

Economics and Alcohol Taxation

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Economic Rationales for Alcohol Taxation

- Revenue Generation
 - Relatively easy source of revenue
 - Historically most important
- Public Health Improvement
 - Growing emphasis as impact of taxes on alcohol use/abuse better understood
- Economic Efficiency
 - To cover economic and social costs resulting from alcohol use and abuse

Revenue Generation

1791 First federal excise tax:

9 cents per gallon

1794 “Whiskey Rebellion” response to near tripling of tax

Raised several times during both World Wars, Korean War

1951 federal taxes for:

- Beer: \$9 per barrel
- Distilled spirits: \$10.50 per proof gallon
- Wine (unfortified): 17 cents per gallon

Revenue Generation (continued)

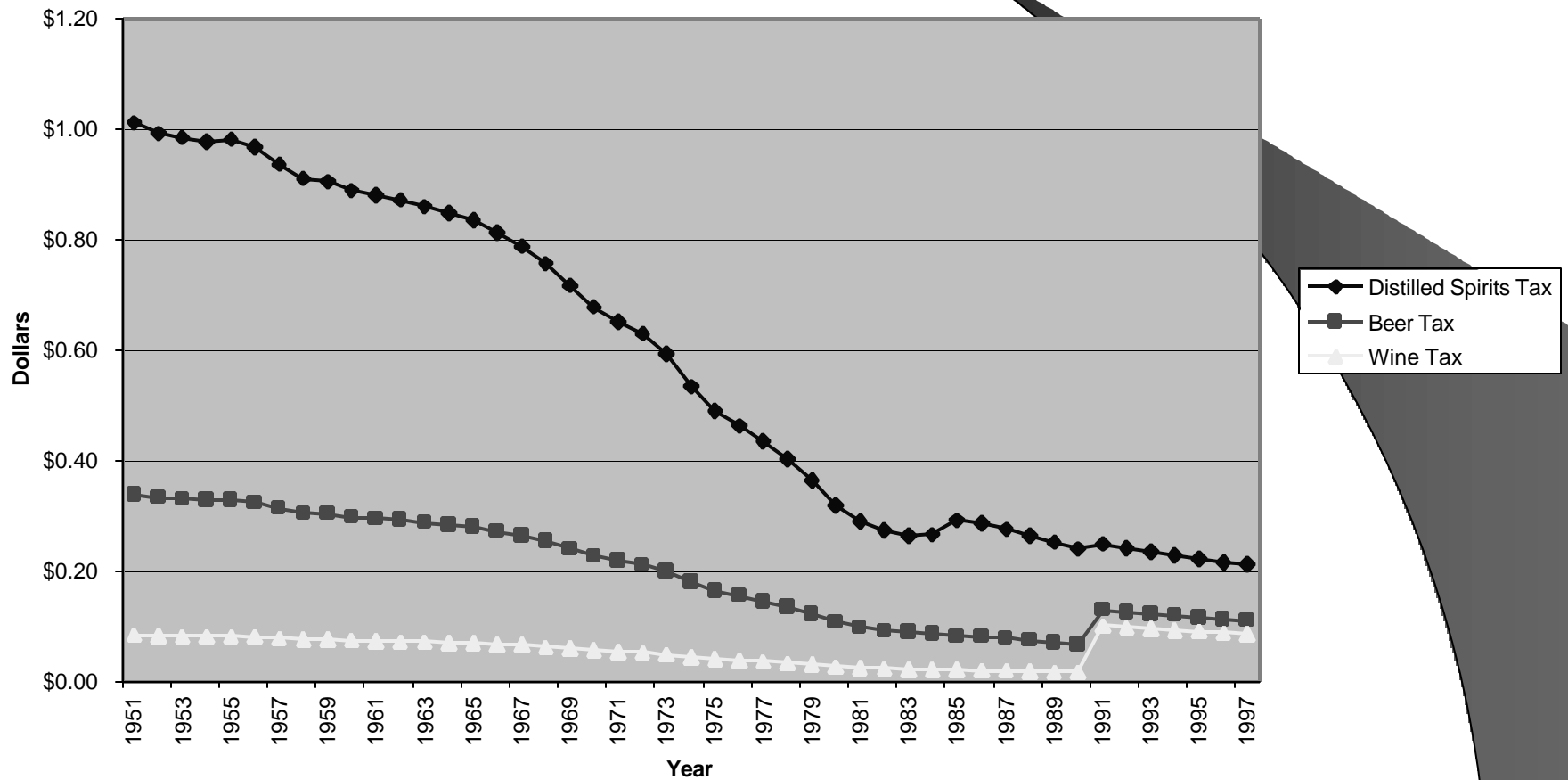
More recent (1/1/91) increases for deficit reduction

