listed in Table 3, grew at an 8.1 percent rate and account for 58.9 percent of the total State growth. The top 15 counties grew at a 7.7 percent rate--for 69.4 percent of the State growth.

More recently, from 1980 to 1984, a similar concentration of the slower growth has been recorded. The Statewide growth rate was 1.9 percent. Johnson and Sedgwick counties are 4.5 and 2.9 percent, respectively--for 61.0 percent of the total State growth. Adding Shawnee and Finney counties brings the

representation to 75.3 percent of the State's growth of liquor sales.

Kansas counties can be placed in three groups. Region I includes the 40 counties bordering another state, Region II includes the 31 counties that are one county distant from the border, and Region III contains those 34 interior counties more than one county distant from the border. Per capita consumption similarly can be broken into three groups--the 29 counties with relatively low per capita consumption have sales of about $50 or less, the 42 counties with middle range consumption--about $50 to $70, and those 34 counties with high consumption--more than about $70. Given these classifications, the following tabulation can be produced.

	Per Capita Consumption			
Area	Low	Middle	High	Total
Region I (border)	13	19	8	40
Region II (2nd tier)	10	10	11	31
Region III (interior)	6	13	15	34
Total	29	42	34	105

Clearly, per capita consumption tends to be higher the further a county is distant from the State's border. While this phenomena is observable, its explanation is rather complicated.

It has been shown that there are considerable differences in liquor consumption among the Kansas counties. Part of the explanation is often offered in terms of prices of liquor in bordering states. As shown below, compared to Kansas, liquor prices are nearly equivalent in Nebraska, particularly low in Oklahoma, a bit low in Colorado, and somewhat low in Missouri. If price differentials encourage out-of-state purchases, one would expect per capita consumption in Kansas counties bordering Nebraska at about

the State average, very low in Kansas counties bordering Oklahoma, fairly to a bit low in counties bordering Colorado, and low to average in counties bordering Missouri. This is not the case.

An examination of the counties in Region I indicates:

	Per Capita Consumption			
Border With	Low	Middle	High	Total
Nebraska	6	7	0	13
Missouri	4	4	2	10
Oklahoma	4	6	4	7
Colorado	2	2	3	14
Total	16	19	9	44

Because the four corner counties border two states, the 44 total figure is four larger than the total number of border counties. Per capita consumption is low for Nebraska bordering counties; high for Missouri bordering counties; higher yet for Oklahoma bordering counties, and highest in Colorado bordering counties.

These findings are inconsistent with what was anticipated from the price differential analysis. In fact, the reason Region I counties have low per capita consumption is that the Kansas counties that border Nebraska have low consumption. It is not a Missouri phenomena, even though only the Kansas counties at the Missouri border face a metropolitan area across the State line.

Price Comparison

It is part of the conventional wisdom that retail liquor prices are high in Kansas. Two data sources provide statistical information on liquor prices at the state level, Liquor Handbook and DISCUS. The most recent data from the sources are:

Area	Average Liquor Prices Liquor Handbook	DISCUS
United States	8.16	8.36
Kansas	8.37	8.60
Missouri	7.35	7.54
Oklahoma	6.83	6.88
Colorado	8.08	8.24
Nebraska	8.45	8.61

DISCUS figures are generally larger than Liquor Handbook numbers; however, the two sources are fairly consistent between states. From the Liquor Handbook, liquor prices average $8.16 nationally (with an interstate range of $9.17 to $6.15); DISCUS figures are $8.36, with a range of $9.40 to $6.34. The Kansas price is 2.6 or 2.9 percent above the national price. Among the five states in the Kansas region, Kansas has the second highest prices, 7.1 or 7.9 percent higher than the five state average. From these data, it is clear that while Kansas is a state with relatively high prices, its prices are not the highest-nationally or regionally.

A further comparison of Kansas and Missouri prices has been made for this study. This was done to identify the source of the differential--is it at the wholesale or retail level of the industry? Selling prices were compared as of October 1985 for major brands and sizes of liquor. The selected items represent almost one third of the Kansas total case shipments. Wholesale case prices were found to be about 0.7 percent higher in Kansas and wholesale bottle prices were slightly less in Kansas than in Missouri. If the analysis is restricted to spirits, the differential is greater; case prices were about 1.9 percent higher in Kansas than in Missouri, bottle prices were 2.3 percent lower in Kansas. On the basis of these figures, higher retail liquor prices in

Kansas, as compared to Missouri, are not the result of the prices paid to wholesalers by Kansas retailers. What happens, must occur at the retail level.

Intra-Kansas Multiple Regressions

A statistical analysis, generally equivalent to the interstate analysis presented earlier in this report, was performed within Kansas. In this instance, again, the model seeks to account for the variation of per capita alcohol consumption, this time, between the 105 Kansas counties. The results are:

Variable	Standardized Coefficient
Liquor Licenses	+ 3.15
Legal Age Population	- 2.34
Mean Family Income	+ .301
Number of Churches	- .635
Percentage Urban	+ .410
Population Per Square Mile	- .219

Three of the variables (the number of liquor licenses, mean family income, and the percentage of population residing in urban areas) excerise a positive influence (increase) on per capita liquor consumption. An equal number of variables (legal age population, number of churches, and population per square mile) extend a negative influence (reduce) on per capita liquor consumption. The number of liquor licenses in each county is the one variable directly controllable by the ABC Board of Review; liquor prices do not vary significantly within Kansas.

In six Kansas counties, there are no liquor licenses; these "dry" counties may be quite different from the remaining 99 Kansas counties. So that the statistical results are not biased by the six counties, the statistical analysis was repeated for the 99 "wet" counties. The results are:

Variable	Standardized Coefficient
Liquor Licenses	+ 2.81
Legal Age Population	- 2.12
Mean Family Income	+ .270
Median Age	- .209
Number of Churches	- .485
Unemployment Percentage	- .156
Percentage Urban	+ .319
Population Per Square Mile	- .178

Beside the six variables found for the 105 county analysis, the 99 county analysis finds two additional influences per capita liquor consumption. They are median age of the county population (with a negative influence) and the unemployment percentage of the civilian labor force, also with a negative influence.

Breaking Kansas counties into three groups was used in the analysis of sales by county presented earlier in this report. The same breakdown can be employed for three separate statistical analyses. Again, Region I contains the border counties, Region II contains counties that are one distant from the border, and Region III contains interior counties. The 99 "wet" counties breakdown as follows: Region I, 37 counties; Region II, 28 counties; and Region III, 34 counties. Statistically, the multiple regression results are:

Variable	Standardized Coefficients		
	Region I	Region II	Region III
Liquor Licenses			+ .811
Mean Family Income	+ .620		
Median Age	- .347		- .341
Number of Churches			- .858
Percent Urban	+ .318	+ .471	+ .555
Population Per Square Mile		+ .463	
Unemployment Percentage	- .437	- .460	
Education Level	- .398		- .214

The three group results are consistent with the analysis of the entire State and are consistent between groups. Social/economic variables exercise an influence of an expected sign. It is important to note that the number of liquor licenses only exercises its positive influence on liquor consumption within Region III, the interior Kansas counties. In the other two Regions, the number of licenses was not found to be an important determinant of per capita liquor consumption.

