



Government-Run Liquor Stores *The Social Impact of Privatization*

JOHN PULITO & ANTONY DAVIES, PHD

EXECUTIVE SUMMARY

A proposal that has circulated in Harrisburg for years is divesting, selling, or privatizing Pennsylvania's state-owned liquor stores. This discussion is particularly relevant today given the recent drop in Pennsylvania tax collections and long-term taxpayer obligations. Geoffrey Segal and Geoffrey Underwood of the Reason Foundation estimate that Pennsylvania could raise \$1.7 billion from the sale of its wholesale and retail liquor stores. While such a sale would represent only a one-time cash inflow, Nathan Benefield of the Commonwealth Foundation estimates that Pennsylvania would continue to take in close to \$350 million annually in alcohol sales tax.

Privatization is associated neither with increased alcohol consumption nor increased traffic fatalities involving impaired drivers.

What gives many pause is the social impact of privatization. Myriad comparisons of privatized markets to state-controlled markets suggest that there are unquestionable advantages to privatization. Of concern are the possible disadvantages. Liquor control proponents maintain that, because the state can directly limit the times and locations at which alcohol can be purchased, and because state stores are not profit driven like private firms, privatization would result in increased alcohol consumption and problems associated with alcohol consumption, such as impaired driving.

A comparison of states with varying degrees of privatization in the retail and wholesale markets for alcohol over the period 1970 through 2006 suggests that privatization is associated neither with increased alcohol consumption nor increased traffic fatalities involving impaired drivers.

- States that recently privatized their liquor industries experienced a significant decline in per-capita alcohol consumption.
- While not conclusive, we find evidence that is consistent with the existence of a cross-border effect wherein liquor control encourages Pennsylvanians to purchase in neighboring privatized states.
- While states that have liquor controls experience somewhat lower consumption of alcohol, we find no evidence that the *degree* of control matters. Among privatized (license) states and states with varying degrees of control, states with controls on wholesale markets only had the lowest consumption rates.

Divestiture of Pennsylvania's state liquor stores would represent a financial windfall to the state, while posing no threat to public safety, as it would not result in the social ills many opponents of privatization fear.

- States that have liquor controls experience significantly higher DUI-related fatality rates than states without controls.
- Adjusting for DUI enforcement, states with the highest degree of liquor control exhibited the same alcohol-related driving deaths as did license states. States with lesser controls exhibited significantly fewer DUI-adjusted deaths.
- Evidence shows there is no significant reduction in underage drinking among control states versus license states. Pennsylvania (a full control state) ranks 22nd among the 48 states in the sample for incidence of underage drinking.

Examples at the state and federal levels demonstrate that government is not good at running industries. Repeatedly, the private sector shows that it can provide higher quality goods and services at lower costs. However, arguments might be made for state control as a means of achieving some desired social outcome. In Pennsylvania's case, advocates claim that the social goals of reducing alcohol consumption, underage drinking, and alcohol-related traffic deaths justify controlling wholesale and retail alcohol markets.

Evidence from 48 states over time shows no link between market controls and these social goals. Divestiture of Pennsylvania's state liquor stores would represent a financial windfall to the state, while posing no threat to public safety, as it would not result in the social ills many opponents of privatization fear.

INTRODUCTION: ADVANTAGES AND DISADVANTAGES OF PRIVATIZATION

The adoption of the 21st Amendment granted states the power to regulate, sell, and distribute alcoholic beverages. To date, nineteen states have opted to impose some form of control on liquor sales, ranging from controls on wholesale markets only to controls on retail and wholesale markets. Pennsylvania is one of only eight states that control both wholesale and retail markets. From time to time, Pennsylvania state policymakers have considered privatizing the state store system. This discussion is particularly relevant today given the recent drop in Pennsylvania tax collections and long-term taxpayer obligations.

Geoffrey Segal and Geoffrey Underwood (2007) of the Reason Foundation estimate that Pennsylvania could raise \$1.7 billion from the sale of its wholesale and retail liquor stores.¹ While such a sale would represent only a one-time cash inflow, Nathan Benefield of the Commonwealth Foundation estimates that Pennsylvania would continue to take in close to \$350 million annually in alcohol sales tax.² What gives many pause is the social impact of privatization. Pennsylvania currently ranks 34th out of 48 states for per-capita alcohol consumption. Proponents of the state liquor system believe that this is due, at least in part, to the control exercised by the state liquor system.

Pennsylvania is one of only eight states that control both wholesale and retail markets.

In testimony before the Pennsylvania Senate, Segal and Underwood discussed the following possible advantages and disadvantages to privatization. Among these are:³

Possible Advantages of Privatization

- Increased efficiency (i.e., lower consumer prices)
- Improved customer service
- Additional state revenue from the sale of liquor licenses

Possible Disadvantages of Privatization

- Increased alcohol consumption
- Increased incidence of underage drinking
- Increased alcohol-related motor vehicle accidents (DUI)

Myriad comparisons of privatized markets to state-controlled markets suggest that there is little question as to the advantages of privatization. Of concern are the possible disadvantages. Liquor control proponents maintain that, because the state can directly limit the times and locations at which alcohol can be purchased, and because state stores are not profit driven as are private firms, privatization would result in increased alcohol consumption and increased problems associated with alcohol consumption such as impaired driving.

In this paper, we examine data from states with varying levels of privatization over the period 1970 through 2006 to explore the relationship between privatization, alcohol consumption, and fatalities due to impaired drivers. We find evidence that more stringent state control of liquor markets has the reverse effect, and actually is associated with increased consumption and alcohol-related highway deaths.

DEREGULATION: IOWA AND WEST VIRGINIA

Iowa and West Virginia deregulated their retail liquor markets in 1987 and 1990, respectively, providing two recent case studies in the effect of deregulation on consumption. Underwood and Segal found no evidence of increased alcohol consumption following deregulation in either Iowa or West Virginia. They also noted that though each individual outlet sold less alcohol on average compared to individual state-run stores, alcohol purchases were being distributed over a greater number of stores.

In Figures 1 and 2, the vertical line represents the point in time at which Iowa and West Virginia deregulated their retail liquor markets.