Current federal taxes:

- Beer: \$18 per barrel
- Distilled spirits: \$13.50 per proof gallon
- Wine (unfortified): \$1.07 per gallon

Federal Alcohol Taxes

Federal Alcohol Taxes per ounce of ethanol, June 1997 Dollars



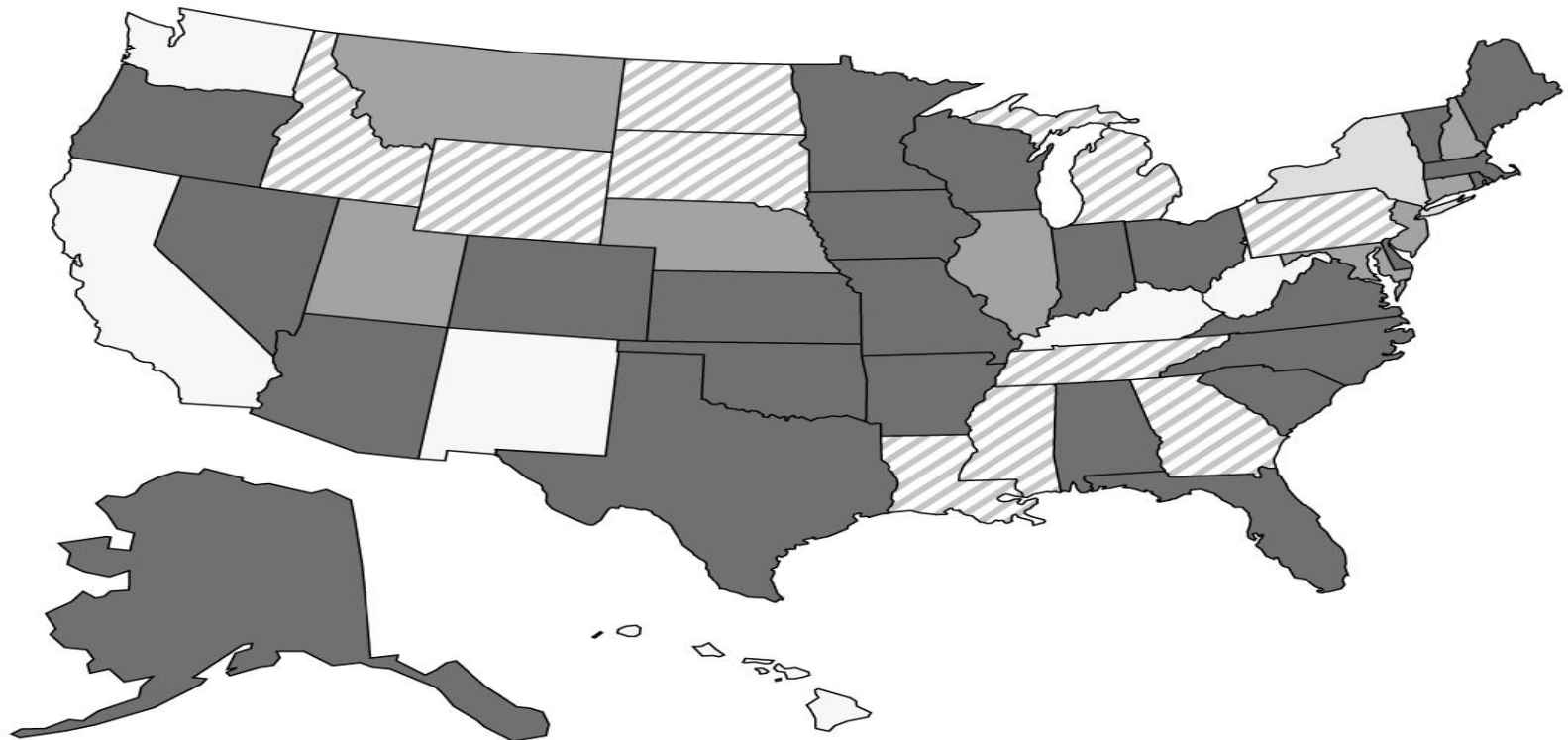
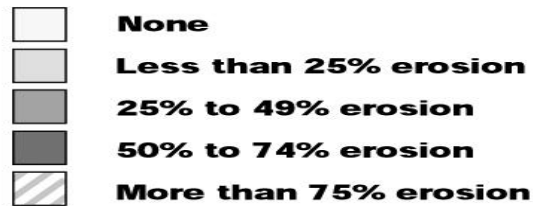
State Alcohol Taxes