Retailers

The Sample, a tabulation of liquor enforcement tax files, was made for this study. It was restricted to those who filed returns in each of the 12 months ending April 1985. There were 843 retail liquor dealers who met this requirement. Of course, this figure is significantly less than the total number of retail licenses on that date. The major explanation of the difference is that there is a considerable turnover in retail liquor licenses--the 12 returns requirement eliminates all retailers who were not in business for a full year.

Distribution of Retailing, a tabulation of retailer data provides sales information. This information can be employed to examine the concentration of Kansas liquor retailing. On the basis of sales volume, the following statistics are produced.

Distribution of Filers (thousand dollars)	Number of Filers	Percent of Sales
1,747 - 296	168	44.5
295 - 199	168	22.9
198 - 140	169	16.3
139 - 87	168	10.8
86 - 1	168	5.5
Total	841	100.0

The five groups have approximately the same number of filers. The range of sales was from $1,747 million (for the largest) to $1,167 (for the smallest). A very considerable concentration is evident--about 44.5 percent of total Kansas sales are made by the largest 20 percent of retailers, those retailers with sales of $296 thousand or more. The largest 40 percent of all retailers account for 67.4 percent of total sales. At the other end of the size distribution, the smallest 20 percent of retailers have sales less that $87 thousand and represent only 5.5 percent of total Kansas sales.

These data also can be analyzed by examining the distribution of sales, the following data are relevant:

Distribution of Sales (thousand dollars)	Gross Sales (million dollars)	Percent of Filers
1,747 - 468	35.4	5.9
467 - 316	35.2	11.1
315 - 223	35.0	15.7
222 - 155	35.0	22.1
154 - 1	35.1	45.2
Total	175.7	100.0

From these data, it can be seen that one fifth of total Kansas sales are made by the largest 5.9 percent of retailers (with yearly sales greater than $467 thousand per retailer); the largest 17 percent of retailers (with yearly sales greater than $315 thousand per retailer) represent 40 percent of total Statewide sales. The smallest 45.2 percent of the retail liquor firms account for a fifth of Kansas total sales.

These two tabulations show that the Kansas retail liquor industry is characterized by a relatively small number of large and a fairly large number of quite small firms.

Profitability-Total, from the 841 filers, a 20 percent random sample was selected, individual income tax data were obtained for 116 of the subsample. It should be noted that the sample was drawn (each fourth license, after a random start) from a list of retailers, arranged by county and within county, by sales volume. This procedure provided both a distribution and a representation of the sample retailers in different counties and different sales volumes. Useable data could not be obtained for all the twenty-five percent subsample. The following tabulation indicates that the sample can be used as a proper representation of the universe of filers.

Unit	Licenses	Sales (thousand dollars)	Sales Per License (thousand dollars)
Universe	841	175,738	209
Tax Sample	116	22,875	197

The tax sample represents about 14 percent of the universe of licenses and about 13 percent of their sales. Sales per license are only a bit less for the tax sample than for the universe. This difference is not so great as to cause the tax sample to be a suspect representation of the universe.

Schedule C of the Federal Individual Income Tax provides data that can be used to examine the profitability of Kansas liquor retailers. The average (of the 116 filers) retailer had the following profit and loss situation for 1983.

Items	Value
Sales	$ 195,523
Other Income	
Total Income	$ 195,523
Cost of Goods Sold	157,736
Gross Profit	$ 37,786

Expenses		
Interest	$ 1,346	
Rent	3,039	
Wages	7,431	
Other	17,913	29,711
Net Profit		$ 8,075
Average Inventory		$ 14,536

These data show a net profit per retailer of $8,075 from total sales of $195,523, with cost of goods sold of $157,736. Cost of goods sold then represents 80.7 percent of sales--producing a gross profit margin, on sales, of 19.3 percent. Interest is 0.7 percent of sales, rent is 1.5 percent, and wages are 3.8 percent. Net profit is 4.1 percent of sales. Average inventory is 7.4 percent of sales, for a turnover rate of 13.5.

Among the 116 individual retailers in the tax sample, there is a considerable variation in the financial ratios. The principle ratios have the following characteristics:

Ratio	Median	Range	Concentration
Cost of Goods Sold/Sales	81	45 to 99	31 filers in the 80-82 range.
Gross Profit/Sales	20	1 to 55	30 filers in the 19-21 range.
Net Profit/Sales	3	-45 to 25	29 filers in the 2-4 range, 10 filers at 0, and 23 filers negative.
Interest/Sales	0	0 to 5	77 filers at 0.
Rent/Sales	1	1 to 7	46 filers in 1-2 range, 48 filers at 0.
Wages/Sales	3	0 to 13	29 filers in 2-4 range, 36 filers at 0.
Average Inventory/Sales	7	0 to 58	36 filers in 6-8 range.

It is possible to compare Kansas retail liquor stores to similar firms nationally. National data from Robert Morris Associates[1] are as follows:

Item	Percent
Cost of Goods Sold as Percentage of Sales	79.0
Gross Profit as Percentage of Sales	21.0
Profit Before Taxes as Percentage of Sales	1.9
Profit Before Taxes as Percentage of Tangible Net Worth	19.0
Profit Before Taxes as Percentage of Total Assets	5.0

Before a comparison to Kansas retail liquor stores is made, it should be noted that, nationally, the profitability of retail liquor stores is relatively low when compared to other retailers if the profits are expressed as a percentage of sales, relatively high if the profits are expressed on a percentage of tangible net worth, and about average if profits are calculated as a percentage of total assets.

Whatever the peculiarities of this industry nationally, compared to other retailers, a more relevant comparison is between Kansas and national retail liquor figures. Nationally, liquor retailers have lower cost of goods sold as a percentage of sales and lower net profit as a percentage of sales. Then, by these data, Kansas liquor retailers are less profitable than their national counterparts. When measured by gross profit as a percentage of sales, Kansas liquor retailers are less profitable than their national counterparts; net profits before taxes, as a percentage of sales, are larger for Kansas liquor retailers than liquor retailers nationally.

