

Alcohol Advertising and Youth

HENRY SAFFER, PH.D.[†]

National Bureau of Economic Research, 365 Fifth Avenue, 5th floor, New York, New York 10016-4309

ABSTRACT. *Objective:* The question addressed in this review is whether aggregate alcohol advertising increases alcohol consumption among college students. Both the level of alcohol-related problems on college campuses and the level of alcohol advertising are high. Some researchers have concluded that the cultural myths and symbols used in alcohol advertisements have powerful meanings for college students and affect intentions to drink. There is, however, very little empirical evidence that alcohol advertising has any effect on actual alcohol consumption. *Method:* The methods used in this review include a theoretical framework for evaluating the effects of advertising. This theory suggests that the marginal effect of advertising diminishes at high levels of advertising. Many prior empirical studies measured the effect of advertising at high levels of advertising and found no effect. Those studies that measure advertising at lower, more disaggregated levels have found an effect on consumption. *Results:* The results of this review sug-

gest that advertising does increase consumption. However, advertising cannot be reduced with limited bans, which are likely to result in substitution to other available media. Comprehensive bans on all forms of advertising and promotion can eliminate options for substitution and be potentially more effective in reducing consumption. In addition, there is an increasing body of literature that suggests that alcohol counteradvertising is effective in reducing the alcohol consumption of teenagers and young adults. *Conclusions:* These findings indicate that increased counteradvertising, rather than new advertising bans, appears to be the better choice for public policy. It is doubtful that the comprehensive advertising bans required to reduce advertising would ever receive much public support. New limited bans on alcohol advertising might also result in less alcohol counteradvertising. An important topic for future research is to identify the counteradvertising themes that are most effective with youth. (*J. Stud. Alcohol*, Supplement No. 14: 173-181, 2002)

ALCOHOL REMAINS popular with American college students, as indicated by the Core Institute Survey (1998). In 1997, 84.2% of college students reported drinking alcohol, an increase of 2% over the prior year. For comparison, there were similar increases in the prevalence of tobacco and marijuana use. Moderate to heavy drinking also increased with corresponding reductions in abstinence and light drinking. Nationwide, students reported consuming an average of 5.64 drinks per week in 1997, up about 7% over 1996. The Core Institute also reported that 45.5% of students had consumed five or more drinks in one sitting in the previous 2 weeks. More than 21% of the students reported three or more episodes of this kind of high-risk drinking in the previous 2 weeks. Finally, more than 90% of American college students reported that drinking is a central part of campus social life.

According to Competitive Media Reporting, more than \$1.2 billion was spent in 1998 on alcohol advertising in measured media (i.e., print media, outdoor advertising, radio and television). An additional two-thirds billion dollars was spent on other forms of promotion, including sponsorships, couponing and direct mail. Alcohol advertising had decreased from 1987 to 1996 by 34%, in real terms. However, since 1997, alcohol advertising has been increasing. Part of the recent increase includes the use of cable television by spirits advertisers.

Both the level of alcohol misuse on college campuses and the level of alcohol advertising are high. A recent report by the Federal Trade Commission (1999) concluded that underage individuals have significant exposure to alcohol advertising. However, evidence of exposure does not prove that alcohol advertising induces more alcohol consumption by young people. A number of studies have examined the relationship between alcohol advertising and attitudes about alcohol held by young people. Some believe that cultural myths and symbols used in alcohol advertisements have powerful meanings for college students. Others have concluded that alcohol advertising affects knowledge, attitudes and intentions to drink, which in turn are believed to affect drinking. This type of inquiry has led some public health groups to conclude that there is a positive link between advertising and alcohol consumption. For instance, the Robert Wood Johnson Foundation (1999) maintains that alcohol advertising and marketing are factors in the environment that help create problems of underage drinking and college high-risk drinking. There is, however, very little empirical evidence that alcohol advertising has any effect on actual alcohol consumption (e.g., see Fisher, 1993; Nelson, 1999). This review article will try to resolve these conflicting conclusions and provide some guidance for public policy directed at campus alcohol misuse.

Alcohol Advertising and Alcohol Demand

Competition through advertising, rather than price, is often preferred in industries that are highly concentrated, such

[†]Henry Saffer may be reached at the above address or via email at: hsaffer@gc.cuny.edu.

as the alcohol industry. A highly concentrated industry is characterized by a small number of relatively large firms. Schmalensee (1972) showed that firms competing with a small number of rivals are likely to advertise more than a similar firm in a monopoly situation. The advertising-to-sales ratio for the alcohol industry is about 9%, in comparison with the average industry advertising-to-sales ratio, which is about 3% (Advertising Age, 1999).

The theory of brand capital explains the process by which advertising affects demand and can also explain alcohol advertising effects on knowledge, attitudes and intentions to drink. Brand capital is defined as the collective positive associations that individuals have about a brand. Firms with higher levels of brand capital will have higher sales because they provide consumers with higher levels of utility. Brand capital can depreciate over time, accompanied by decreases in sales. Firms can attempt to offset decreases in sales by creating additional brand capital. Depending on the relative marginal costs and marginal benefits, the addition to brand capital will be either in the form of new brands or in the form of changes in the type and level of advertising for existing brands.

The creation of a new brand involves three steps: (1) market segmentation, (2) the creation of a branded product and (3) the creation of new advertising for the brand, with content targeted at the intended market segment. Changes in the type and level of advertising for existing brands involve steps one and three only.