- Historically used primarily for revenue generation
- Average state taxes (1/1/2000) per drink:
 - Beer: 2.51 cents per 12 ounces of typical beer
 - Wine: 2.82 cents per 5 ounces of table wine
 - Spirits: 4.13 cents per 1.5 ounces of 80 proof
- Have eroded sharply over time after accounting for effects of inflation

State Alcohol Taxes - Erosion

Erosion of Beer Excise Tax

1968 2000 (adjusted for inflation)

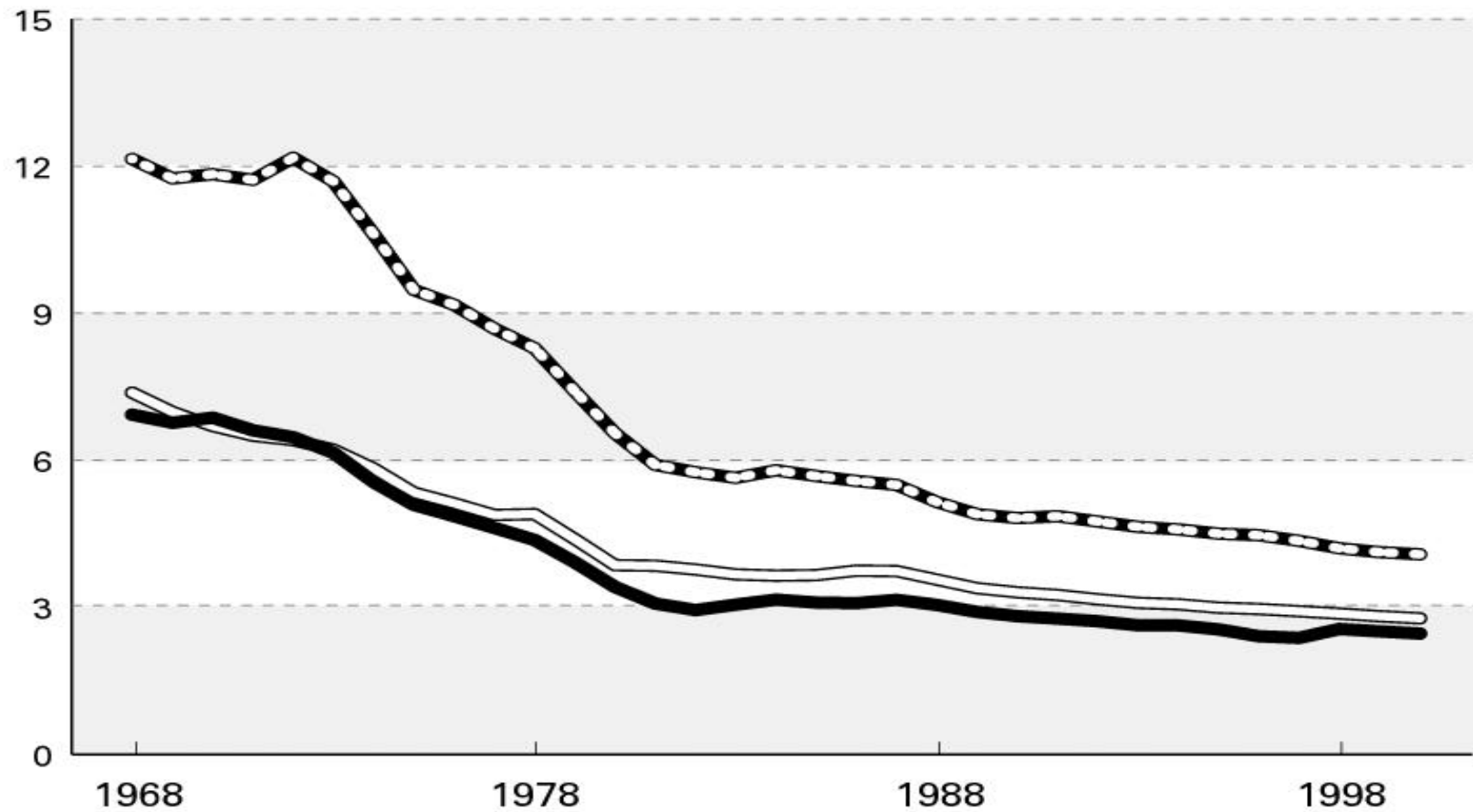


Average State Alcohol Taxes

Taxes

Trend of Taxes 1968-2000 (*adjusted for inflation; 2000 dollars*)