Profitability-Regional Differences, the tax sample can be divided into three Kansas regions, defined above. Profit and loss data, on a per firm basis are:

Item	Region I	Region II	Region III
Number of Retailers	41	41	35
Sales	$194,532	$204,191	$186,558
Other Income	4	0	28
Cost of Goods Sold	154,968	165,289	152,130
Gross Profit	39,560	38,902	34,400
Interest	1,363	1,296	1,384
Rent	3,206	2,969	2,926
Wages	6,554	8,617	7,067
Other Expenses	18,518	18,090	16,938
Total Expenses	29,641	30,972	28,315
Net Profit	9,919	7,930	6,085
Average Inventory	12,813	16,902	13,781

While there are differences between regions, at the same time great similarities are present. Region I firms are most profitable (in terms of both gross and net income) and have the largest rent, largest interest, smallest wages, and smallest inventories. Region II firms have the largest sales and total expenses, largest wages, smallest interest, and largest inventories. Region III firms have the smallest profits (gross and net) and smallest rent.

Relative to sales the following ratios are present:

	Ratios to Sales			
Item	Region I	Region II	Region III	State
Cost of Goods Sold	79.7	80.9	81.6	80.7
Gross Profit	20.3	19.1	18.4	19.3
Interest	0.7	0.6	0.7	0.7
Rent	1.6	1.5	1.6	1.5
Wages	3.4	4.2	3.8	3.8
Other Expenses	9.5	8.9	9.1	9.2
Total Expenses	15.2	15.2	15.2	15.2
Net Profit	5.1	3.9	3.3	4.1
Average Inventory	6.6	8.3	7.4	7.4

Again, there are regional differences. Cost of goods sold range from 79.7 to 81.6 percent of sales. Even though there are sizeable differences in the components of expense, in each region, total expenses are 15.2 percent of sales. Net profits, as a percentage of sales, range from 5.1 to 3.3 percent. Across regions: Region I retail liquor firms are the most profitable, Region II firms rank second, and Region III are the least profitable by this measure.

Profitablity-Sales Volume Differences, the tax sample can be separated into firms with large, medium, and small sales. This classification is based on a rather equivalent number of retailers in each of the sales categories. Relevant data, on a per firm basis, are provided below.

Item	Large Sales	Medium Sales	Small Sales
Number of Returns	40	37	40
Sales	$ 357,164	$ 154,759	$ 71,589
Cost of Goods Sold	286,215	124,866	57,862
Gross Profit	71,601	28,124	10,764
Net Profit	23,357	5,183	-4,532
Average Inventory	27,752	10,902	4,197

From these data, it is very clear that substantial profits accrue to large firms, and losses are recorded for small liquor retailers. While loss firms are found in each Region and in each size class, retail liquor firms that incur losses may be characterized as follows: (1) Firm size--the profit on sales of the firms with yearly sales less than $100,000 (each firm weighted equally) are negative; one-third of these firms suffer losses. In contrast, firms with sales greater than $200,000 receive an average net profit on sales of 5.4 percent; only one-eighth of these firms suffer losses. (2) Region--in Region I (border counties) one-fifth of the firms are loss firms; there is no concentration by sales class. Region II (second-tier counties) one-quarter of

the firms are loss firms; most of these loss firms have yearly sales between $100,000 and $200,000. Region III (interior counties) again, one-quarter of the firms are loss firms; two-thirds of the loss firms have yearly sales less than $100,000. It is quite evident that this sales/profit relationship is important in the Kansas retail liquor industry and significant in its regulation by the ABC Board.

Wholesalers

While this study began with a focus on the retail liquor market in Kansas, it became necessary to make a partial examination of the wholesalers operating in the State. This is because of the interconnection between these two levels of Kansas liquor merchandising.

In order to understand the current situation of the wholesalers, their most recently filed Kansas Corporate Income Tax returns were examined. The time period covered by these returns are somewhat different for these firms (they cover their fiscal years) the 12 months of operation ending between 6-30-84 and 2-28-85. During that period, seven enterprises operated as wholesale liquor firms. Relevant data for the sum of these firms are:

Item	Value (thousand dollars)
Gross Receipts, less Refunds and Allowances	$ 102,590
Cost of Goods Sold	83,633
Gross Profit	18,957
Other Income	733
Total Income	19,690
Deductions (expenses)	16,472
Net Income	3,218
Assets	26,517
Shareholder's Equity	11,119

Beyond the problems associated with different accounting periods, these

figures contain some ambiguities: (1) some of the other income seems only remotely associated with liquor wholesaling--because expenses, assets, and equity cannot be separated by function, no adjustment is made for these tangential activities; (2) other liquor wholesaling activities may exist (such as subsidiary or related transportation, real estate, etc., firms) that should be consolidated with the reported activity--lack of data prevented such consolidation; (3) sizeable differences between the seven wholesalers exist in the amount of officers' salaries (15 officers are identified with a total of $1.167 million)--no direct adjustment is made; (4) loss and/or investment tax credit carryovers reduce taxable income for some whoesalers--these amounts are added back into net income to produce income from this year's operation; and (5) other, no adjustment is made to reflect the propriety of the assets or expenses in providing wholesale liquor services, as distinguished from other activities, nor are any adjustments made for assets devoted to liquor wholesaling activities which are leased and, thereby, are not shown as assets of the wholesalers.

In spite of these limitations, a picture of the industry can be produced with these data. Summary statistics, representing the sum of the seven firms, are as follows:

Item	Value
Cost of Goods Sold as Percentage of Sales	81.52
Gross Profit, Percent of Sales	18.48
Total Income as Percent of Sales	19.19
Net Income as Percent of Sales	3.14
Net Income as Percent of Assets	12.14
Net Income as Percent of Shareholders' Equity	28.94

These wholesalers are earning a gross profit margin of 18 percent and a total

profit margin of 19 percent--the difference being the $733 thousand other income. Net income returns are 3.1 percent on sales, 12.1 percent on assets, and 28.9 percent on equity.

Because of the intrafirm differences in compensation of officers, a more inclusive and comparable profit picture may be generated by adding net income and officers' compensation to produce a total return figure and calculating margins related to this figure. Such a calculation produces a total return on sales of 4.3 percent, on assets of 16.6 percent, and on equity of 39.5 percent.

There are considerable differences in size (one wholesaler accounts for more than one-third of industry sales), profitability (one wholesaler had a loss), and equity (one wholesaler had a negative value) among these firms. The statistics presented for the total industry can also be produced for each firm and interfirm comparisons made. The figures are:

Item	Mean	Maximum	Minimum
Cost of Goods Sold as Percent of Sales	81.85	83.61	80.35
Gross Profit as Percent of Sales	18.15	19.65	18.10
Total Income as Percent of Sales	18.68	22.54	16.40
Net Income as Percent of Sales	1.47	6.93	- 2.86
Net Income as Percent of Assets	6.07	22.76	-12.21
Net Income as Percent of Equity*	12.26	48.25	-31.66
Total Return as Percent of Sales	3.05	7.69	- 1.06
Total Return as Percent of Assets	12.08	26.46	- 4.50
Total Return as Percent of Equity*	27.51	56.10	-11.67

*Omitting the firm with negative equity.