Following deregulation, both states experienced a statistically significant decline in average per-capita consumption of alcohol (versus the period prior to deregulation). Total per-capita consumption of alcohol in Iowa and West Virginia fell 5.9% and 4.1%, respectively, post- versus pre-regulation. Both states also experienced an apparent shift in consumption away from higher alcohol-content products. In Iowa, consumption of liquor fell 27%, while consumption of wine and beer rose 29% and 2%, respectively. In West Virginia, consumption of liquor and wine fell by 39% and 12%, respectively, while consumption of beer rose 18%.

One possible explanation is a “convenience effect.” When the retail market is regulated, it is less convenient for consumers to purchase alcohol (due to restricted hours, restricted retail locations, and a reduced focus on serving the customers’ needs). Consumers will respond to the reduced convenience by increasing the amount of alcohol they purchase per trip so as to reduce the number of trips they make over time, and by buying more high-alcohol products so as to reduce the volume of product they must transport.

Figure 1. Iowa: Alcohol Consumption per Capita (age 14 and older)⁴

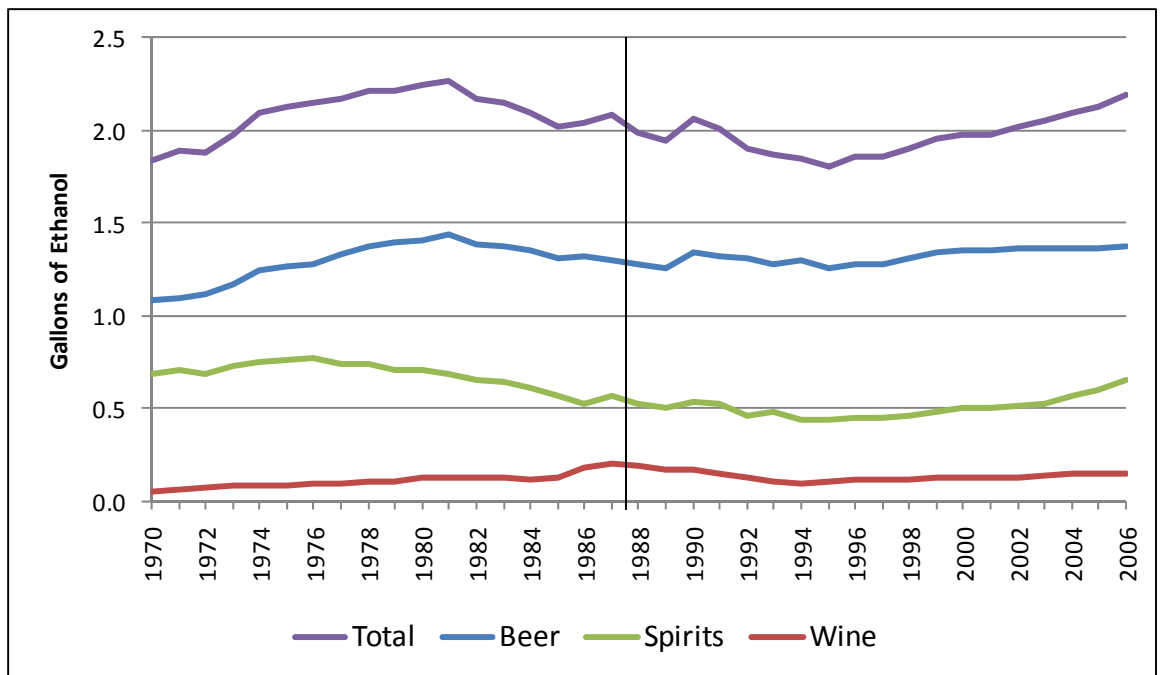
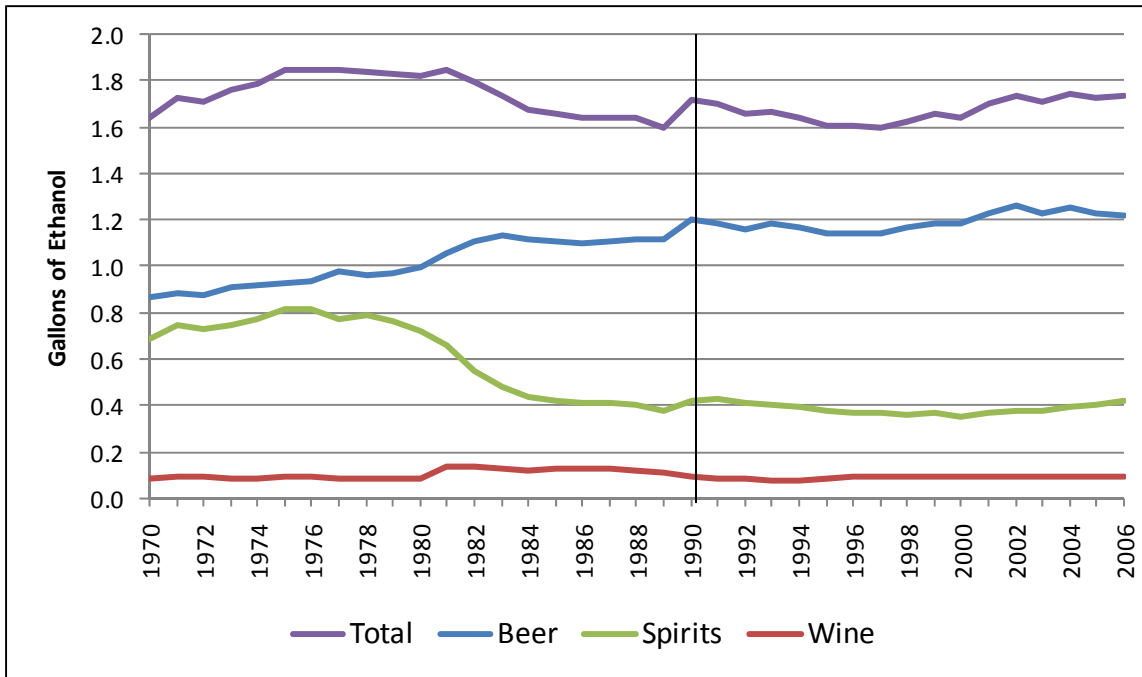


Figure 2. West Virginia: Alcohol Consumption per Capita (age 14 and older)⁵



Total per-capita consumption of alcohol in Iowa and West Virginia fell post- versus pre-regulation. Both states also experienced an apparent shift in consumption away from higher alcohol-content products.