Market segmentation can be based on geography (e.g., region, size of community), demographics (e.g., age, gender, race, religion), behavior (e.g., frequency of purchase, occasion of purchase, readiness to purchase) or psychographics (e.g., values, attitudes, personality, lifestyle). Market segments can also be defined with combinations of these categories. For an existing brand, the market segment to be targeted may be redefined.

The creation of branded products consists of producing distinguishable products with unique packaging or with unique product features. Branding can be accomplished with individual brand names, such as Miller and Red Dog, which have no obvious association with each other, or by creating brand families. The brands in a family all have the same name but have different attributes, such as lite beer, ice beer and genuine draft beer, or different packaging attributes, such as glass bottles, extra large size containers or long necked bottles.

Targeted advertising refers to the specific imagery used to create the "personality" for a brand. Targeting also requires choosing media that will expose the intended market segment to the advertising. Product personalities are designed to appeal to specific market segments. For example, in targeting young people, Coors beer is associated with an unspoiled wilderness, whereas Budweiser is associated with athletic success. Use of these products connects the young person's fantasies to these fantasy images. For an existing brand, the personality and media may be changed.

Product price provides information about intended product quality. If the brand has been defined as a premium product, brand capital will be decreased by frequent discounting or a permanent decrease in product price. These would signal a decrease in perceived product quality, thus reducing the brand capital that has been created by investing in advertising. Although the price of various brand categories tends to be the same for all firms, price variation across markets is created by state taxes, transportation costs and local cost factors. Variations in the level of advertising also exist across markets because of local cost factors.

Products with higher levels of brand capital provide increased utility to individuals in a specific market segment and are more likely to be purchased than products that have less brand capital. A company with more brand capital can achieve a larger market share than a company with less. Increases in brand capital may result from the creation of additional brands or more increases in capital per brand. The introduction of a new brand may shift customers from an existing brand, but it can also attract new consumers into the market. Therefore, a firm that increases its brand capital in this way will increase its market share and may also increase the size of the market. The economic feasibility of this strategy is limited by several factors. The market must be large enough so there are enough potential customers and revenue to balance the costs of creating the new product and packaging and of effectively creating and placing the advertising. The process also depends critically on the availability of media where advertising can be placed. That is, if all alcohol advertising were banned from all media, the possibility of market expansion through the process of brand proliferation would be quite limited.

Advertising and other marketing techniques are one potential source of information for young people about the costs and benefits of alcohol. Advertising creates the impression that, for a relatively small expenditure, young people can psychologically connect to the positive fantasy places, lifestyle and personality characteristics that it portrays. Advertising-supplied information can result in more positive expectancies about alcohol, which can change actual or intended consumption behavior. In addition, for a bounded community of youth, such as a college campus, alcohol advertising can increase alcohol consumption by the whole community. If this happens, then the social norms of that campus have been changed, and this can have a strong effect on drinking decisions by individual students. In effect, the new social norms provide new information about costs and benefits of drinking, especially social costs and benefits.

Methodological Issues in Advertising Studies

The theory of brand capital can explain why advertising increases positive alcohol expectancies, but does not explain why econometric studies of alcohol consumption often find

no effect from advertising. An examination of some of the methodological issues in econometric studies will help to resolve this discrepancy and provide some important insights into how studies of alcohol advertising and market level consumption should be conducted. The most important concept in economic theory is diminishing marginal product, which states that the continued increments of an input to a process will at some point lead to ever smaller increments in output. This concept is the basis of the advertising response function that is used in brand level research to illustrate the effect of advertising on consumption at various levels of advertising. Economic theory suggests that due to diminishing marginal product, advertising response functions flatten out at some point. That is, after a certain point consumption becomes ever less responsive to increases in advertising. Ultimately consumption is completely unresponsive to additional advertising. Brand level empirical work on beer advertising clearly supports this model (Ackoff and Emshoff, 1975; Rao and Miller, 1975). One important implication of diminishing marginal product is that, since media are not perfect substitutes for one another, media diversification is necessary to maximize the effect of a given advertising budget.

The same model that describes the brand level advertising response function can be applied at the product level, defined as all products produced in an industry. For example, the product level for alcohol would include all brands and variations of beer, wine and spirits. The product level and brand level advertising response functions are similar and are illustrated in Figures 1a and 1b. The vertical axis measures product level consumption (or brand level consumption), and the horizontal axis measures product level (or brand level) advertising. The product level response function differs from the brand level response function in that advertising induced sales must come at the expense of sales of products from other industries, assuming individuals' spending remains constant. Increases in consumption come from new consumers or from increases by existing consumers. New consumers are often adolescents who are uninformed about the true costs and benefits of alcohol consumption. Earlier initiation is associated with increased alcohol-related problems in adolescence and adulthood and with increased lifetime risk for alcohol-related injury (Grant and Dawson, 1997; Hawkins et al., 1997; Hingson et al., 2000; Zucker and Fitzgerald, 1991).

Counteradvertising, which is the use of media to promote public health, is subject to the same law of diminishing marginal product as advertising. Figure 2 illustrates the effect of counteradvertising on consumption. The vertical axis measures consumption, and the horizontal axis measures counteradvertising. The response function is downward sloping, indicating that increases in counteradvertising reduce consumption. Again, the response function flattens out at high levels of counteradvertising due to diminishing marginal product.