It is possible to compare some of these Kansas figures to the average wholesaler in the United States.[2] A word of caution is in order; these

national figures are for a combination of wine, liquor, and beer wholesalers. To the extent that the beer portion of their business is different, the Kansas and national figures are not exactly comparable. However, they can be expected to be close.

Nationally, costs of goods sold are a smaller portion of sales than in Kansas, 77.8 percent vs 81.5 percent; consequently, the gross margin, nationally, is larger than in Kansas. Net profits, as a percentage of sales, are one percentage point higher in Kansas, 3.1 percent vs 2.1 percent. On the other hand, net profits, expressed as a return on assets, are lower in Kansas. In either case, there does not seem to be major differences in the net profitability of Kansas liquor wholesalers as compared to their national counterparts.

Retailers and Wholesaler Interrelationships

One aspect of the interrelationship between wholesalers and retailers involves price/cost relationships and the impact of this relationship on retail price. This is a matter of considerable importance, particularly if the ABC Board chooses to make significant modification in the retail markup system. An example (applied to wine products) may illustrate what happens when retail markups are changed.

Item	Old Markup	New Markup	
		Situation I	Situation II
Purchase	$100.00	$100.00	$103.56
Sales	145.50	140.50	145.50
Gross Profit	$ 45.50	$ 40.50	$ 41.94

If a retailer makes a $100.00 purchase and applies a 45.5 percent markup, his selling price would be $145.50; he would receive a $45.50 gross profit. If his

markup were reduced to 40.5 percent and wholesale prices did not change, the same $100.00 purchase would be sold for $140.50 and produce a $40.50 gross profit--his profit wuld fall by $5.00 on the $100.00 purchase; this is Situation I. On the other hand, if wholesale prices were to maintain retail prices unchanged, the same goods purchased by the retailers would cost him $103.56, and applying the 40.5 percent markup would make the selling price $145.50. The retailers gross profit would be $41.94, a fall of $3.56, (this is Situation II) from his position before the markup changed and $1.44 more than the situation when the wholesaler does not change his prices. In summary:

Item	No Wholesale Price Change	Wholesale Price Increase to Maintain Retail Price
Consumer Price	+$5.00	0
Retailers' Gross Profit	-$5.00	-$3.56
Wholesalers' Gross Profit	0	+$3.56

The consumer gains nothing and the wholesaler gains what the retailer loses if the wholesaler raises his price, so that the consumer pays the same price after the markup change. The wholesaler is unaffected if he does not raise his price and the consumer gains what the retailer loses. It should be noted that the retailer loses in either case and loses more if the wholesaler does not raise his price.

There is a recent event that sheds some light on this relationship. Effective July 1, 1983, the minimum markup on wine and specialty items was reduced by five percent. If nothing else happened to influence minimum retail prices, wine prices would have fallen in July 1983 to 96.56 percent of June 1983 prices; specialty prices in July 1983 would have fallen to 96.34 percent of June 1983 prices. In order to verify what actually happened, a comparison

was made between prices before and after the minimum margin change.

For wine, a sample comparison (for one wholesaler) was made for the June 1983 and July 1983 minimum retail bottle prices. The following is a tabulation of the July prices as a percentage of the June prices.

Price Change Percentage	Number of Price Comparisons
< 95	8
95	10
96	10
97	37
98	21
99	0
100	47
101	0
102	0
> 102	26
Total	159

About as large a portion of extremely large and small percentage changes occurred (often as a result of special situations such as the beginning or end of a sale)--13.2 percent of the 159 July 1983 prices were less than 95 percent of the June 1983 prices and 12.3 percent of the July 1983 prices were more than 100 percent of the June 1983 prices. A majority of the prices were near the expected price of 96.6 percent--55 percent of the 159 July 1983 prices were between 96 and 98 percent of the June 1983 prices. However, this is not the end of the story. For 47 of the 159 prices (29.6 percent) of the July 1983 prices were about equal to the June 1983 prices. In this instance, the consumer paid about the same price, the retailers costs were increased, and a major gain occurred to the wholesalers. To some extent, the wholesalers raised their prices and captured a benefit of the minimum margin reduction.

An expanded comparison was made for specialty items. Three wholesalers were included and the comparison was made between the June 1983 and July 1983,

and between the June 1983 and September 1983 prices. No significant differences were found between wholesalers or between different time periods. The summary price comparisons of September 1983 prices expressed as a percentage of June 1983 prices are as follows:

Price Change Percentage	Number of Price Comparisons
< 95	30
95	14
96	72
97	69
98	50
99	6
100	39
101	3
102	8
> 102	21
Total	312

As in the wine comparison, as large a portion of the sampled items had extremely large and small percentage ratios. A majority of the prices, after the minimum markups reduction, fell to near the anticipated level, and a significant number (in this instance an eighth) of the retail prices were unaffected by the combination of increased wholesaler prices and reduced markups.

For the wine and specialty items combined in about a fifth of the cases, wholesale prices rose to capture a major portion of the "gain" as a result of the minimum markup reduction. Retailers suffered a major reduction in their gross profit (but less than what would have occurred if wholesale prices had not changed) and the consumers paid nearly the same price for those products. This record must be considered if the ABC contemplates changes in minimum markups.

SECTION III

LITERATURE REVIEW AND FINDINGS

The literature review includes both articles published in journals and state reports. Other findings of this study are included in this section.

Journal Articles

The literature about the effects of alcohol is volumnous. It may be divided into a few areas. The effects of alcohol on an individual's physical and mental health is well documented. Another area of interest has been the public safety aspect of alcohol consumption. Although these areas are important, the focus of this literature review is to examine major studies of the determinants of alcohol consumption.

One of the first studies that attempted to quantify the relationship between alcohol consumption in monopoly states and various economic factors was completed by Karl B. Marx in 1961.[3] He examined many factors which may influence the difference in per capita consumption of alcohol between states and concluded that average liquor prices (including taxes) explained most of the variation of consumption between states. In this analysis, he primarily was interested in state total population, but he also considered population in the wet areas of each state. Holding liquor prices constant, Marx determined that per capita income, percent of voting age population, and the wet population per retail outlet were significant influences in determining per capita consumption in wet areas.

A year later, Niskanen conducted a study of alcohol consumption.[4] He found a negative relationship between consumption and price--elasticities of -2.0 for spirits, -0.6 for beer, and -0.7 for wine. In addition, spirits and beer appeared to be weak substitutes. That is, a price increase for either

will result in a small increase in the consumption of the other. A positive relationship was found between consumption and income--elasticities of 0.4 for spirits, 0.3 for beer, and 1.0 for wine.

That study was followed by another by Julian L. Simon who estimated price elasticity of liquor.[5] His approach involved adjusting the consumption and price data for numerous external factors. He was primarily concerned with non-moonshine states. After examining the effects of a change in price, Simon concluded the median price elasticity of his 23 sampled states was -0.79. In addition, he concluded the price elasticity for the moonshine states was between -1.2 and -1.5.