Figure 3. Iowa: Per Capita Consumption Before and After Deregulation⁶

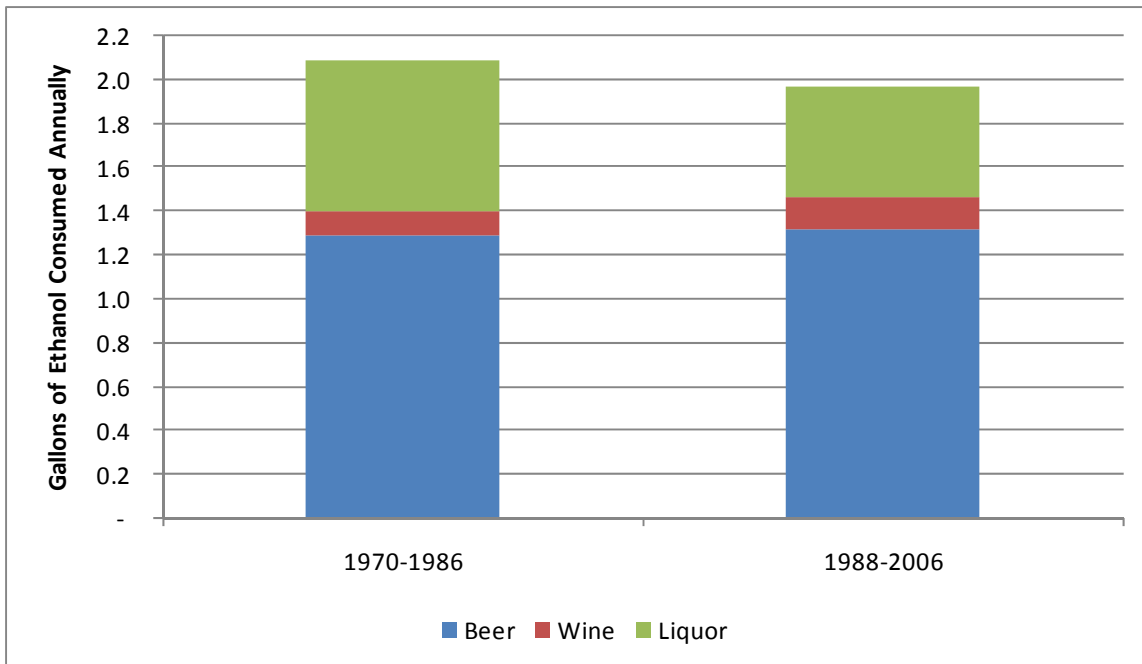
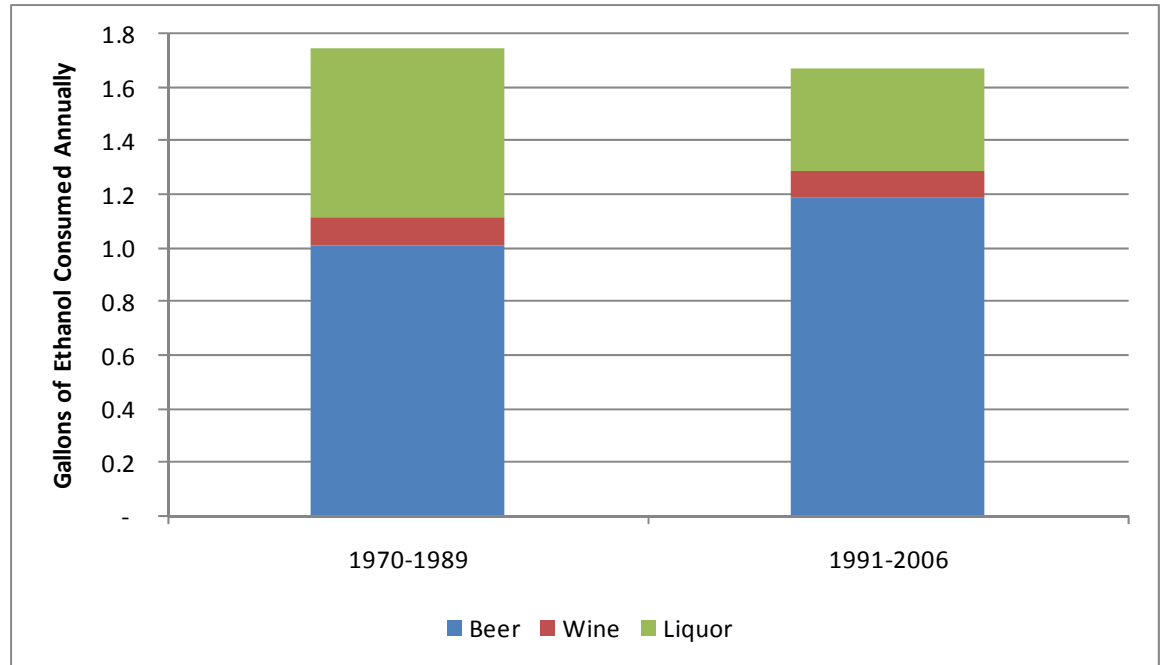