Cents Per Drink

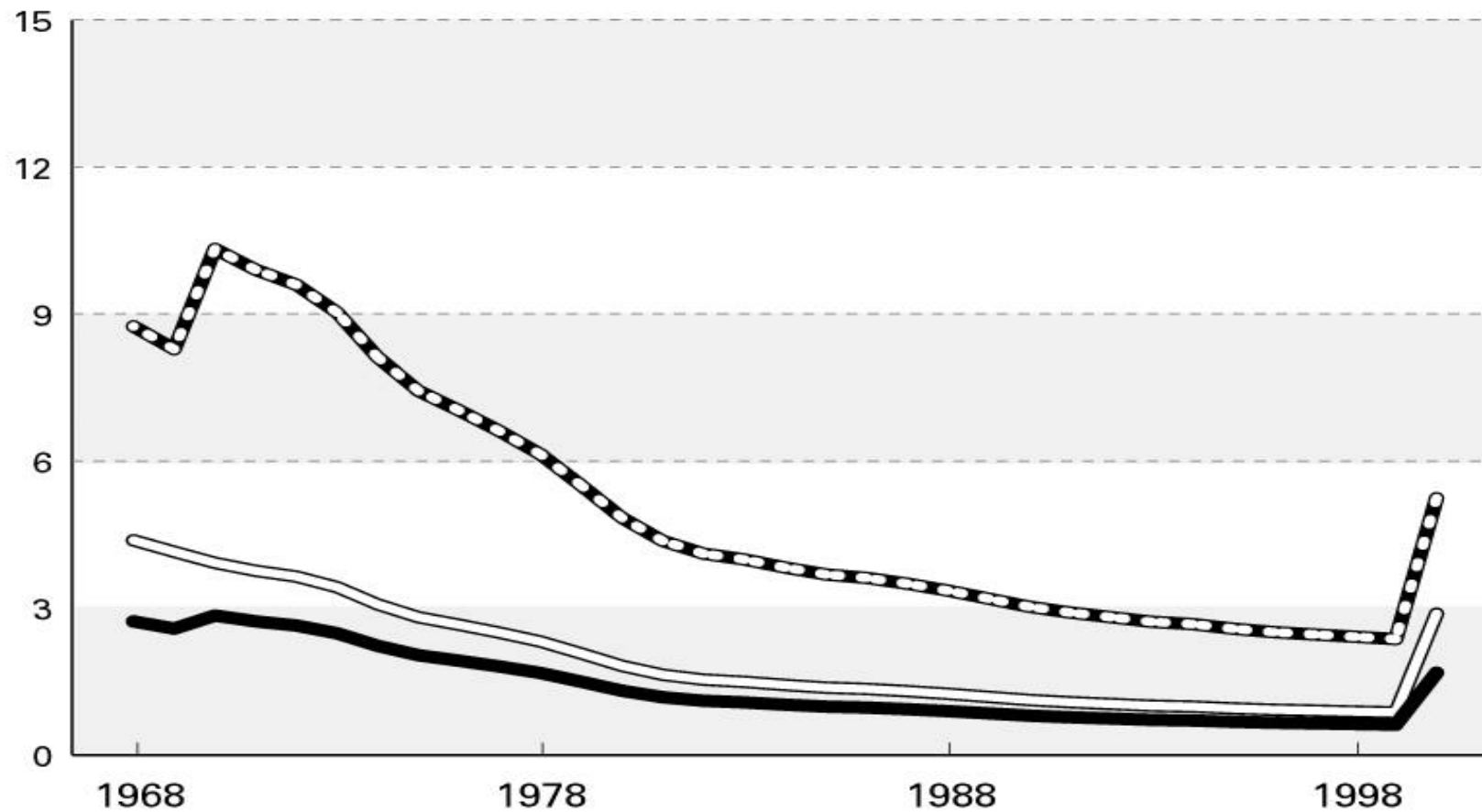


State Alcohol Taxes - Illinois

Taxes

Trend of Taxes 1968-2000 (*adjusted for inflation; 2000 dollars*)

