

*Is the alcoholic beverage industry targeting minors with magazine ads?*

# Advertising, Alcohol, and Youth

BY JON P. NELSON  
*Pennsylvania State University*

**I**N 2001, THE U.S. ALCOHOLIC BEVERAGE INDUSTRY spent more than \$1.5 billion on advertising using conventional broadcast and print media. That total includes expenditures of \$397 million on magazine advertisements. The magnitude of expenditures and the possibility that some ads might “target” youth have generated concern about the adverse effects of alcohol advertising.

Demonstrating that advertising has an effect on alcohol consumption, rather than brand equity, has proven to be elusive. A report to Congress in 2000 by the National Institute on Alcohol Abuse and Alcoholism concluded that “the results of research on the effects of alcohol advertising are mixed and not conclusive.” A recent report by the National Research Council’s Institute of Medicine, which was conducted at the behest of Congress, reached much the same conclusion. Nevertheless, the Council recommended heightened regulation of alcohol advertising.

## FIRST AMENDMENT CONSIDERATIONS

Efforts to regulate alcohol advertising raise several issues, not the least of which is the question of whether such regulation violates the First Amendment’s guarantee of free speech. A long series of Supreme Court decisions, culminating in *Central Hudson* in 1980

**Jon P. Nelson** is professor emeritus of economics at the Pennsylvania State University. He may be contacted by e-mail at [jpn@psu.edu](mailto:jpn@psu.edu).

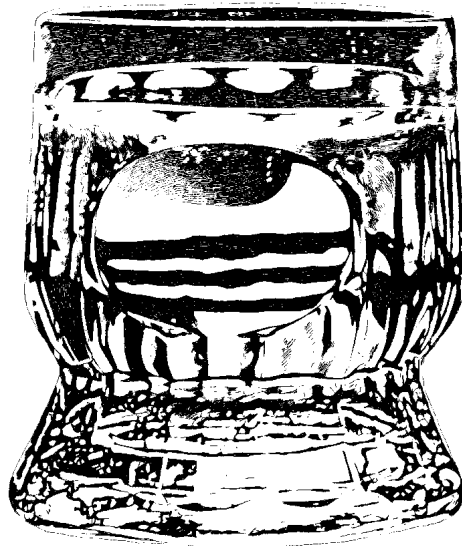
Nelson has consulted with firms in the alcohol industry and continues to consult with a law firm associated with the industry.

and 44 *Liquormart* in 1996, demonstrate that commercial speech enjoys attenuated First Amendment rights, and those rights are not trumped by the restrictions on alcohol distribution contained in the 21st Amendment.

In *Central Hudson*, the Court laid out a four-prong approach to regulation of commercial speech:

- The message content cannot be misleading and must be concerned with a lawful activity or product.
- The government’s interest in regulating the speech in question must be substantial.
- The regulation must directly and materially advance that interest.
- The regulation must be no more extensive than necessary to achieve its goal; that is, there must be a “reasonable fit” between means and ends, with the means narrowly tailored to achieve the objective.

*Central Hudson* requires a “balancing-of-interests” test to examine regulation of commercial speech, including alcohol advertisements. The test weighs the government’s obligations toward freedom of expression with its interest in limiting the content of some advertisements. In statistical language, the test reduces the risk of a false positive or “Type I” error—regulating commercial speech unnecessarily because of an incorrect inference that the speech affects behavior that is of legitimate public concern. Reasonable constraints on time, place, and manner are tolerated, and false or deceptive advertising remains illegal. However, in order for a regulation of alcohol advertising to pass constitutional scrutiny, it must be demonstrated that the advertising deliberately or



unnecessarily targets youth or the advertisements result in alcohol abuse by youth. Thus, *Central Hudson* delineates the empirical studies and results that are likely to be relevant to policymakers and regulators.

### EVALUATING MAGAZINE ADS

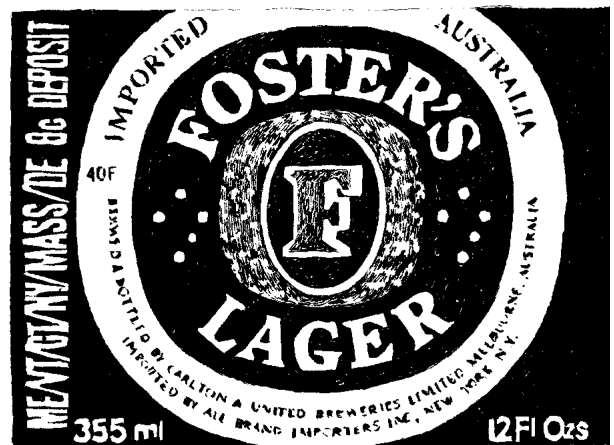
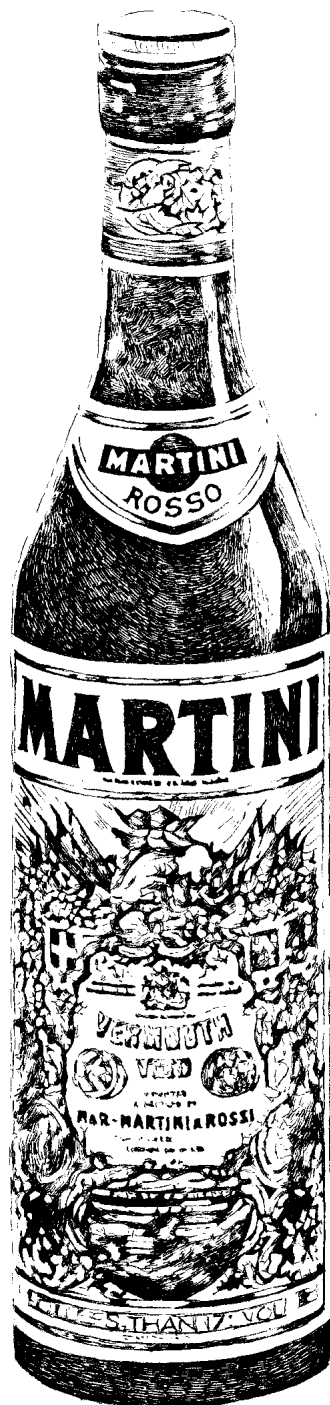
Early research on alcohol advertising in magazines was based on the method of content analysis, which attempts to demonstrate targeting of youth by examining the content dimensions of alcohol ads. Content-analysis studies tend to employ overly broad categories to codify various “lifestyle themes” in advertising and impute motivations to advertisers based on largely subjective judgements about the themes used in the ads. The evidence provided by content analyses tends to be informal and anecdotal in nature, and it stops short of the evidence that would likely satisfy the *Central Hudson* test.