Figure 4. West Virginia: Per Capita Consumption Before and After Deregulation⁷

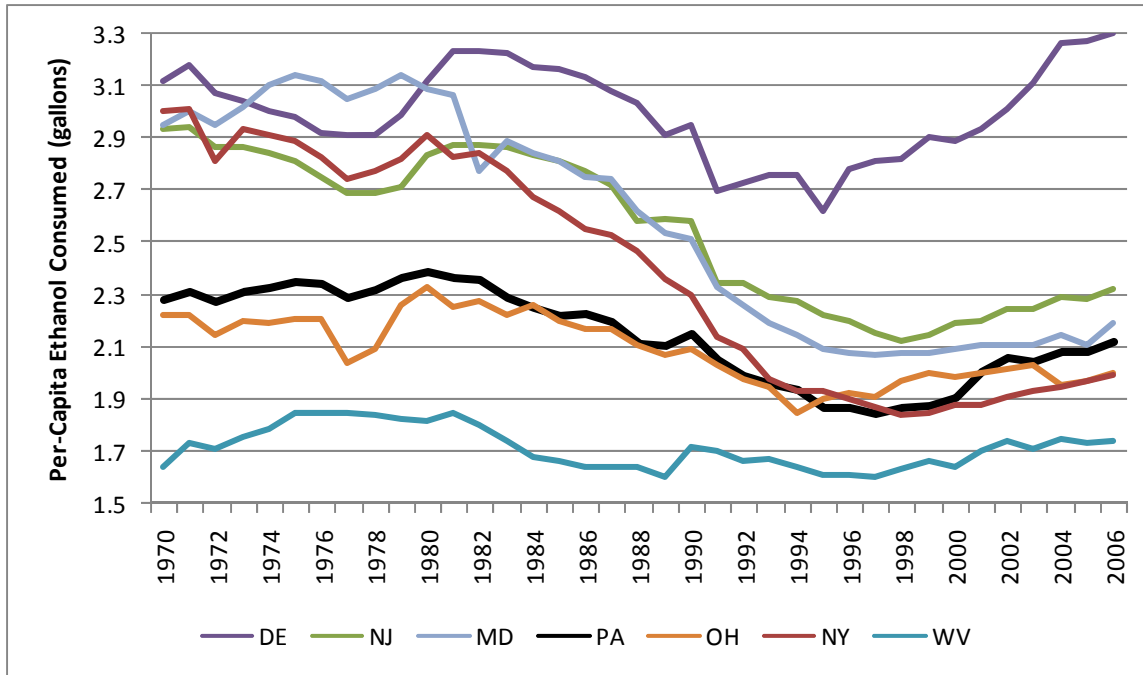
In summary, the evidence, while not conclusive, is consistent with the existence of a cross-border effect wherein regulation encourages Pennsylvanians to purchase in neighboring deregulated states.

THE CROSS-BORDER EFFECT

It is possible that state control may encourage Pennsylvanians to purchase from border states that are deregulated—the cross-border effect—because of a greater number of retail outlets, more convenient operating hours, and/or lower prices in the deregulated states. If true, we should observe per-capita consumptions among deregulated bordering states to be greater than per-capita consumption in Pennsylvania. Figure 5 shows the per-capita consumptions over the period 1970 through 2006 for Pennsylvania and its bordering states. Pennsylvania exhibits a per-capita consumption that is very similar to that of Ohio, the only regulated border state.⁸ However, Pennsylvania’s per-capita consumption is significantly less than those of the deregulated border states, with the exception of West Virginia.⁹ With the exception of the comparison to West Virginia, the differences in consumption are what one would expect to observe if there were cross-border effects.

Confounding this comparison, however, is the difference in taxes. Pennsylvania’s tax on a gallon of spirits was \$6.48 in 2006 versus \$6.44 for New York, \$4.40 for New Jersey, \$3.75 for Delaware, \$1.70 for West Virginia, and \$1.50 for Maryland.^{10,11} Because Pennsylvania’s tax is greater than the taxes in the deregulated border states, it is unclear whether the difference in per-capita consumptions might be due to deregulation or due to differences in tax rates. Adding weight to the argument that the difference is due to deregulation is the case of Ohio, where the tax (\$2.25 per gallon) is one-third that in Pennsylvania. Yet Ohio’s per-capita consumption is identical to Pennsylvania’s. In summary, the evidence, while not conclusive, is consistent with the existence of a cross-border effect wherein regulation encourages Pennsylvanians to purchase in neighboring deregulated states.

Figure 5. Comparison of Per-Capita Alcohol Consumption, Pennsylvania versus Border States¹²



NABCA defines a control state as one in which a controlled distribution system substitutes for the private marketplace in the wholesale and/or retail sale of alcohol.

CLASSIFICATION OF “CONTROL” STATES:

What we have been describing as “regulated” and “deregulated” states, the National Alcohol Beverage Control Association (NABCA) classifies as “control” and “license” states, respectively. Specifically, NABCA defines a control state as one in which a controlled distribution system substitutes for the private marketplace in the wholesale and/or retail sale of alcohol. It is reasonable to assume that there are measurably different effects when the control is limited at the wholesale versus retail level. To examine these differences, we classify states according to the following levels of regulation:

Table 1. Regulation Classifications

NABCA Control <i>Retail or Wholesale Controlled</i>	Alcohol sales are controlled at either the wholesale or retail levels. This is NABCA’s definition of “control”.
Full Control <i>Retail and Wholesale Controlled</i>	Sales of all three types of alcohol (beer, wine, and liquor) are controlled at the retail and wholesale levels.
Moderate Control <i>Partial Retail and Wholesale Controlled</i>	Sales of only one type of alcohol (beer, wine, or liquor) are controlled at the retail level, and sales of all three types are controlled at the wholesale level. ¹³
Light Control <i>Wholesale Controlled</i>	No sales are controlled at the retail level, and sales of all three types of alcohol are controlled at the wholesale.
License <i>No Control</i>	Alcohol sales are not controlled.

Table 2 shows states belonging to the various regulation classifications over the period 1991 through 2006. States not listed are License states. With the exception of Montgomery County, Maryland is a License state. However, because our data is not at the county level, we cannot distinguish between sales occurring within and outside Montgomery County. For this reason, Maryland is excluded from our analysis.

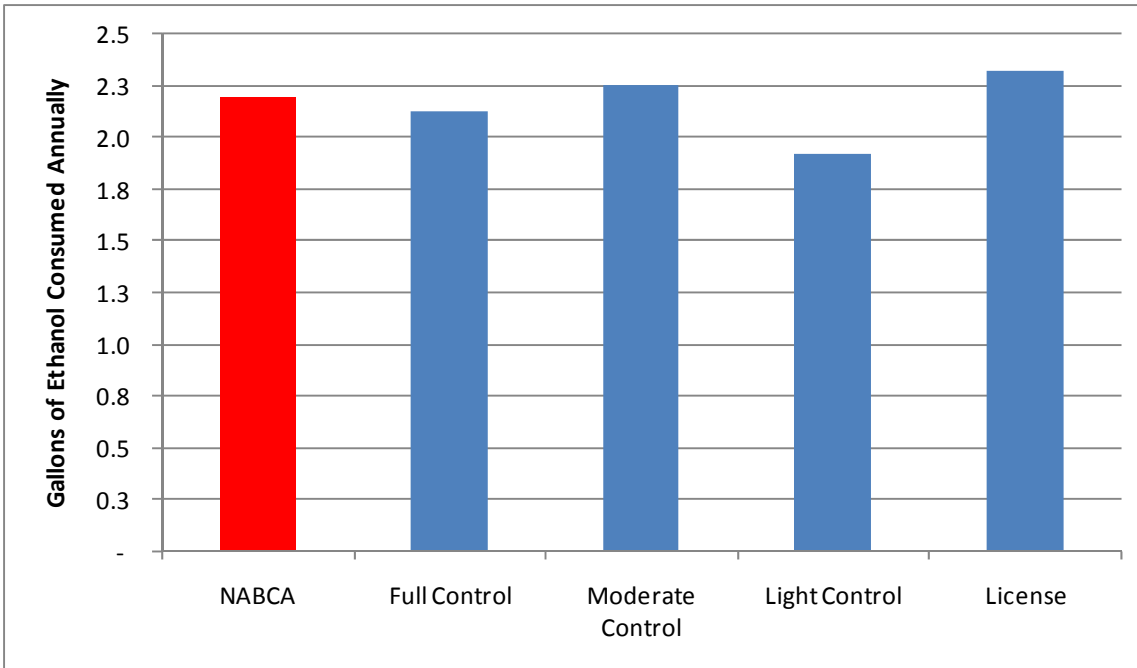
Table 2. States According to Regulation Classification