Cents Per Drink

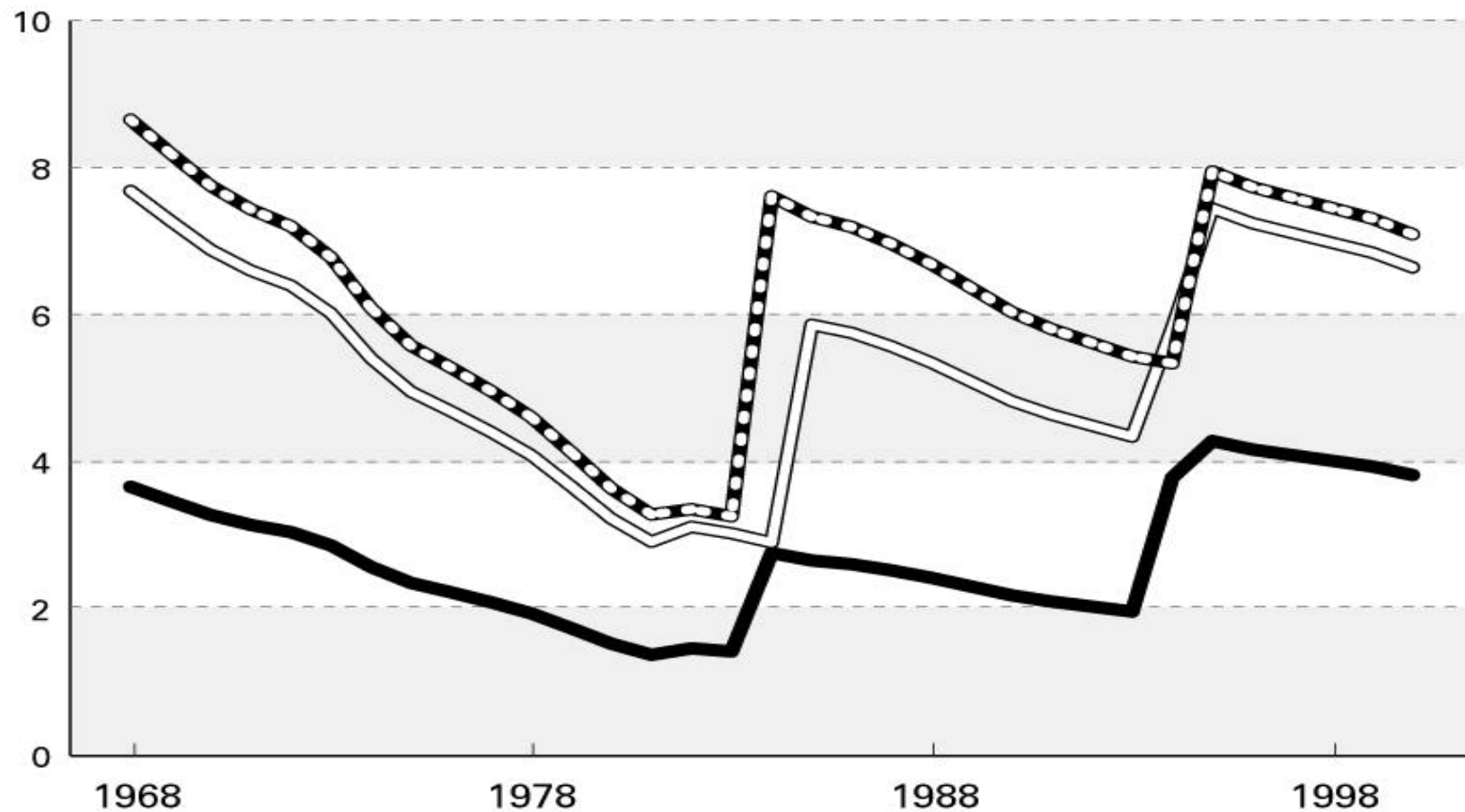


State Alcohol Taxes – NM

Taxes

Trend of Taxes 1968-2000 (*adjusted for inflation; 2000 dollars*)

Cents Per Drink



Price Elasticity of Demand

- Revenue generating potential of alcohol taxes depends on price sensitivity of demand for alcoholic beverages and share of tax in price
- Price Elasticity of Demand defined as the percentage change in consumption resulting from a one percent increase in price

Price Elasticity of Demand for Alcohol

- Estimated price elasticities (Leung and Phelps, 1993), largely from aggregate data:
 - Beer: -0.3; Wine: -1.0; Distilled Spirits: -1.5
 - Noted that estimates from survey based data are, if anything, generally somewhat higher than those from aggregate data
- More recent study by Nelson (1997) finds somewhat lower estimates:
 - Beer: -0.16; Wine: -0.58; Spirits: -0.52

Price Elasticity of Demand for Alcohol

- Larger long-run effects of price on addictive consumption (Grossman, Chaloupka and Sirtalan, 1998)
 - For young adults, based on MTF longitudinal data:
 - Elasticity ignoring addiction: -0.29
 - Short run elasticity, with addiction: -0.41
 - Long run elasticity, with addiction: -0.65

Price Elasticity and Youth Demand for Alcohol

- Economic theory suggests several reasons for why youth and young adults would be more sensitive to price than adults:
 - **Proportion of disposable income youth spends on alcohol likely to exceed corresponding portion of adult's income**
 - **Peer influences much more important for young drinkers than for adult drinkers**
 - **Young drinkers less addicted than adult drinkers**
 - **Young people tend to discount the future more heavily than adults**

Price Elasticity and Youth Demand for Alcohol

- **Empirical evidence generally supports economic theory on impact of prices on youth drinking:**
 - **Kenkel (1993), for heavy drinking days in past year:**
 - All ages: -0.92
 - 18-21 year olds: -2.24
 - **Grossman, et al. (1994):**
 - Heavier/more frequent drinking among youth more responsive to price than lighter/more infrequent drinking

