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The Social and Revenue Effects of State Alcoholic Beverage Control

By WILLIAM E. SPELLMAN and MARK R. JORGENSON

ABSTRACT. The operation of a *state monopoly* on retail sales of *alcoholic beverages* is often viewed as an outdated relic of Prohibition. However, the *control states* have a significantly lower *consumption rate per capita* and the price level is lower than in *open* or *competitive states*. The *alcoholism* rate is also lower in the control states than in the open states. The alcoholism and consumption conclusions are valid even given regional socioeconomic differences. Even though the prices are lower in control states than open states, the competitive forces in neighboring states cause prices to be lower in the retail outlets on the border; hence, *illegal transportation of liquor* causes the official consumption rate of the in-state border counties to be lower than the interior counties. The *social and revenue* effects of state control make it an effective policy.

I

Regulation or Control of the Liquor Trade

IN 1975, AMERICANS SPENT \$13.3 billion on alcoholic beverages, approximately 3 percent of personal disposable income.¹ Since prohibition, all states have regulated or controlled the sale of liquor at wholesale or retail in some manner. These state regulations and laws range from a system of licensing and taxation to a state monopoly being the only retail distributor. State and local revenues from the sale of alcoholic beverages were \$4.4 billion in 1976.

Presently 18 states have created a state agency monopoly to control the distribution and sale of alcoholic beverages. Since the passage of the Twenty-first Amendment repealing prohibition, no "control state" has elected to end its monopoly of the liquor traffic, and conversely, no "open state" has chosen to establish a liquor monopoly. The common feature of the control states is that they have either a wholesale and/or retail monopoly established as a governmental unit. Each state, however, has a dissimilar system of taxing, licensing, and distribution. The political inertia of the state legislatures with respect to the control of the distribution of alcoholic beverages indicates, to

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some extent, at least, a lack of research and information on the social consequences of this policy area. This paper will attempt to draw some comparisons between control states and open states which should throw light upon these policies if not resolve the issue of the social costs and benefits of control. Few state legislatures have undertaken more than a cursory review of their systems or considered the consequences of their laws.

II

Raising Public Revenues Discourages Consumption

THE DIVERSITY OF TAX RATES, of geographic and demographic factors, and product control of the 18 control states is striking. In 1976 the per capita revenue from liquor sales was \$22.71 for the control states and \$19.70 in the open states.² This indication that control states have a significantly higher level of per capita revenue is often the basic argument for a "sin tax" to raise public revenues for socially beneficial purposes by taxing or fining socially adverse activities. Morin argues that the revenue indication may indeed be illusory as control states sacrifice monies from corporate income tax levies, capital gains taxes, mercantile license taxes, gross business income taxes, and unemployment taxes.³ Attempts to estimate the net tax revenue between control and open states were inconclusive due to inconsistencies in the collection data of the various states.

The federal liquor excise tax of \$10.50 per proof gallon has not changed since 1951, but state and local taxes have increased considerably in the last two decades. The federal government received 72.3 percent of the total tax revenues from liquor sales in 1964, but only 64.1 percent in 1974.⁴ The combined tax effect raised the price of liquor above its cost of production to the extent that 52 cents of each dollar spent at the retail level for distilled spirits represents direct taxes.⁵ It follows that the increased price does reduce the consumption of alcohol; hence, the dual effects of raising public revenues and discouraging consumption are achieved in both control and open states depending on the tax levies.

III

Consumption and Demand for Alcoholic Beverages

SINCE LIQUOR REVENUE per capita is higher in control states, one would expect per capita consumption and/or the price of liquor to be higher for this group than for open states. In fact, this is incorrect. Total consumption of distilled spirits in control states averaged 1.65 wine gallons per capita in

1976 while purchases in open states amounted to 2.13 wine gallons per capita.⁶

The obvious rationale for lower consumption in control states is that the political act of establishing state control is indicative of values, attitudes, and beliefs that would discourage alcoholic consumption. A secondary rationale is the nonmarket but increased cost of inconvenience in control states due to the restriction of retail outlets which increases the time and travel costs of purchasing alcoholic beverages.⁷ Total retail sales per capita in open states were 14 percent greater than the control state average in 1976.

The growth rates of consumption per capita in control states and open states in the decade from 1967 to 1976 are respectively 32.7 percent and 30.2 percent which are not statistically different at the one percent level. An

TABLE I
DISTILLED SPIRITS PER CAPITA CONSUMPTION BY REGION, 1976

| Region | Average of | | Average of | |
|----------------------|----------------|------|-------------------|------|
| | Control States | | Noncontrol States | |
| Northeast | n = 3 | 3.50 | n = 3 | 2.31 |
| Mid-Atlantic*** | n = 1 | 1.45 | n = 2 | 2.22 |
| East North Central* | n = 2 | 1.64 | n = 3 | 2.01 |
| West North Central** | n = 1 | 1.41 | n = 6 | 1.79 |
| South Atlantic**** | n = 3 | 1.59 | n = 6 | 3.11 |
| East South Central | n = 2 | 1.51 | n = 2 | 1.38 |
| Mountain* | n = 4 | 1.69 | n = 4 | 3.32 |
| Pacific** | n = 2 | 1.88 | n = 3 | 2.79 |
| West South Central | n = 0 | | n = 4 | 1.47 |

**** significantly different at .05

*** significantly different at .10

** significantly different at .20

* significantly different at .30

earlier argument was that the consumption behavior in control states and open states was the result of dissimilar populations rather than structural differences in the taxes or distribution systems.⁸ Regression analysis was used to see if price and income differences between control and open states could explain the difference in per capita consumption, but these variables could not explain the differences at any significant statistical level of acceptance. Spearman rank correlations were also insignificant for income and price variables with consumption per adult in control, open and all states.