NABCA Control	Full Control	Moderate Control	Light Control
<i>Retail or Wholesale</i>	<i>Retail and Wholesale</i>	<i>Partial Retail and Wholesale</i>	<i>Wholesale</i>
Alabama	Alabama	Idaho	Iowa
Idaho	Maine	Iowa	Michigan
Iowa	Mississippi	Michigan	West Virginia
Maine	Montana	New Hampshire	
Michigan	Pennsylvania	North Carolina	
Mississippi	Utah	Ohio	
Montana	Vermont	Oregon	
New Hampshire	Wyoming	Virginia	
North Carolina		Washington	
Ohio		West Virginia	
Oregon			
Pennsylvania			
Utah			
Vermont			
Virginia			
Washington			
West Virginia			
Wyoming			

Consumption then falls significantly as we further reduce regulation from Moderate Control to Light Control, and then rises again as we reduce to License.

ALCOHOL CONSUMPTION PER CAPITA

If it is true that regulating the markets for alcohol results in reduced consumption, we should expect to see greater consumption in states in lower control categories. The figure below shows average per-capita alcohol consumption over the period 1991 through 2006. Average per-capita consumption in states that NABCA defines as “controlled” is 5.5% lower than in License states (2.2 gallons versus 2.3 gallons). This difference is statistically significant, suggesting that control is associated with reduced consumption. However, when we break down the states by *degree* of control (the blue bars in Figure 6), we see that consumption rises as we reduce regulation from Full Control (2.1 gallons) to Moderate Control (2.3 gallons), though the increase is not statistically significant. Consumption then *falls* significantly as we further reduce regulation from Moderate Control to Light Control (1.9 gallons), and then rises again as we reduce to License.

Figure 6. Average Per-Capita Consumption by Regulation Classification, 1991-2006¹⁴

In summary, after breaking states down by level of control, evidence suggests that, while regulating liquor at the wholesale level may contribute to reduced consumption, there is no clear evidence that regulating liquor at the retail level affects consumption.

Although we are examining data over 16 years, because there are only three states in the Light Control classification, it is possible that the sharp decrease in consumption for that group is due to some state-specific effects. In summary, after breaking states down by level of control, evidence suggests that, while regulating liquor at the wholesale level may contribute to reduced consumption, there is no clear evidence that regulating liquor at the retail level affects consumption.

UNDERAGE DRINKING

Advocates of state control argue that because private retailers will be less diligent about carding, control is a necessary protection against underage drinking. If true, we would expect to see an increase in the incidence of underage drinking as we move from control to license states. The National Survey on Drug Use and Health asks respondents aged 12 and over to report their alcohol use over the previous thirty days. The results of this survey show no significant reduction in underage drinking among control states versus license states. Regardless of the degree of control, the average incidence of underage drinking is between 29% and 31% (the differences are not statistically significant). For example, Pennsylvania (a Full Control state) ranks 22nd among the 48 states in the sample for incidence of underage drinking. Of the top-10 states for underage drinking, seven are license states. But, of the bottom-10 states for underage drinking, six are license states. Whether or not the purpose of retail and wholesale control is the mitigation of underage drinking, the data are clear that control has no effect on underage drinking.

Similarly, there is no statistically significant difference in the incidence of binge drinking across the regulation classifications.¹⁶ States with greater control of alcohol retail and wholesale markets do not experience lower average incidences of binge drinking among 12- to 20-year-olds.

Figure 7. Incidence of Underage Drinking by Regulation Classification, 2003¹⁵

States with greater control of alcohol retail and wholesale markets do not experience lower average incidences of binge drinking among 12- to 20-year-olds.