Alcohol and Public Health

- Large epidemiologic literature linking alcohol use/abuse to:
 - Health consequences (liver cirrhosis, cardiovascular disease, cancers, and more)
 - Poor birth outcomes (fetal alcohol syndrome)
 - Traffic crashes and other accidents
 - Violence and other crime
- Estimated that over 110,000 premature deaths each year caused by alcohol use and abuse with average loss of life of 26 years

Taxing Alcohol to Improve Public Health

- Based on argument that higher alcoholic beverage taxes reduce morbidity, mortality, and other consequences of alcohol use and abuse
- Large/growing literature from economics examining effects on accidents, violence/other crime, health consequences, illicit drug use, and more

Public Health: Accidents

- Large economics literature on impact of alcohol prices and taxes on drinking and driving and alcohol-related motor vehicle accidents
- 10 percent increase in price would reduce probability of drinking and driving by 7.4 percent (males) and 8.1 percent (females).
 - Larger impact on underage drinkers (12.6 and 21.1 percent, respectively; Kenkel, 1993).

Public Health: Accidents (continued)

- Policy indexing federal beer tax to inflation since 1951 would reduce total annual motor vehicle accident fatalities by 11.5 percent (32.1 percent for 18-20 year olds) (Chaloupka, Saffer and Grossman, 1993)
- Youth non-fatal motor vehicle accidents inversely related to beer taxes (Chaloupka and Laixuthai, 1997)

Public Health: Accidents

Less extensive literature suggests higher alcoholic beverage taxes would reduce injuries and deaths in other accidents:

Examples:

- 25 cent increase in 1992 federal beer tax would have reduced work-loss days from non-fatal workplace accidents by 4.6 million and lost productivity by \$491 million (Oshfeldt and Morrissey, 1997).
- Higher taxes reduce deaths from drowning, falls and other accidents (Sloan et al., 1994)

Public Health: Violence

- Large literature linking alcohol abuse to violence
 - Early estimates suggest higher taxes would reduce violent crime (Cook and Moore, 1993)
 - Doubling federal beer tax would reduce homicides by 3 percent, rapes by 2 percent, robberies by 4.7 percent, and total crime by 1.3 percent (Chaloupka and Saffer, 1992)

Public Health: Violence (continued)

- Recent studies by Markowitz and colleagues
 - 10 percent rise in federal beer tax would reduce probability of child abuse by 1.2 percent and all violence towards children by 2.1 percent (Markowitz and Grossman, 1998 and 2000)
 - Higher alcohol prices reduce the probability of severe violence aimed at wives (Markowitz, 2000)
 - Higher beer prices would reduce violence and other problem behaviors on college campuses (Markowitz and Grossman, 2001)

Public Health: Violence (continued)

- Several more recent studies by Markowitz and her colleagues (continued)
 - Higher beer taxes reduce the likelihood of suicide ideation and suicide attempts among youth and college students (Markowitz et al., 2001a, 2001b)
 - International evidence indicates that higher alcohol prices associated with lower incidence of robbery, assault, and sexual assault (Markowitz, 2001)

Public Health: Violence (concluded)

- Sloan et al. (1994) produce similar evidence that higher state alcohol taxes reduce state level suicide death rates
- Saffer (2001) uses self-reported criminal behavior, concluding that higher beer taxes reduce probability of committing variety of crimes, with relatively larger effects observed for youth

Public Health: Liver Cirrhosis and Other Alcohol-Related Diseases

- \$1 increase in distilled spirits tax would lower cirrhosis deaths by 5.4 to 10.8 percent (Cook and Tauchen, 1982)
- Long-run price elasticity of cirrhosis deaths -1.3 (Chaloupka, Grossman, Becker and Murphy, 1992)
- Higher taxes reduce other alcohol related deaths (Sloan, Reilly and Schenzler, 1994)