To test the geographic and demographic influences on alcoholic consumption further, a regional model was used to compare consumption per capita of control and open states within each of the nine statistical geographic regions. Table I shows the results of this regional breakdown.

Two regions had a higher level of per capita consumption than noncontrol states in the respective regions. In the Northeast, New Hampshire and Vermont have lower prices than surrounding states and considerable tourism which accounts for the increased consumption. The East South Central region also had higher consumption for control than noncontrol states. Since the West South Central had no control states, a comparison could not be made. The lower consumption in control states significantly weakens the geographical and demographic argument and strengthens the argument that control states restrain liquor consumption. The differing degree of control by each state may indeed alter the impact on consumption.

To see if prices were higher in control states than open states, a simple average of a 1977 price index of eight selected types and brands of spirits was constructed. This index revealed that control states set an average price of \$6.56 compared to \$6.71 in open states. To check for distortions due to varying consumption, each type was studied by means of an index weighted by consumption for all fifty states for a ten-year period beginning in 1967. This weighted index showed the mean price for control states to be \$6.12 and for open states \$6.44.

This indicates a "liquor Laffer curve" in that the lower prices generate more revenue per capita for the control or "monopoly" states than for the open or "competitive" states. These results indicate that the tax and license system of control states generates more revenue due to different demand elasticities between the states or due to lower costs of operation for the control states which allow for lower market prices due to economies of scale. The economies of scale in control states have been verified.⁹ Earlier research indicated that control states were not maximizing revenues with their tax or pricing policy and that indeed price increases would increase the state revenue.¹⁰

The consumption figures per capita must in fact be viewed with some doubt because of illegal activities that are not recorded in the official statistics. Illegal production or "moonshine" production is not recorded, but this would not appear to be of significant magnitude to alter the conclusions concerning consumption behavior. The other illegal activity is the transportation of alcohol sold in one state but transported to another state. This "bootlegging" can be significant in consumption behavior.

The state of Iowa was used to estimate the impact of this "bootlegging" activity. The retail sales figure for all of the border counties was divided by their population and compared to the average per capita sales for the interior counties of Iowa. The border counties' average consumption was only 70 percent of the average of the interior counties. For 1977, this would represent over \$8 million of sales or that Iowa lost 12 percent of total retail sales

because liquor was bought from border states and transported into Iowa. This estimate perhaps understates the illegal activity because five of the six states bordering Iowa had higher legal drinking age limits so one would expect an increase in sales for border counties due to this demand. Also this calculation does not consider the illegal transporting of liquor from lower cost states to the interior Iowa counties by their residents. A survey of liquor prices of out-of-state border cities revealed that their prices were indeed much lower than their respective state averages or the average prices charged by similar cities within each respective state. This would also confirm the potential market for bootleg alcohol.

TABLE II
ESTIMATED ALCOHOLISM PER 100,000, BY REGION, 1976

| Region | Average of Control States | | Average of Noncontrol States | |
|------------------------|------------------------------|-------|---------------------------------|--------|
| Northeast**** | n = 3 | 8,377 | n = 3 | 11,735 |
| Mid-Atlantic** | n = 1 | 9,180 | n = 2 | 10,915 |
| East North Central* | n = 2 | 9,125 | n = 3 | 9,788 |
| West North Central* | n = 1 | 5,840 | n = 6 | 6,935 |
| South Atlantic** | n = 3 | 5,217 | n = 6 | 7,858 |
| East South Central**** | n = 2 | 4,335 | n = 2 | 6,505 |
| Mountain*** | n = 4 | 5,095 | n = 4 | 8,720 |
| Pacific* | n = 2 | 5,645 | n = 3 | 7,600 |
| West South Central | n = 0 | n. a. | n = 4 | 6,165 |

**** significantly different at .05

*** significantly different at .10

** significantly different at .20

* significantly different at .30

IV

Control Systems Reduce the Rate of Alcoholism

ALCOHOLISM IS AN EXTERNALITY that conceptually can be controlled or reduced by extreme control systems to discourage consumption or to increase the cost or decrease the availability of alcoholic beverages, but drinking behavior and alcoholism are largely determined by attitudes toward alcohol. One significant factor in most control states is the prohibition of advertisements for alcoholic beverages since the state is the monopoly retailer. To the extent that advertising creates demand, this restriction would have a restrictive influence on consumption and attitudes toward alcohol.