A second important aspect of advertising is that its effects linger over time. That is, advertising in Period 1 will have a lingering, although smaller, effect in Period 2. Although the rate of decline over time remains an arguable issue, research such as that of Boyd and Seldon (1990) finds that advertising fully depreciates within a year. The lingering but declining effect of advertising is the basis for a widely used advertising technique known as pulsing. Pulses, or bursts of advertising in a specific market that last for short time periods, are separated by periods of no advertising. The length and intensity of pulses vary according to a variety of factors, including media used, specific advertisers and advertising costs in the designated market.

Econometric studies of advertising and total consumption generally use one of four basic approaches: (1) studies that use annual or quarterly national aggregate expenditures as the measure of advertising, (2) studies that use cross-sectional measures of advertising, (3) studies of advertising bans and (4) studies of counteradvertising. The two response functions represented in Figures 1a and 1b illustrate the likely outcome of alternative methods of measuring advertising.

Consider first studies that use annual national expenditures as the measure of advertising. These are the yearly total of all alcohol advertising expenditures, for all advertisers, in all media, for all geographic market areas. This is a high level of aggregation of advertising data, and as a result the data have very little variation over time. Because alcohol is heavily advertised, the marginal product of advertising may be very low or zero. In Figure 1a, this is equivalent to measuring advertising in a small range around A_1 . The loss of variance due to aggregation leaves little to correlate with consumption; because the advertising occurs at a level where the marginal effect is small, it is not likely that any effect of advertising will be found.

Consider next studies that use cross-sectional data as the measure of alcohol advertising. Although there are exceptions, this type of data is typically local level, such as a Metropolitan Statistical Area, for periods of less than a year. It can have greater variation than national level data for several reasons, including pulsing. The pattern of pulses varies across local areas. In addition, the cost of advertising varies across local areas, which also contributes to differences in advertising levels. This is illustrated in Figure 1b by the three data points A_{m1} , A_{m2} and A_{m3} . An econometric study that uses monthly or quarterly local level data would potentially detect larger variation in advertising levels and in consumption. When data are measured over a relatively larger range, there is a greater probability of being in the upward sloping portion of the response function. Local level advertising data are thus more likely to find a positive relationship between advertising and consumption.

Consider next studies of alcohol advertising bans. The potential effect of a ban on certain media is shown as a

downward shift of the response function in Figures 1a and 1b. An advertising ban may not reduce the total level of advertising but will reduce the effectiveness of the remaining nonbanned media. This occurs because a ban on one or more media will result in substitution into the remaining media. However, each medium is subject to diminishing marginal product so the increased use of the nonbanned media will result in a lower average product for these media. This shifts the response function downward. Firms may

or may not respond to this decrease in effectiveness of their advertising expenditures. They may try to compensate with more advertising, which would be illustrated by moving to a higher level of advertising on a lower advertising response function; or they might increase the use of other marketing techniques such as promotional allowances to retailers.

Finally, consider counteradvertising. The amount of counteradvertising is low and irregular over time. Thus, there is variation in the data even when aggregated to the