In that same year, Simon examined packaged-liquor retailing.[6] His work showed that price was influenced by the type of marking arrangement--whether the state's liquor industry is a state monopoly or whether private ownership prevails. He found that the mean price of liquor in monopoly states is lower than in private license states.[7] Other factors such as income, population, and number of outlets were not found to be significant price determinants. Simon reported the mean of monopoly state consumption was lower than the private-license state.[8] Finally, he concluded that only per capita income significantly explains the variance in consumption.

The first quantification of interstate differences in consumption was published by Terrence Wales in 1972.[9] He developed a unique methodology to quantify the determinants of liquor consumption. His results indicated that price and income differentials coupled with length of a state's border is important in explaining differences in interstate consumption.[10] This research has proved to be difficult to replicate/update and has been argued to be quite arbitrary.

In 1977, James Johnson and Ernest Oksanen produced an econometric estimation of the demand for alcohol in Canada. They concluded that only price changes are significant in explaining the demand for beer, wine, and spirits. Further, income changes only had an effect on the demand for spirits.[11] That same year, Reginald Smart determined that income and the percentage of population in urban areas are closely related to consumption.[12] The importance of income, price, and whether a state monopoly existed in the determination of consumption of distilled spirits was reaffirmed by Steve Barsby and Gary Marshall; however, they also found different population measures (legal age and resident) to be significant.[13]

In 1979, an analysis of the effects of alcoholic beverage control laws was updated by Medicine in the Public Interest, Inc. (MIPI).[14] Although the main focus of this study was an explanation and history of state liquor laws and their effects on alcoholism, they did provide a score of the availability of liquor in each state. The range of scores was 44 (most available) to 16 (least available). Both Kansas and Oklahoma had a score of 18 while Missouri and Colorado had scores in the mid-thirties and Nebraska had a score of 38.

A portion of the MIPI report reviewed other economic and regulatory analysis of alcoholic beverage control laws. From 1963 to 1964, the State of New York addressed these issues. A New York Commission concluded that "various restrictions on the actual number of sales outlets had little or no effect on the actual consumption of alcoholic beverages as expressed in gross sales."[15] Another investigator found that a ten percent increase in the number of licenses resulted in a one percent increase in per capita consumption of liquor.[16] Other findings include the fact that there was no substantial reason for continuing restrictive licensing and no need for price fixing of packaged

liquor. Another section of the MIPI report addressed pricing and taxation. It cited many sources which show that price is significant in determining per capita consumption.[17] Other factors that influence consumption are legal drinking age, closing hours of retail stores, number of retail outlets, and income.

An analysis of controlling alcohol consumption through government-administered price increases was conducted in 1980 by Stanley Ornstein.[18] He presented and critiqued the results of previous studies that estimated elasticity. As a result, Ornstein concluded the price elasticity of beer was -.04 implying a ten percent increase in price of beer results in a four percent decrease in beer consumption. He asserted there was no satisfactory estimation of wine or distilled spirits elasticity. Finally, an examination of cross-price elasticity was performed. Once again, Ornstein concluded, because of the inconsistencies in the results, no definitive findings could be reported regarding the substitutability of beer, wine, and distilled spirits.

In 1982, Philip Cook and George Tauchen examined liquor taxes and heavy drinking. They reported the real price of alcoholic beverages had declined in recent years.[19] Using a cross-section and time-series analysis, they related per capita consumption of liquor to its tax rate, real per capita income, and a time and state measure. The results indicated that a one dollar increase in the real tax reduces liquor consumption by 7.2 percent, and a $1,000 increase in real per capita income increases liquor consumption 13.8 percent.[20]

An analysis was performed by William E. Spellman and Mark R. Jorgenson which determined that price and income differentials in control and open states did not explain (at any significant statistical level of significance) the difference in per capita consumption.[21] They also found that liquor in

control (monopoly) states generally was lower priced than in open (license) states.

A recent analysis of the demand for distilled spirits was conducted by Dennis C. McCornac and Ronald W. Filante.[22] The data used was from 1970-75 and each of the three two-year periods within that time span. For the entire period, consumption of distilled spirits was significantly affected by real excise tax on beer, real price of distilled spirits, if the border states sell distilled spirits for a lower price, median real per capita income, and the number of licenses per capita.[23] Within the time periods, the results indicate that from 1970-71, consumption was related to price, income, and licenses; price and income from 1971-73; and from 1974-75, consumption was related to income, licenses, and the unemployment level.

In the same year Zardkoohi and Sheer reported that per capita case lot consumption is significantly explained by whether the state was open or controlled, by a composite price factor, by per capita income, and by population density.[24] They also concluded that price is significantly higher in private states than in closed states.

In a very recent study, Ornstein and Hanssens published an examination of the influence of alcohol control laws on consumption.[25] They found:

> The main determinants of interstate differences in per capita consumption of distilled spirits are price, income, and interstate travel--not differences in alcohol control laws. Control laws are either unrelated to distilled spirits consumption, as in the cases of minimum legal age and Sunday sales, or are related but with very low elasticities, as in the cases of resale-price maintenance and print- and billboard-price advertising. This suggests, not too suprisingly, that control laws affecting price have the greatest impact on consumption. In the case of beer, the primary influence on demand is the youthfulness of the population. Control laws with the strongest relationship to beer are minimum legal age and Sunday sales. Price and income are far

> more inelastic for beer than for distilled spirits, implying that control laws influencing price will have a relatively lesser effect on beer consumption than on spirits consumption.
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> . . . . . .
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> Price intervention through tax increases, resale price maintenance, or bans on price advertising will have a much larger effect on spirits consumption than on beer consumption. The history of state excise taxes shows that they are rarely changed, except at times of budgetary crises. Resale-price maintenance in alcohol has been on the decline for years and is fast disappearing in light of recent legal rulings. But advertising bans are increasingly being called for. Ten states proposed legislation to ban advertising in 1983, and a variety of public interest groups called on the Federal Trade Commission to restrict the advertising of alcoholic beverages. . . .
>
> Availability by age is a key consumption determinant for beer. . . . However, for both beer and distilled spirits the influence of control measures is small relative to that of sociodemographic and economic variables that affect consumers' overall attitudes toward drinking. For example, higher urbanization and increased tourist activity were found to be strongly associated with higher alcohol consumption.

State Reports

An early study of intrastate variations in the consumption of alcoholic beverages, with particular emphasis on the influence of the number of outlets on consumption, was conducted in New York.[26] Between counties, higher per capita sales were associated with higher median annual income, higher ratios of adult population per license, and density of population (adult population per square mile). A lack of influence of the number of licenses had been found by Entine and Bacon;[27] their studies (and the small magnitude of impact found in the Brief study) and other findings led the Commission to recommend a substantial liberalization of New York licensing regulations.