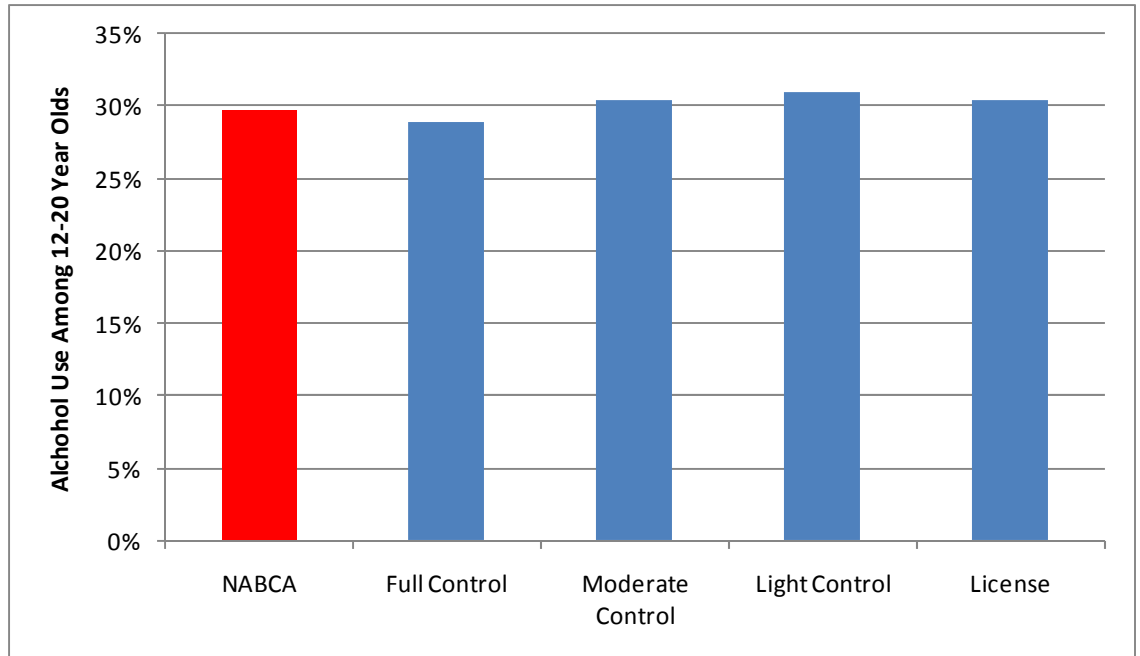
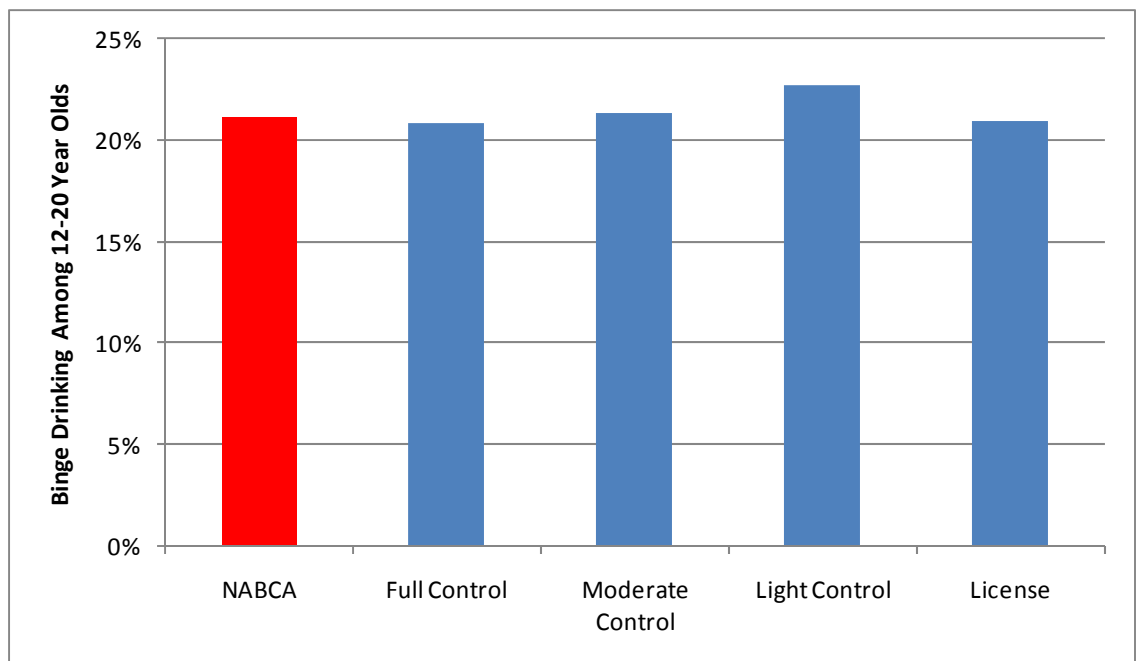


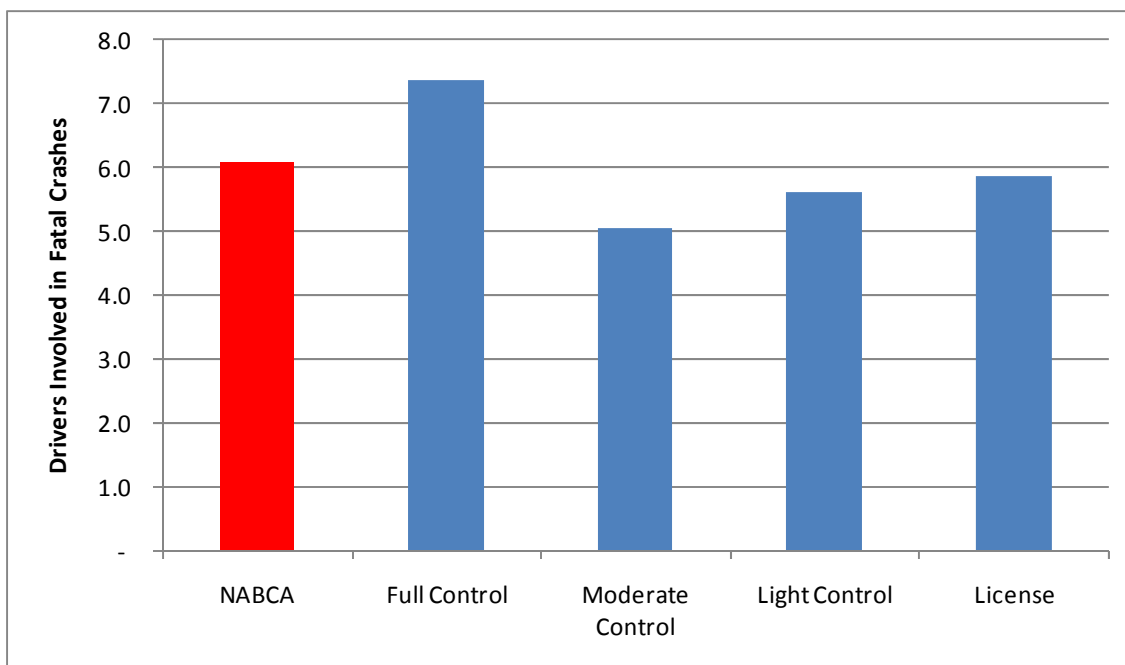
Figure 8. Incidence of Underage Binge Drinking by Regulation Classification, 2003¹⁷



DRIVING FATALITIES

Another argument against privatization is the concern that the number of fatalities resulting from driver impairment would increase. Figure 9 shows the number of drivers (per 100,000 population) involved in fatal accidents for which a driver had a blood alcohol content (BAC) of 0.01 or higher. To clarify, the figure shows the number of impaired drivers *involved* in fatal accidents, not the number of impaired drivers *killed*. The latter measure, while available, is less meaningful as it ignores fatalities that were caused by another driver's impairment. If regulating the markets for alcohol results in reduced fatalities, we should expect to see a lower fatality rate in states in higher control categories.