It has been argued that "those states with the most restrictive liquor laws have the least need for them because the same attitudes that gave birth to the

laws would also tend to restrict consumption even without the laws."¹¹ To test the validity of this conclusion, a regional model was again used to determine the incidence of alcoholism in control and open states in the eight statistical geographic regions of the United States. Numerous regression models were used to try to explain alcoholism on a nationwide basis, but none of the equations were statistically significant at the .20 level. Using estimated alcoholism per 100,000 population,¹² the control state average rate of alcoholism was significantly lower than the open state average in each of the eight regions. Table II shows the regional results. Control systems indeed appear to be effective in reducing the rate of alcoholism.

V

The Social Costs of Liquor Consumption

ALCOHOLISM IS THE MOST OBVIOUS social cost of the alcoholic beverage industry, but there are numerous other costs that result from this sector. As economic theory would suggest, the economies of scale in the monopoly system do generate lower unit costs because of economies in purchasing, wholesaling, and retailing. Efficiency in use of labor and capital are indeed enhanced by restricting the number of off-premise sales outlets.

A nationwide study indicated only a spurious correlation between control laws and alcoholism rates and alcohol-related problems.¹³ Alcohol-related mortalities per capita were found to have a significant relationship with per capita consumption.¹⁴ A survey conducted by the Iowa Department of Substance Abuse in 1977 found that 53 percent of the inmates surveyed at state penal institutions had been drinking at the time they committed the offense for which they were incarcerated. One common perception is that there are fewer robberies of state liquor stores than private ones in open states; however, there are no consistent data to test this argument. The isolated data on control states shows an extremely varied robbery rate; furthermore, if this perception is correct, it may just mean that other retail establishments are robbed more frequently. Although data on alcohol-related arrests is not available on a national basis, a comparison of Iowa, a control state, and Nebraska, an open state, showed that Iowa had a significantly lower rate of arrest for drunkenness and for driving under the influence of alcohol per capita than did Nebraska.

The social cost argument is indeed very speculative and a ripe area for sociological and economic research. The validity and social benefit of control laws could be greatly enhanced with conclusive findings on this issue; however, the consumption, revenue, and alcoholism conclusions give significant weight to the conclusion that control systems are socially beneficial and not a relic of temperance era morality.

Notes

1. *The Liquor Handbook* (New York: Gavin-Johnson Associates, Inc., 1978), p. 60.
2. *Public Revenues from Alcohol Beverages* (Washington, D.C.: Distilled Spirits Institute, 1976), pp. 16–17.
3. Bernard A. Morin, *Liquor Consumption and Prices by State* (unpublished dissertation, Duke University, 1966), p. 81.
4. *Public Revenues from Alcohol Beverages*, *op. cit.*, pp. 9, 17.
5. *1977 Tax Briefs* (Washington, D.C.: Distilled Spirits Institute, 1977), p. 2.
6. *Annual Statistical Review* (Washington, D.C.: Distilled Spirits Institute, 1976), p. 20.
7. New York State Moreland Commission on Alcoholic Beverage Control Law, *The Relationship Between the Number of Off-Premise Licenses and Consumption of Alcoholic Beverages* (New York City, 1963), p. 11.
8. J. D. Morgan, "Taxation of Alcoholic Beverages," *Report of the Revenue Laws Commission* (Springfield, Ill.: State of Illinois, 1949), p. 569.
9. Morin, *op. cit.*, p. 92.
10. Karl B. Marx, "An Analysis of Some of the Factors that Determine the Variation in Per Capita Consumption and Revenue" (unpublished Ph.D. dissertation, University of Illinois, 1961), p. 69; and William A. Niskanen, *The Demand for Alcoholic Beverages* (Santa Monica: Rand Corporation, 1962), p. 48.
11. Harold Mulford, *Alcohol and Alcoholics in Iowa* (Iowa City, Ia.: Mental Health Authority, 1965), p. 39.
12. *Statistical Abstract of the United States* (Washington, D.C.: Bureau of the Census, 1977).
13. Reginald G. Smart, "The Relationship of Availability of Alcoholic Beverages to Per Capita Consumption and Alcoholism Rates," *Journal of Studies on Alcohol*, 38 (Nov. 5, 1977), p. 895.
14. *Report and Recommendations of the Governor's Special Commission on Liquor Control* (Seattle: State of Washington, August, 1978), p. 42.

In Memoriam: Hans Staudinger, 1889–1980

DR. HANS STAUDINGER, retired dean of the Graduate Faculty of Political and Social Science of the New School for Social Research and distinguished economist and economic adviser, died on Feb. 25, 1980, a few months after his 90th birthday, and in his passing this *Journal* lost a valued supporter.

Dean Staudinger typified what has almost been forgotten, the commitment to democracy of a great section of the German people many centuries before the idea of the rule of the people arose in England and France. He displayed that in his doctoral dissertation on the structure and spirit of the labor movement, *The Individual and the Community*, and in becoming one of the most popular youth leaders.

After military service in the first world war, he went to work for the Ministry of Food in the Weimar Republic in 1917, and rose to the rank of