A California Committee also recommended eliminating that state's fair trade law on alcoholic beverages, particularly as a reaction to sentiment

against state-enforced "artificially high" liquor prices.[28]

A Georgia study contains the following relevant points:[29]

1) (p. 1) "Taxes, more than any other single factor, account for the relatively higher prices charged for beverage alcohol in Georgia than in some other parts of the country." and "To a lesser degree, higher prices charged for distilled spirits in Georgia reflect the economic impact of certain regulatory measures, notably the prohibition against price advertising."

2) (p. 2) "laissez-faire schemes carry with them the potential for long-term monopolistic concentrations of economic power which is objectional from an economic as well as a regulatory standpoint, and which could lead ultimately to long-term retail price increases."

3) (p. 11) "a present threat to competition at the retail level does exist in the form of deep quantity discounts which some large retailers can demand from their suppliers."

4) (p. 12) "the chains are in position to enjoy bona fide economies of scale and to pass along a part of those benefits to consumers in the form of lower prices. It is equally clear that such retail chains carry with them the tendency toward monopoly at the retail level, the social and political implications of which far outweigh any social benefits resulting from lowered whiskey prices."

5) (p. 17) "The weights determined by the regression show the relative importance of each factor in making up the total price. If the weight of a factor is negative, that factor tends to reduce the price; if the weight of a factor is positive, that factor tends to increase the price.

a. 58% of the price is attributable to a group of constant factors, which includes f.o.b. price.

b. 9.3% of the price is attributable to the ability to advertise, which decreases retail prices.

c. 3.5% of the price is attributable to the ability to extend credit to retailers, which also decreases the retail price.

d. 1.6% of the price is attributable to the ability to extend credit to consumers, which increases the retail price.

e. 3% of the price is attributable to Fair Trade laws, which increase the retail price.

f. 24.6% of the price is unexplained because the model does not contain all factors that affect the price."

6) (p. 19) "It can be argued with some force that the designation of exclusive sales territories has the effect of reducing competition among wholesalers and thereby results in higher prices to the consumer."

An analysis, focusing on an explanation for relatively high liquor prices in New York, contains an analysis of restrictions of entry into the retail liquor market and mandatory minimum retail prices.[30] While finding evidence of a retail (rather than a wholesale) cartel. Ending state-inforced mandatory fair trade of liquor (still permitting supplier set and enforced fair trade), contributed to a reduction in retail liquor prices--even without any decrease in posted wholesale prices.

The impact of a shared elimination of retail price maintenance has been studied.[31] This New Jersey study was conducted by W. John Jordon.

A major study by the Division of Criminal Justice, Antitrust Task Force, State of New Jersey provides a review of many aspects of the liquor industry relevant to Kansas.[32]

Their major findings include the following:

1) (p. 52) "While the free market concept has been believed potentially to have an adverse effect on temperance, the Task Force has concluded otherwise. The Task Force has found no empirical data which would justify the conclusion that any minimal reduction in consumer price would unduly increase consumption or foster intemperance in New Jersey. On the other hand, the generally accepted view within the contemporary economic community is that the demand for alcoholic beverages is relatively inelastic, and therefore, any anticipated price reduction would have no meaningful relationship to income and consumption."

2) (p. 75) "A number of states, recognizing the detrimental effects of retail price maintenance, have in recent years repealed 'fair trade' laws affecting liquor and other products."

3) (pp. 76-77) ". . . according to the data. . . there is virtually a 100 percent probability that resale price maintenance increases brand-name liquor prices. The same statistical test indicates that there is a 95 percent probability that RPM increases brand-name liquor prices by at least 67 cents per fifth, and a 75 percent probability that RPM increases brand-name liquor prices by at least 81 cents per fifth.

The conclusion that resale price maintenance increases retail liquor prices has also been reached by Ferguson, who estimated that RPM raised 1963 liquor prices by an average of 36 cents to 56 cents per fifth."

4) (p.79) "In general, price reductions may be expected to lead to increased consumption on any product, including brand-name liquor. In a geographically small state such as New Jersey, however, any prediction of the effect of price changes is complicated by the ability of residents to switch purchases to, or from, adjacent states in response to relative price changes." The concern is with out-of-state purchases by New Jersey residents--in New York and Pennsylvania.

5) (p.79) "Other consumers respond to high brand-name prices by purchasing private-label brands. Again, to the extent that lower brand-name prices lead consumers to reduce their consumption of private labels, no increased consumption results."

6) (p.86) Their analysis was found to "suggest that the number of 'mom and pop' retail stores in any state is affected much less by RPM than by other factors."

7) (p. 87) In terms of average size (sales) of non-payroll (mom and pop) retail stores, their data "suggests that RPM and non-RPM states do not differ significantly in this regard."

8) (p. 92-93) "The end resale price maintenance in New Jersey may be expected to have the following effects.

(1) Brand-name liquor prices will fall, perhaps by a substantial amount. A very conservative estimate, based on a statistical analysis of the effect of RPM on brand-name liquor prices in ten states, is that average prices will fall by at least 67 cents per fifth. A more optimistic estimate, based on an examination of brand-name prices in neighboring states without RPM, is that

average prices could fall by as much as $1.25 per fifth.

(2) Liquor consumption will rise by an essentially unpredictable amount. Depending upon the amount of the average price reduction and upon the price elasticity of liquor, New Jersey consumption could rise by as much as 2.4 million gallons per year (a fifteen-percent increase over current consumption), or by as little as 300 thousand gallons per year (an increase of slightly less than two percent).

(3) Liquor sales volume and hence state tax revenues--will rise by more than the amount of the consumption increase, since some New Jersey residents now purchasing liquor in New York or Pennsylvania may be encouraged to switch their purchases out of state and less out-of-state residents may be expected to purchase liquor in New Jersey.

(4) Liquor store profits will be reduced, but there is no evidence that a significant number of family-run stores will fail if RPM is elimintated. 'Mom and Pop' liquor stores exist in essentially equal numbers in states with resale price maintenance and in similar states without RPM. The number of liquor stores with payroll employees will probably be reduced. There will be some increase in the average size of the remaining payroll establishments, in order to satisfy the increased consumer demand. The failure rate figure should translate into between three and eight percent, when the base used is the total number of licenses that make provision for off-premise liquor sales. The actual figure should be much near to three percent, as the sample used was the most vulnerable store type (retail outlets with over fifty percent of sales in liquor)."

Additional Items

The influence of affirmation laws on retail liquor prices has received some anaylsis.[33] In general, evidence indicates that price affirmation does not lead to lower consumer prices. These studies typically involve price comparisons between cities or states with and without affirmation. No overall relationship has been found. It seems that affirmation does not guarantee that wholesalers and retailers "pass on" any savings (due to affirmation) to the consumer.