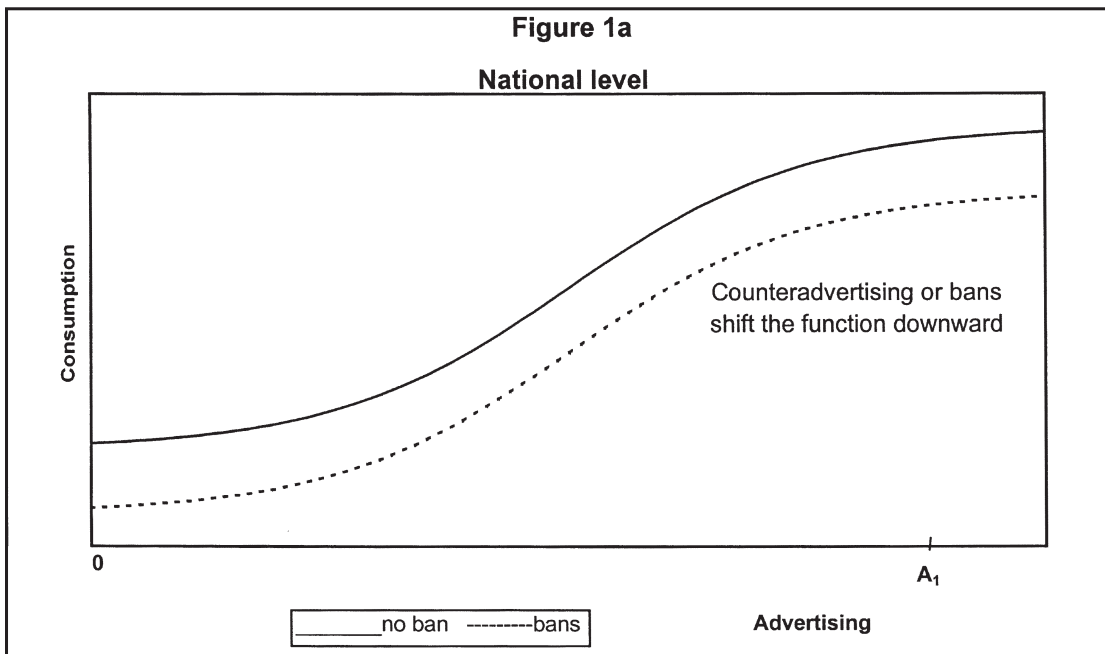


FIGURE 1a. Advertising response function: National level data

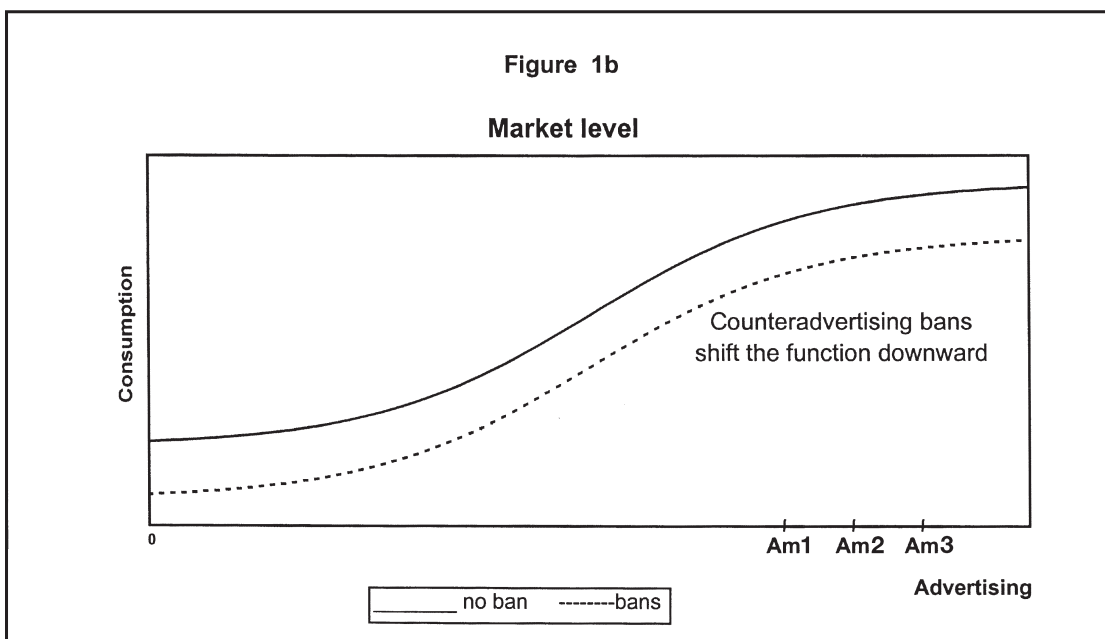


FIGURE 1b. Advertising response function: Market level data

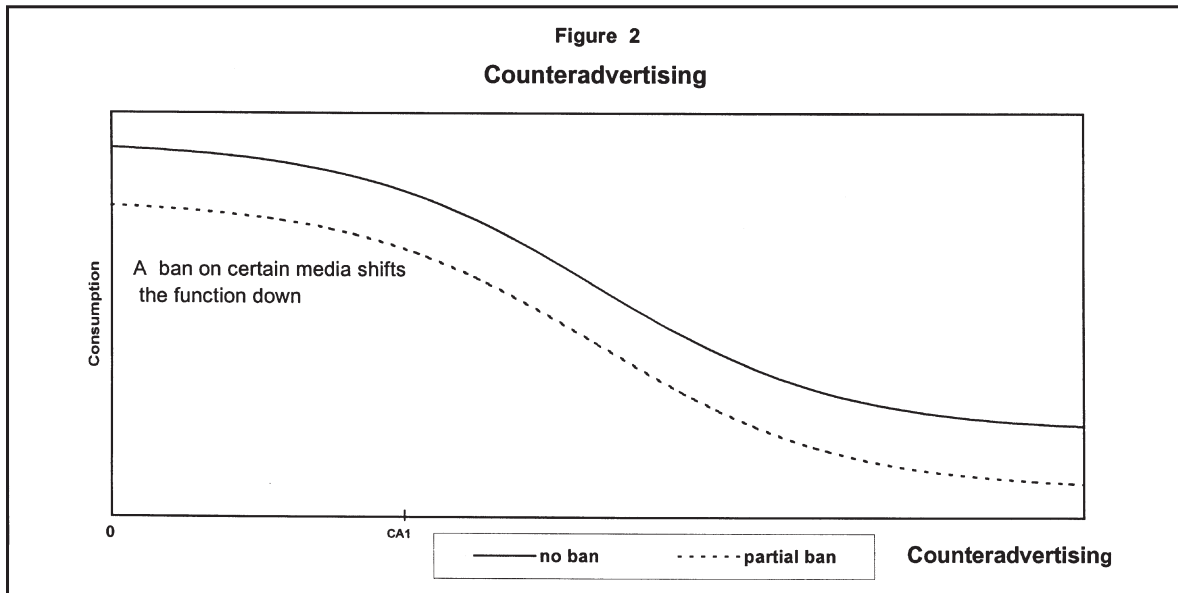


FIGURE 2. Counteradvertising response function

national level. Counteradvertising is therefore measured over a range in which the function is decreasing (see Figure 2). It is likely that a negative relationship between counteradvertising and consumption will be found.