Public Health: Sexually Transmitted Diseases

- Some evidence that higher alcoholic beverage prices reduce participation in risky sexual behaviors among college students (Liang et al, 2001; Markowitz and Grossman 2001)
- Chesson et al. (2000) estimate that \$1.00 increase in per gallon spirits tax would reduce gonorrhea rates by 2.1 percent and that 20 cents/six pack rise in beer tax would lower by 8.9 percent; both tax increases also significantly reduce syphilis

Alcohol Taxes and Public Health: Polysubstance Use

- Higher beer taxes reduce the likelihood of marijuana use among young adults (Pacula, 1998) and adults (Chaloupka and Saffer, 1999). They also reduce the current likelihood of cocaine and heroin use (Chaloupka and Saffer, 1999).
- Recent evidence suggests that higher beer taxes may reduce future marijuana use as well (Pacula, 1998).

Alcohol Taxes and Human Capital

- Higher beer taxes increase likelihood of attending, graduating from college (Cook and Moore 1993)
 - Estimate that \$1.00 increase in beer tax/case in 1982 would have raised probability of attending and graduating from 4-year college/university by 6.3 percent
- Similar evidence concerning impact of increased taxes on high school graduation (Yamada et al, 1996)
- Important long-run implications

Economic Efficiency and Alcohol Taxation

- Alcoholic beverage taxes can correct for the external costs associated with alcohol consumption (in absence of taxes, prices understate the social costs of alcohol use)
 - Economic costs estimated at \$184.6b in 1998
- Complicated in the case of alcohol since not all drinking results in external costs (external benefits of moderate drinking?)

Economic Efficiency and Alcohol Taxation

- “Optimal” (economically efficient) tax depends on (Pogue and Sgontz, 1989) :
 - magnitude of social costs of alcohol use and abuse
 - relative numbers of abusive and non-abusive drinkers
 - relative price responsiveness of abusive and non-abusive drinkers

Economic Efficiency

- Pogue and Sgontz (1989) estimate that 1983 alcohol taxes were about half the efficient level of these taxes based on their model/”best guess” using a wide range of estimates.
- Manning, et al. (1989) estimate on optimal tax of 48 cents per ounce in 1985 (compared to average tax of 23 cents per oz.)
- Kenkel (1996) estimates optimal tax of about 106 percent of net of tax price

Economic Efficiency

- Saffer and Chaloupka (1994) extend the Pogue and Sgontz approach to examine the relative taxation of distilled spirits, wine, and beer.
- Estimate weighted average optimal tax 2.3 times the 1991 level
- Estimates support tax system closer to equalization across all alcoholic beverages

Summary

- Increases in alcoholic beverage taxes and prices lead to significant reductions in drinking
- Increases in alcohol taxes will generate significant new tax revenues
- Long-run effects of price on alcohol demand larger than short-run effects
- Youth and young adults more responsive to price changes than adults

Summary

- Increases in alcoholic beverage taxes and prices reduce many consequences of alcohol use and abuse, including accidents, violence and other crime, alcohol-related morbidity and mortality, illicit drug use, and more
- Estimates of optimal alcoholic beverage taxes well above the current levels of these taxes

Policy Options

- Economic and Public Health arguments support:
 - significant increases in alcoholic beverage tax rates
 - indexing of alcohol taxes to the rate of inflation
 - equalization of taxes on alcohol contained in different alcoholic beverages
 - tax increases as part of a comprehensive program aimed at reducing alcohol use and abuse

Counterarguments

- Potential Regressivity:
 - Regressivity isn't clear given positive relationship between income and alcohol use
 - If existing taxes are regressive, not clear that increases in taxes are regressive
 - Lowest income groups likely to be most responsive to the tax increases
 - Concerns about regressivity could be offset by earmarking some of new revenues for programs targeting lowest income populations

Counterarguments

- Potential Economic Consequences:
 - Industry estimates of job losses tend to be significantly overstated
 - Most of the jobs described as alcohol-related are not dependent on alcohol
 - Money not spent on alcohol will be spent on other goods and services creating other jobs
 - Any adverse impact will likely be minimal and gradual