The New Jersey report (cited above) at pages 55 and 56 recognizes that

one state has little to gain from a removal of affirmation. The report states: " . . . the elimination of affirmation in New Jersey alone at the present time would effect no apparent benefit, economic or otherwise."

A 1961 price control law directed the ABC Board of Review to establish minimum wholesale and retail liquor prices. It required that "The Board in establishing and fixing such prices shall take into consideration and be guided by the following: (a) the acquisition cost to licensed distributors and retailers. The aquisition price shall be the case price to distributors and the minimum bottle sales price to retailers," GSK 41-116. It is significant that the Law specified that the retailer markup was to be applied to the bottle cost of acquisition.

The 1979 franchise law rewrote the relevant portion of the liquor statutes. It directed that "the board in establishing minimum markups shall take into consideration and be guided by the following: (a) the mean of acquisition cost of licensed retailers." Importantly the requirement to use bottle price was removed and substituted by the word "mean." This should convey the idea of average or typical. By a survey of Kansas liquor wholesalers, for this study, it was determined that 60.53 percent of sales to retailers are made in full cases. It would then follow that full case sales are more representative of the market than case bottle sales. This would require that retailer markup should be applied to the case not bottle cost of acquisition.

An example should make the situation clear. If a case of 1.0 liters of a medium priced bourbon costs the retailer $60.00, the bottle costs would be $5.10--$.10 being the customary split-case charge for this size. Currently, the 28.5 percent minimum markup is applied to the $5.10 to produce a minimum

retail price of $6.56; if the markup were applied to the case price of $5.00 per bottle, the minimum retail price would be $6.43. As a result, the bottle price to the ultimate consumer would fall by about two percent; a corresponding decline in revenue would accrue to the retailer. Of course, if the Board feels the retailers require their current gross return, an increase in the minimum markup percentage would be required.

CONCLUSION

Principle Findings

This report has considered a large number of features relating to the Kansas retail liquor industry. Generally, following the order of the text, the principle ten findings are:

1. Compared to the nation:

   a. When measured by sales, liquor consumption is low in Kansas. This is the case, if consumption is expressed in total or in relation to population or personal income.

   b. Kansas retail liquor outlets are many and small.

   c. On a per capita basis, there are nearly twice as many retail liquor outlets in Kansas than there are nationally.

   d. Employment and wages in this Kansas industry are low.

2. A statistical analysis shows that per capita liquor consumption is higher in states with low liquor prices and in states with a large number of retail outlets per square mile.

3. In Kansas, retail liquor licenses:

   a. The number of licenses peaked in 1977; since then, there have been an 11 percent decline in operating licenses.

   b. There is a significant concentration of licenses in the State's more urban areas.

   c. The share of the Statewide total licenses, located in the urban areas, has remained relatively constant for the last eight years.

4. In Kansas, liquor consumption (again, measured by sales):

   a. Beer, strong and CMB, makes up a large share of the total and alcohol content of liquor consumption.

   b. Liquor sales peaked in 1982. This is the case if sales are measured in total, per license, or per capita.

c. Sales are concentrated in a few counties; 15 counties account for 74 percent of current sales.

d. Recent sales growth also is very concentrated; four counties captured 75 percent of the sales growth from 1980 to 1984.

5. Kansas liquor prices:

a. Compared to other states, Kansas has relatively high liquor prices, but not the highest nationally or regionally.

b. The high Kansas prices seem to be the result of what happens at the retail level of the industry, not at the wholesale level.

6. Between Kansas counties:

a. Per capita liquor consumption tends to be higher, the further a county is distant from the State's border.

b. Much of the difference in border county sales is the result of low sales in Nebraska bordering counties not in Missouri bordering counties.

c. It is possible to account for a considerable portion of the inter-county variation in per capita iquor consumption. This staistical anaylsis shows that the number of licenses, particularly in the interior counties, are positively related to consumption.

7. Kansas retail liquor firms:

a. Within Kansas there are a small number of large firms and a large number of small firms.

b. Average yearly profits of Kansas retail liquor firms are $8,075 or 4.1 percent of sales.

c. These firms are more profitable than retail liquor firms nationally.

d. Retailers located in border counties are the most profitable and, those in interior counties are the least profitable.

e. Small firmms, with annual sales less than $100,000, are loss firms. Large firms, with average annual sales of $375,000, earn an average profit of $27,752, or 7.8 percent on sales. Small/loss firms are overrepresented in interior Kansas counties.

8. Kansas liquor wholesalers:

a. Wholesalers earn a profit of 3.1 percent of sales and 12.1 percent on assets.

b. These firms are about as profitable as liquor wholesalers nationally.

9. Literature regarding alcohol:

   a. In general, the literature shows that price and, to a lessor extent, availability (typically measured by number of outlets) are important determinants of liquor consumption.

   b. Various control measures (such as limits on advertising) have much less effect on consumption.

   c. Systems of price control (minimum markups or price, fair trade, etc.) are being discarded or reduced in effectiveness.

   d. Small stores, if they are economic in a highly regulated market, can survive in a much less regulated environment.

10. Finally:

   a. In Kansas, changes in minimum retail markups can, and have, affected retail liquor prices, retail profits, and wholesale profits.

   b. Nationally, affirmation requirements do not seem directly to impact on retail liquor prices.

   c. Kansas minimum retail markups seem to be more applicable to case acquisition cost than bottle acquisition cost.

Policy Consequences

Kansas liquor laws seek to achieve multiple goals, goals that are often mutually inconsistent. Quite different attitudes regarding alcoholic liquor are held by individual Kansans--temperance vs lowest possible price vs maximum availability vs maximum economic efficiency vs maximum State tax vs increased economic development vs maximum retail and/or wholesale profits. Because of this situation, a simple set of recommendations to reform retail liquor laws and regulations cannot be provided. However, based on this industry study and general economic reasoning, a number of policy modifications can be analyzed. The particular policies selected for analysis are those major alternatives that emerged during the course of this research. While single policies are discussed, a combination of individual policy modifications could be combined

into a general reform program. Even with such a program, individual policy changes need not be implemented at the same time; a phase-in or a sunsetting arrangement would ease transition difficulties.

Markup, minimum retails markups could be raised, lowered, or eliminated. Eliminating minimum markups (with or without a requirement that selling prices, at least, be equal to acquisition cost) would increase retail price flexibility. For strong beer, where such flexibility now exists, retail markups are lower than the current minimum markups. Given this fact, it is likely that increased flexibility would increase competition and lower average retail liquor prices. It may be that small stores would continue to provide convenience, a relatively narrow selection, and maintain their economic viability through higher than average margins and prices.