Empirical Studies of Advertising and Youth

Empirical studies of alcohol advertising and youth fall into three categories. First, targeting studies attempt to document that advertising targets youth by examining media placement and advertising content. These studies examine advertisements for consumer information, brand symbolism and lifestyle portrayals that appeal to youth, but do not correlate advertising exposure to consumer behavior. Second, attitudinal studies attempt to correlate various attitudinal data with alcohol advertising. These studies may examine how small groups, in controlled environments, react to controlled exposures to alcohol advertisements. Another approach uses in-depth interviews to collect data on what media people have recently been exposed to and measures of alcohol use or beliefs. The advertising exposure data are then correlated with data on beliefs about alcohol or intentions to use alcohol. Third, econometric studies employ data from existing large-scale surveys of individuals and aggregate statistics for various communities. These studies examine the effects of alcohol advertising on market share and total alcohol consumption.

The first category of studies provides some evidence that alcohol advertising is targeted at youth. A study by Breed et al. (1990) found that alcohol advertising in college newspapers far exceeded all other product advertisements. The researchers concluded that alcohol advertising

originating locally encouraged irresponsible and heavy drinking. Because their sample period predated the national 21-year-old minimum purchase age law, they could examine the relative frequency of college alcohol advertising in states with and without the 21-year-old minimum. They found that the 21-year-old minimum age law had no effect on the frequency of campus alcohol advertising. Grube (1993) also found evidence of targeting: 2.4 alcohol commercials per hour were placed in professional sports programs and 1.2 per hour in college sports programming. This compares with only .25 per hour in prime time fictional programming. Grube also concluded that as children age they become more aware of alcohol advertising.

The Center for Media Education (1998) also found evidence of youth targeting in alcohol advertising on the Internet. They monitored alcohol promotion websites for the period of August 18 through October 13, 1998. They found that 62% of the 77 alcohol sites examined used marketing techniques that appealed to youth. It would be useful to continue to explore the effect of Internet advertising and promotion of alcohol.

Attitudinal studies find evidence that alcohol advertising increases intentions to drink by adolescents. Grube (1993) reviewed a series of studies that concluded that adolescents more heavily exposed to advertising are more likely to have positive attitudes toward drinking. Some studies reviewed did not find an association between alcohol advertising and alcohol use by young people. Grube noted that correlational studies of this type have difficulty demonstrating causality or its direction. Grube and Wallack (1994) tried to correct for this weakness by using nonrecursive statistical modeling techniques to test an

information processing model of advertising effects on knowledge, attitudes and intentions. They also distinguished between awareness of alcohol advertising and mere exposure to advertising. In one group of grade school children, those more aware of alcohol advertising were more affected by it. They also found that awareness is not predisposed by prior drinking intentions. Because alcohol advertising increases awareness, they concluded that alcohol advertising increases drinking intentions for the grade school students studied.

Another small group study by Parker (1998) examined how alcohol advertisements are perceived by college students. A meaning-based model of advertising incorporating students' life themes, personal conflicts, view of self and view of others was used to explore the role of alcohol advertising. Students were asked questions about their interpretation of the advertisements, and these responses were compared with their own life experiences and independently identified content themes. The study concluded that the meanings of advertising messages are derived from individuals' experiences. The study also found that college students were able to identify cultural myths in the advertisements, but did not always believe them. Themes most appealing to college students were those involving danger and mystery. Econometric studies, the third category, find little evidence of an effect of alcohol advertising due to the methodological problems described earlier. Studies that use national aggregate advertising data as the measure of advertising expenditures are the least likely to find an effect. This type of data measures advertising in a range around A_1 in Figure 1a and, according to the economic model presented earlier, is not likely to find an advertising effect. Studies by Duffy (1987), Selvanathan (1989) and Nelson and Moran (1995) are representative. Although they were important efforts to estimate the effects of alcohol advertising, results were weak and inconsistent. There were some methodological improvements in subsequent studies. Duffy (1991), Franke and Wilcox (1987) and Nelson (1999) used quarterly rather than annual data. Bourgeois and Barnes (1979) used cross-sectional data, and a study by Blake and Nied (1997) added a number of new variables. The results from all five studies, however, do not provide much support for the hypothesis that advertising increases industry demand.

Only two alcohol advertising studies have used cross-sectional data. Goel and Morey (1995) used a U.S. data set with 779 observations for the period 1959 to 1982 that have both time and geographic variation. They found some evidence that alcohol advertising has a significant positive effect on consumption. A second study by Saffer (1997) examined the effect of alcohol advertising on highway fatalities. This study used 4 years of quarterly data from 75 local level cross-sectional aggregates with a total of 1,200 observations. He concluded that alcohol advertising increases highway fatalities.

Another group of studies examined the effect of advertising bans on consumption. The potential effect of a ban on certain media is a downward shift of the response function. Firms may try to compensate with more advertising or with other marketing techniques, such as promotional allowances to retailers. The effects of advertising bans have been studied with interrupted time series techniques and regression models.

Smart and Cutler (1976), Ogborne and Smart (1980) and Makowsky and Whitehead (1991) examined the effect of alcohol advertising bans in British Columbia, Manitoba and Saskatchewan, respectively. All three studies failed to find an effect of advertising bans on alcohol consumption. However, these studies could not account for cross-border alcohol advertising. These provincial bans may not have resulted in a significant reduction in total advertising exposure because the provinces receive a considerable amount of television programming from the United States. These results may also indicate that longer time periods are necessary to observe changes in alcohol consumption in a single province or country.