Figure 9. Average Number of Drivers (per 100,000 population) Involved in Fatal Crashes with BAC 0.01 or Higher, 1991-2006⁴⁹



Not only do control states exhibit higher fatality rates than do license states, Full Control states exhibit fatality rates which exceed fatality rates in license states by 25%.

The average fatality rate in states that NABCA defines as “controlled” is higher (6.1) than that of License states (5.9). This finding is consistent with Rees (1997) who, in a study of Iowa, Ohio, and West Virginia over the period 1985 to 1995, concluded that deregulation would not lead to increased traffic-fatalities.¹⁸ Though the difference is not statistically significant, if we break the states down by degree of control, we obtain a strongly significant difference in fatality rates. States with Full Controls have the highest average fatality rate (7.4), states with Moderate Controls have the lowest (5.1), while License states (5.9) and states with Light Controls (5.6) are statistically identical.

A possible confound is the degree of enforcement of drunk driving laws. If states with more regulations also spend more resources on monitoring and punishing drunk drivers, then we would expect to see reduced fatality rates simply as a result of the more stringent monitoring and enforcement. In summary, not only do control

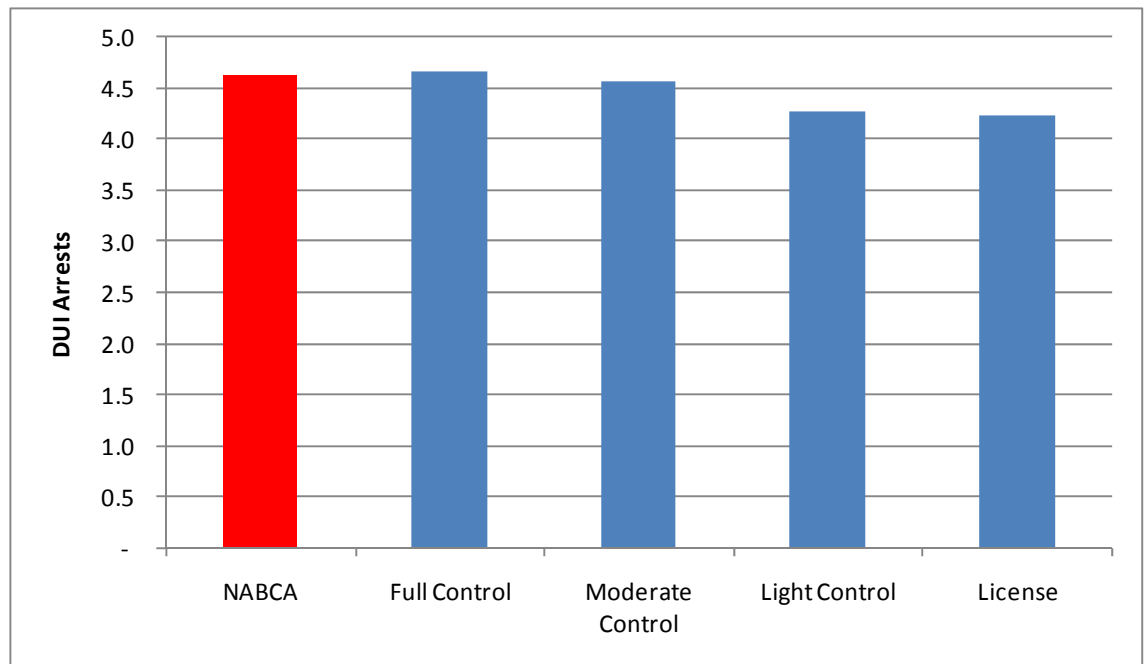
states exhibit higher fatality rates than do license states, Full Control states (states that regulation proponents would expect to have the lowest fatality rates) exhibit fatality rates that not only are the highest among the control categories, but which exceed fatality rates in license states by 25%.

DRIVING UNDER THE INFLUENCE (DUI) ARRESTS

It is possible that the fatality results shown above are influenced by the enforcement of DUI laws. For example, states with more DUI checkpoints and/or more DUI arrests will likely experience a lower fatality rate due to removing impaired drivers from the road before they can cause accidents. DUI arrests are shown in the following figure arranged by degree of regulation. We exclude Delaware from this analysis because its DUI arrest rate is atypical. Over the period 2002 through 2006, the average number of DUI arrests per 1,000 population nationwide (excluding Delaware) was 4.04. Over the same period, Delaware's DUI arrest rate was 0.3 per 1,000 population, or 1/16th that of the rest of the states.

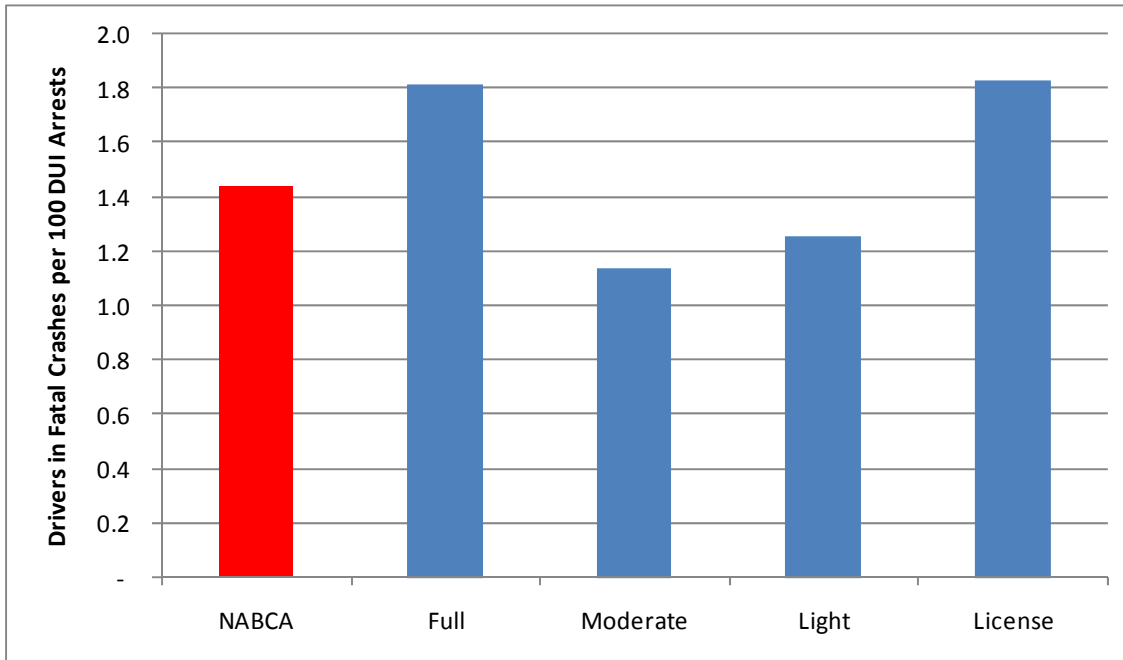
Full Control states exhibit the highest rate of DUI arrests, and License states exhibit the lowest, though the differences are not statistically significant