At least to some extent, liquor purchases would be stimulated. In addition, out-of-state purchases would decrease as a result of lower relative prices for Kansas liquor. The impact on retailer profits is less certain; on balance, they are likely to fall. Along with the removal of the encouragement to enter the industry (which currently is the result of well publicized, rather high minimum markups) would accelerate the decline in the number of retailers. Such a change could improve the economic efficiency of the industry.

To some extent, similar results would follow from a reduction in minimum retail markups. It is clear that there are no objective standards that can be employed to determine the proper level of the minimum markups or the relative minimum markup on different categories of liquor products. Reducing markups would not have the advantage of removing fixed minimum markups. Of course, increases in minimum markups would have opposite consequences to those

described above.

Another aspect of the markup situation relates to quantity discounts, on case purchases, and markups on sales to private clubs. Again, there is a general lack of an objective criteria for the determination of these markup/markdowns. Present practices of the "club business" would indicate some retailers feel that sales to private clubs are very desirable. It must be that the margins are higher than they need be, to assure that the private clubs are being serviced.

Entry Restrictions, currently, entry restrictions into the Kansas retail liquor industry are fairly minimal. However, they could be further liberalized. This could be accomplished by permitting multiple licenses under the same ownership--chain operations. Permitting multiple outlets for the same ownership likely would increase price competition and repeat the consequences outlined above. As economies of scale are present in this industry, profits for the chains would improve relative to the profits of the independent operators. Small retailers would, even more, be forced to rely on non-price competition in order to maintain their existence. Additionally, large chains would be able to demand "better" treatment from wholesalers and would, thereby, create another potential difficulty for the ABC Board.

Additionally, liquor sales could be allowed by nontraditional Kansas retailers--such as grocery stores, drug stores, etc. This could be restricted to some products, such as wine and/or strong beer, or applied to all alcoholic liquor. Again, increased price competition would result. In addition to the impact of reduced liquor prices described above, it is likely that increased availability would stimulate consumption. To the extent that this would occur,

the impacts would be accentuated. Profits and sales of current retailers would decline and their number would be reduced.

Alternatively, restrictions on entry could be tightened, such as those employed in some states where the number of available licenses are related to population. Because such restrictions are not used to limit the number of Kansas private clubs, it would be peculiar to apply them to alcoholic liquor retailers. To the extent that restrictions would result in monopoly profits to licensed retailers, the license would come to have a value. Monopoly profits accruing to the retailers would not reduce retail liquor prices--the retailers would be unduly enriched. States that have been seeking to eliminate restrictive licensing have faced serious problems as a consequence of the valuable licenses.

A final policy change, equivalent to altering entry restrictions, would change retailing by permitting private clubs to purchase directly from wholesalers. The clubs may feel this would be desirable because they reason that their acquisition cost would decline. There seems little enthusiasm for this change on the part of retailers or wholesalers. The retailers do no want to lose customers and, at least, a contribution to covering fixed costs; wholesalers do not want the additional customers and the associated costs.

Taxes, changes in Kansas liquor taxes would directly impact on alcoholic liquor prices. Higher prices would reduce consumption; lower prices would increase consumption. These consumption impacts would have the consequences outlined above. Profits would decline and the number of retailers would be reduced as consumption is lowered in response to a tax increase. A major advantage of this policy change would be the additional tax revenue received by the State.

Other Activities, Kansas has placed very difficult regulatory responsibilities on the ABC. This is particularly the situation because the level of resources provided to the ABC are inadequate to enforce the "letter of the law." A simple solution would be to relax many of the ABC rules and regulations. Involved could be: advertising (point of sale and other), extension of credit, use of credit cards, provisions of delivery and other services to private clubs, permissible minimum out-of-state purchases, sales of mixes and other products. Such a relaxation would likely result in increased consumption and have mixed impacts on retailer costs. The consequences of these events are described above.

FOOTNOTES

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SUPPLEMENT TO

THE KANSAS RETAIL LIQUOR INDUSTRY

Final Report to the Department of Revenue

State of Kansas

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In order to produce profitability data for Kansas retail liquor firms, four steps need to be followed.

Step 1. Sample

The records of the Liquor Enforcement Tax collections should be processed to produce a list of retailers. A criterion for inclusion should be that twelve monthly tax returns were filed and that sales occurred in each month. This needs to be done each calendar year. Approximately 900 filers are likely to be identified by this procedure. Their account number, county identification, and annual sales need to be identified.

Step 2. Subsample

The filers identified in Step 1 must be sorted into three groups. Group 1 would include those retailers located in Kansas border counties, Group 2 would include those retailers located in Kansas counties that are one county distant from the State's border, and Group 3 would include those retailers located more than one county distant from the State's border. Within each of the three groups, retailers should be listed in decreasing order of their annual sales. After a random start, in each of the three groups, every third retailer should be selected as a subsample. The name of the individual holding the license must be identified for this subsample, of about 300.

Step 3. Income Tax Data

For each of the identified individuals identified in Step 2, Schedule C of their Federal Individual Income Tax must be obtained from the Division of Taxation. There is a potential timing problem. Ideally, the same twelve months of operation would be reported for the Income and Liquor Enforcement Taxes. This requires that the effort be undertaken after April 15th of each year. Still some individuals may not be found or, because they have been granted an extension of time to file, comparable data may not be available. The subsample should be restricted to those retailers with comparable data--about 200.

On Schedule C, line A asks for main business activity. Individuals must be omitted from further analysis if they identify their business as more, or other than, a retail liquor store. For each of the remainder, a check between sales reported under the Liquor Enforcement Tax and gross receipts or sales reported on line 1a of Schedule C must be made. If these figures are very different, the individual must be removed from further consideration--and reported to the audit division. About 150 individuals should remain in the subsample.

The following data should be gathered for each retailer, from Schedule C.

Line	Identification
1a	Gross Receipts or Sales
2	Cost of Goods Sold and/or Operations
3	Gross Profit
5	Gross Income
17	Interest on Business Indebtedness
22	Rent on Business Property
28c	Wages - After Jobs Credit
31	Total Deductions
32	Net Profit or (Loss)
Part III,1	Inventory at Beginning of Year
Part III,7	Inventory at End of Year

If there are significant differences between gross profit and gross income, the data would be questionable. The individual may be reporting nonretail liquor activity on Schedule C. If this occurs, the individual must be dropped from further consideration. About 125 retailers should remain in the subsample.

Step 4. Analysis

Given the data produced in Step 3, a rather detailed level of analysis would be possible. Profitability (gross and net) can be calculated for all firms; regional and/or volume classes can be employed to provide further detail. The inventory figures and

a four-way (interest, rent, wages, and other) expense breakdown of operating expenses could provide information for further detailed analysis.

Should a fine level of analysis be desired, the subsample would need to be expanded--from every third Liquor Enforcement Tax filed to every second or less.

Finally, conducting this analysis on a continuing basis would provide information on the trends of profitability, etc. for the Kansas retail liquor industry.