Ornstein and Hanssens (1985) examined the effects of bans on outdoor advertising, bans on consumer novelties and bans on price advertising on beer and spirits consumption in the United States using state data for the period 1974 to 1978. States that allowed price advertising and consumer novelties were found to have higher spirits consumption.

Saffer (1991) provided the first set of estimates of the effect of television advertising bans on alcohol misuse. Time series data from 17 countries for the period 1970 to 1990 were pooled. Alcohol misuse was estimated using alcohol consumption, liver cirrhosis mortality rates and motor vehicle mortality rates. Cultural factors that influence alcohol use were measured by alcohol production variables, and a set of country dummy variables were used in the analysis. The results indicated that both alcohol advertising bans and alcohol price can have a significant effect in reducing alcohol misuse.

Counteradvertising studies are likely to find effects on consumption because counteradvertising is measured in a range where the response function has a negative slope (Figure 2). Some evidence for effectiveness of counteradvertising comes from studies of anti-drunk driving public service announcements (PSAs). A review by Wallack and DeJong (1995) concluded that PSAs can increase awareness but may have little effect on behavior. However, Ognianova and Thorson (1997) found that, for adults in Missouri, PSAs can reduce drunk driving. This study did not find an effect of PSAs on youth ages 15 to 20.

Additional evidence on the effectiveness of counteradvertising comes from the tobacco literature. The anti-smoking publicity events in 1953 and 1964 and the Fairness Doctrine period from 1967 to 1970 provide good data for

econometric studies of counteradvertising. During the Fairness Doctrine period, broadcasters in the United States were required to donate air time to counteradvertising. At its peak, the ratio of counteradvertising to advertising was one to three. A number of studies found that counteradvertising reduced cigarette consumption. Warner (1981), Lewit et al. (1981), Schneider et al. (1981) and Baltagi and Levin (1986) included measures of counteradvertising, and they all concluded that counteradvertising was effective in reducing cigarette consumption.

A series of local counteradvertising campaigns have also been analyzed. Pierce et al. (1990) found that counteradvertising reduced smoking in two Australian cities. Hu et al. (1995) found that counteradvertising reduced smoking in California. Goldman and Glantz (1998) found effects from counteradvertising in California and Massachusetts. Flay (1987) reviewed the results of local counteradvertising campaigns in Finland, Greece, the United Kingdom, Norway, Israel, Austria and Canada and also concluded that counteradvertising was effective in reducing cigarette consumption.

Counteradvertising has been an important part of California's new tobacco control program. An interesting study by Goldman and Glantz (1998) analyzed the effectiveness of different counteradvertising messages and found that messages that depicted tobacco executives as deceitful, manipulative, dishonest and greedy were most effective. According to the authors, this type of advertising helps adults change their self-image as smokers from "guilty addict" to "innocent victim." The least effective counteradvertising portrayed smoking as unhealthy and unromantic. The health messages did not convey any new information and, for people with only a dim view of the future, were meaningless. The romantic rejection themes did not work because people believed that an individual's smoking status could be overlooked if they were otherwise desirable.

Conclusions

Critics of alcohol advertising want to reduce the social and medical problems associated with the misuse of alcohol, and they often argue for a ban on alcohol advertising. This policy choice is based on the assumptions that alcohol advertising increases alcohol misuse and that bans eliminate or reduce advertising. Although there is enough evidence to conclude that advertising increases total alcohol consumption and alcohol misuse, advertising bans reduce advertising only under certain conditions. A ban on one or two media, such as television and radio, will result in substitution to available alternative media. It can be argued that television and radio reach so many people that bans on their use will surely have an effect. However, media that can reach more people charge proportionally higher prices, and, per dollar spent, television and radio are no more ef-

fective than other mass media. It is possible that bans on campus alcohol advertising could have an additional effect by acting as a signal of administrative intolerance. The direction and magnitude of the effects of such a policy, if any, would be an interesting topic for future study.

The theory outlined earlier in the section on methodological issues explains that a ban on use of a given medium will result in substitution to other available media. This does not reduce total expenditures on alcohol advertising, and there is no reason to expect that a ban in a given medium will have an effect on alcohol consumption. However, forcing the expenditure into fewer media reduces the effectiveness of the total outlay due to diminishing marginal product, as described by the industry response function. In a perfectly competitive market, a factor whose price has risen or whose effectiveness has fallen would be employed less extensively. However, the alcohol industry is not a perfectly competitive industry and is better characterized by a response-to-rivals model. Alcohol companies may seek to compensate for loss of sales by increasing total outlays on advertising of existing brands or by advertising new brands. They may also seek to compensate with other forms of promotion, such as retailer discounting or couponing. The only way to reduce total advertising is to legislate comprehensive advertising bans, including all forms of promotion, and display of the product's name, the product and product logos.