Figure 10. Average DUI Arrests (per 1,000 population), 2002-2006²⁰



Full Control states exhibit the highest rate of DUI arrests (4.6 arrests per 1,000 population), and License states exhibit the lowest (4.2), though the differences are not statistically significant. One way to adjust for differences in DUI enforcement is to examine the ratio of fatalities to DUI arrests. All other things being equal, the greater the problem a state has with impaired driving, the greater this metric will be. These results are shown in Figure 11.

Figure 11. Drivers Involved in Fatal Crashes with BAC 0.01 or Higher per 100 DUI Arrests, 2002-2006²¹



Advocates claim that the social goals of reducing alcohol consumption, underage drinking, and alcohol-related traffic deaths justify controlling wholesale and retail alcohol markets. Evidence from 48 states over time shows no link between market controls and these social goals.

After accounting for DUI enforcement, we see that License states exhibit the same average fatalities-per-DUI rate as do Full Control states (1.8 alcohol-related fatalities per DUI arrest). Moderate Control and Light Control states exhibit the rates that are statistically identical (1.1 and 1.3, respectively). These fatality rates are significantly lower than those of Full Control and License states. These results remain consistent with our previous results that Full Control states exhibit the greatest problem with alcohol-related highway fatalities. While evidence suggests that Light Controls (i.e., controlling the wholesale markets) may reduce DUI-enforcement adjusted fatalities, increasing controls beyond this level can actually increase the fatality rate to the same level observed in License states.

A counter argument is that there is a causal relationship underlying the data. It is possible that states with a greater number of fatalities have the incentive to devote more resources to DUI enforcement. This does not explain, however, why the number of fatalities-per-DUI would rise as we move from states with Light Controls to states with Full Controls.

CONCLUSION

Myriad examples at the state and federal levels illustrate that government is not good at running industries. Repeatedly, the private sector shows that it can provide higher quality goods and services at lower cost. However, arguments might be made for state control as a means of achieving some desired social outcome. In Pennsylvania's case, advocates claim that the social goals of reducing alcohol consumption, underage drinking, and alcohol-related traffic deaths justify controlling wholesale and retail alcohol markets.

Evidence from 48 states over time shows no link between market controls and these social goals.

Evidence from 48 states over time shows no link between market controls and these social goals. While alcohol consumption in license states is slightly higher than in controlled states, among controlled states, greater levels of control are actually associated with *increased* consumption rates. Rates of underage drinking and underage binge drinking are virtually identical in license and control states. Similarly, there is no difference in alcohol-related traffic deaths in license versus control states. However, among control states, states with the most controls also exhibit the highest rates of alcohol-related traffic deaths—even after adjusting for differences in enforcement of DUI laws. In short, evidence suggests that control of alcohol markets does not imply control of alcohol consumption.

ENDNOTES

1. Segal, Geoffrey F. and Geoffrey S. Underwood, 2007. *Divesting the Pennsylvania Liquor Control Board*. Reason Foundation.
2. Benefield, Nathan. *Public Benefits from Private Liquor*. Commonwealth Foundation.
3. Segal, Geoffrey F. and Geoffrey S. Underwood, 2007. *Divesting the Pennsylvania Liquor Control Board*. Reason Foundation.
4. Iowa deregulated the retail sale of alcohol on July 1, 1987. Data source: National Institute on Alcohol Abuse and Alcoholism.
5. West Virginia deregulated the sale of alcohol on February 27, 1990. Data source: National Institute on Alcohol Abuse and Alcoholism.
6. Data Source: National Institute on Alcohol Abuse and Alcoholism
7. Data Source: National Institute on Alcohol Abuse and Alcoholism
8. There is no statistically significant difference between Pennsylvania's and Ohio's average per-capita consumptions over the indicated period. Differences between Pennsylvania and each of the other border states are statistically significant.
9. West Virginia was regulated prior to 1990 and deregulated, at the retail level, from 1990 on.
10. The implied tax rate for Pennsylvania is estimated by the Distilled Spirits Council of the United States.
11. Montgomery County is the only county in Maryland that controls the sale of alcohol. For our purposes, we count Maryland here as deregulated.
12. Data Source: National Institute on Alcohol Abuse and Alcoholism
13. At the retail level, Idaho regulates all beverages that exceed 16% alcohol and Ohio regulates all beverages that exceed 21% alcohol. We classify both of these states as *Partial Retail and Wholesale* regulated.
14. Data Source: The National Institute of Alcohol Abuse and Alcoholism
15. Data Source: The NSDUH Report, U.S. Department of Health and Human Services, Office of Applied Studies, Issue 13, 2006.
16. Binge drinking is the consumption of five or more units of alcohol on a single occasion.
17. The NSDUH Report, U.S. Department of Health and Human Services, Office of Applied Studies, Issue 13, 2006.
18. Rees, Rebecca, 1997. *Privatization of Liquor Stores: No Threat to Public Safety*. Commonwealth Foundation.
19. Data Source: Fatality and Analysis Reporting System
20. Data Source: Sourcebook of Criminal Justice Statistics. Data is only readily available for 2002 through 2006 and does not include Florida. Data for Delaware are excluded.
21. Data Source: Fatality and Analysis Reporting System and Sourcebook of Criminal Justice Statistics. Data is only readily available for 2002 through 2006 and does not include Florida.

ABOUT THE AUTHORS AND THE COMMONWEALTH FOUNDATION

Mr. John Pulito is a Commonwealth Foundation Research Fellow at the Department of Economics and Quantitative Science at Duquesne University. Dr. Antony Davies (antony@antolin-davies.com) is Associate Professor of Economics at Duquesne University and adjunct scholar with the Commonwealth Foundation.

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