Because alcohol advertising bans have been fairly limited, the experience with tobacco advertising bans provides some empirical support for the theory presented above. In the United States, immediately after tobacco advertising was banned from radio and television in 1970, tobacco advertising expenditures fell. However, within a few years, advertising expenditures were back at their former level (Eckard, 1991). Similarly, data from the Federal Trade Commission (1998) indicate that during the past 20 years the tobacco companies have shifted from advertising to other promotional activities. This shift may have been in anticipation of new restrictions, such as those included in the recent master tobacco settlement between the industry and the states. From 1986 to 1996 real spending on advertising decreased by 40%; real spending on other promotional activities increased by 45%. On balance, total promotional spending has increased by 18%. Saffer and Chaloupka (2000) and Saffer (2000) provide evidence that comprehensive advertising bans reduce tobacco use and limited bans have no effect.

Alcohol, unlike tobacco, has a historic place in social custom. Of those who drink, 90% do so safely. For tobacco, there is no safe level of consumption. Alcohol use and misuse have also been trending downward over the past few years. Given this history, it does not seem likely that the type of advertising bans required to reduce alcohol consumption would ever receive strong public support.

Although surveys show that the public supports the idea of alcohol advertising bans, the recent entrance of spirits advertisers in the cable television market has not generated any public concern. Five Organization for Economic Cooperation and Development countries recently rescinded bans on alcohol advertising. Alternatively, there is an increasing body of literature that demonstrates that alcohol counter-advertising is effective with teenagers and young adults (Atkin, 1993). New restrictions on alcohol advertising might also result in less alcohol counteradvertising. Given these trade-offs, increased counteradvertising, rather than new advertising bans, appears to be the better choice for public policy.

Although alcohol counteradvertising may be a good choice for reducing youth alcohol misuse, there is still much to learn about the most effective content and placement. The message content that was found to be effective against tobacco industry manipulation may not be appropriate for alcohol. Alcohol is widely accepted as part of social life, generally consumed safely and recommended by the Surgeon General. Message content that vilifies the industry is not likely to produce the desired reaction. An important area for future research is to identify the message content that would be effective with youth. Also, the media mix that would be most effective in bringing the message to young people is not well understood. This is particularly true for the Internet.

References

- ACKOFF, R.L. AND EMSHOFF, J.R. Advertising research at Anheuser-Busch, Inc. (1963-68). *Sloan Manag. Rev.* **16**: 1-15, 1975.
- ADVERTISING AGE. Sales per ad dollar by most advertised segments, www.adage.com, 1999.
- ATKIN, C.K. On regulating broadcast alcohol advertising. *J. Broadcast. Elect. Media* **37**: 107-113, 1993.
- BALTAGI, B.H. AND LEVIN, D. Estimating dynamic demand for cigarettes using panel data: The effects of bootlegging, taxation, and advertising reconsidered. *Rev. Econ. Stat.* **68**: 148-155, 1986.
- BLAKE, D. AND NIED, A. The demand for alcohol in the United Kingdom. *Appl. Econ.* **29**: 1655-1672, 1997.
- BOURGEOIS, J.C. AND BARNES, J.G. Does advertising increase alcohol consumption? *J. Advert. Res.* **19** (4): 19-29, 1979.
- BOYD, R. AND SELDON, B.J. The fleeting effect of advertising: Empirical evidence from a case study. *Econ. Lett.* **34**: 375-379, 1990.
- BREED, W., WALLACK, L. AND GRUBE, J.W. Alcohol advertising in college newspapers: A 7-year follow-up. *J. Amer. Coll. Hlth* **38**: 255-262, 1990.
- CENTER FOR MEDIA EDUCATION. Alcohol advertising targeted at youth on the internet: An update, <http://tap.epn.org>, 1998.
- COMPETITIVE MEDIA REPORTING. LNA/Media Watch Multi-Media Service, New York: Competitive Media Reporting, 1998.
- CORE INSTITUTE. Alcohol and Drugs on American College Campuses, Carbondale, IL: Core Institute, Southern Illinois University, 1998.
- DUFFY, M.H. Advertising and the inter-product distribution of demand: A Rotterdam model approach. *Europ. Econ. Rev.* **31**: 1051-1070, 1987.
- DUFFY, M. Advertising in demand systems for alcoholic drinks and tobacco: A comparative study. *J. Policy Model.* **17**: 557-577, 1995.
- ECKARD, E.W., Jr. Competition and the cigarette TV advertising ban. *Econ. Inq.* **29**: 119-133, 1991.
- FEDERAL TRADE COMMISSION. Federal Trade Commission Report to Congress for 1996: Pursuant to the Federal Cigarette Labeling and Advertising Act, Washington: Federal Trade Commission, 1998.
- FEDERAL TRADE COMMISSION. Self-regulation in the alcohol industry: A review of industry efforts to avoid promoting alcohol to underage consumers, www.ftc.gov, 1999.
- FISHER, J.C. Advertising, Alcohol Consumption, and Abuse: A Worldwide Survey, Westport, CT: Greenwood Press, 1993.
- FLAY, B.R. Selling the Smokeless Society: 56 Evaluated Mass Media Programs and Campaigns Worldwide, Washington, DC: Amer. Publ. Hlth Assn, 1987.
- FRANKE, G.R. AND WILCOX, G.B. Alcoholic beverage advertising and consumption in the United States, 1964-1984. *J. Advert.* **16** (3): 22-30, 1987.
- GOEL, R.K. AND MOREY, M.J. The interdependence of cigarette and liquor demand. *So. Econ. J.* **62**: 441-459, 1995.
- GOLDMAN, L.K. AND GLANTZ, S.A. Evaluation of antismoking advertising campaigns. *JAMA* **279**: 772-777, 1998.
- GRANT, B.F. AND DAWSON, D.A. Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey. *J. Subst. Abuse* **9**: 103-110, 1997.
- GRUBE, J.W. Alcohol portrayals and alcohol advertising on television: Content and effects on children and adolescents. *Alcohol Hlth Res. World* **17**: 54-60, 1993.
- GRUBE, J.W. AND WALLACK, L. Television beer advertising and drinking knowledge, beliefs, and intentions among schoolchildren. *Amer. J. Publ. Hlth* **84**: 254-259, 1994.
- HAWKINS, J.D., GRAHAM, J.W., MAGUIN, E., ABBOTT, R., HILL, K.G. AND CATALANO, R.F. Exploring the effects of age of alcohol use initiation and psychosocial risk factors on subsequent alcohol misuse. *J. Stud. Alcohol* **58**: 280-290, 1997.
- HINGSON, R.W., HEEREN, T., JAMANKA, A. AND HOWLAND, J. Age of drinking onset and unintentional injury involvement after drinking. *JAMA* **284**: 1527-1533, 2000.
- HU, T.-W., SUNG, H.-Y. AND KEELER, T.E. Reducing cigarette consumption in California: Tobacco taxes vs an anti-smoking media campaign. *Amer. J. Publ. Hlth* **85**: 1218-1222, 1995.
- LEWIT, E.M., COATE, D. AND GROSSMAN, M. The effects of government regulation on teenage smoking. *J. Law Econ.* **24**: 545-569, 1981.
- MAKOWSKY, C.R. AND WHITEHEAD, P.C. Advertising and alcohol sales: A legal impact study. *J. Stud. Alcohol* **52**: 555-567, 1991.
- NELSON, J.P. Broadcast advertising and U.S. demand for alcoholic beverages. *So. Econ. J.* **65**: 774-790, 1999.
- NELSON, J.P. AND MORAN, J.R. Advertising and US alcoholic beverage demand: System-wide estimates. *Appl. Econ.* **27**: 1225-1236, 1995.
- OGBORNE, A.C. AND SMART, R.G. Will restrictions on alcohol advertising reduce alcohol consumption? *Brit. J. Addict.* **75**: 293-296, 1980.
- OGNIANOVA, E. AND THORSON, E. Associations between drunk driving PSAs, alcohol moderation ads and safe driving behavior. Proceedings of the Conference of the American Academy of Advertising, 1997, pp. 8-19.
- ORNSTEIN, S.L. AND HANSSSENS, D.M. Alcohol control laws and the consumption of distilled spirits and beer. *J. Consum. Res.* **12**: 200-213, 1985.
- PARKER, B.J. Exploring life themes and myths in alcohol advertisements through a meaning-based model of advertising experiences. *J. Advert.* **27**: 97-112, 1998.
- PIERCE, J.P., MACASKILL, P. AND HILL, D. Long-term effectiveness of mass media led antismoking campaigns in Australia. *Amer. J. Publ. Hlth* **80**: 565-569, 1990.
- RAO, A.G. AND MILLER, P.B. Advertising/sales response functions. *J. Advert. Res.* **15** (2): 7-15, 1975.

- ROBERT WOOD JOHNSON FOUNDATION. *Advances* 1, 1999.
- SAFFER, H. Alcohol advertising bans and alcohol abuse: An international perspective. *J. Hlth Econ.* **10**: 65-79, 1991.
- SAFFER, H. Alcohol advertising and motor vehicle fatalities. *Rev. Econ. Stat.* **79**: 431-442, 1997.
- SAFFER, H. Tobacco advertising and promotion. In: JHA, P. AND CHALOUKKA, F.J. (Eds.) *Tobacco Control in Developing Countries*, New York: Oxford Univ. Press, 2000, pp. 215-236.
- SAFFER, H. AND CHALOUKKA, F. The effect of tobacco advertising bans on tobacco consumption. *J. Hlth Econ.* **19**: 1117-1137, 2000.
- SCHMALENSEE, R. *The Economics of Advertising*, Amsterdam, the Netherlands: North-Holland, 1972.
- SCHNEIDER, L., KLEIN, B. AND MURPHY, K.M. Government regulation of cigarette health information. *J. Law Econ.* **24**: 575-612, 1981.
- SELVANATHAN, E.A. Advertising and alcohol demand in the UK: Further results. *Int. J. Advert.* **8** (2): 181-188, 1989.
- SMART, R.G. AND CUTLER, R.E. The alcohol advertising ban in British Columbia: Problems and effects on beverage consumption. *Brit. J. Addict.* **71**: 13-21, 1976.
- WALLACK, L. AND DEJONG, W. Mass media and public health: Moving the focus from the individual to the environment. In: MARTIN, S.E. AND MAIL, P. (Eds.) *The Effects of the Mass Media on the Use and Abuse of Alcohol*, NIAAA Research Monograph No. 28, NIH Publication No. 95-3743, Rockville, MD: Department of Health and Human Services, 1995, pp. 253-268.
- WARNER, K.E. Cigarette smoking in the 1970s: The impact of the anti-smoking campaign on consumption. *Science* **211**: 729-731, 1981.
- ZUCKER, R.A. AND FITZGERALD, H.E. Early developmental factors and risk for alcohol problems. *Alcohol Hlth Res. World* **15**: 18-24, 1991.