**PLACEMENT STUDIES** Given the shortcomings of content analyses, more recent studies attempt to measure exposure to alcohol advertisements by adolescents and youth, including two studies published by the *Journal of the American Medical Association (JAMA)*. In a brief article published in 2000, a team of researchers led by Lori Sanchez examined advertising placements in a sample of 15 magazines from July 1997 to July 1998. However, the authors used the holdings of a local high school library and did not attempt to obtain missing issues for some of the magazines. Instead, they simply estimated the total number of ads based on the issues available at the high school or expanded the sample to include 1998–1999 ads for a few popular magazines. (The possible effects of this inconsistent sampling process were not discussed in the article.) Adolescent readership was measured by the absolute number of readers in the age group 12–17 years, which ranged from 0.7 mil-

lion for *Harper's Bazaar* to 5.2 million for *Sports Illustrated*.

In their reported results, the authors simply provide a tabular ranking of the magazines according to the estimated yearly number of alcohol and tobacco ads, which fails to account for other differences in readership demographics, such as the number of adult readers. Using those counts, the authors' top-ranked magazines were *Sports Illustrated* and *Rolling Stone* with 5.2 and 1.9 million youth readers, respectively. Based on that limited evidence, the authors concluded that “alcohol advertisers may target youths.”

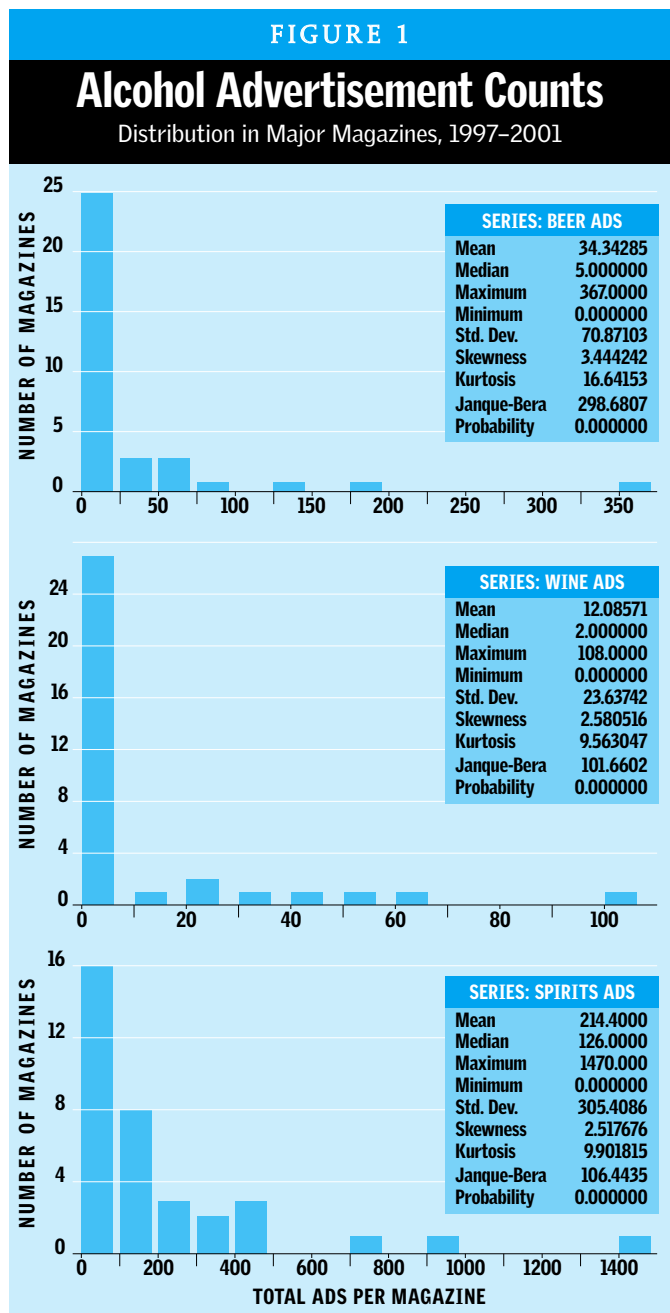
Another study of magazine placements was conducted by C. F. Garfield, P. J. Chung, and P. J. Rathouz and was published



in *JAMA* in 2003. The researchers examined the frequency of alcohol advertising in 35 major magazines during the five-year period 1997–2001, conditional on three readership cohorts. The authors report that annual alcohol advertising placements increased proportionately more than adolescent readership, which suggests targeting of youth (ages 12–19). Their Poisson regression model controlled for the number of readers in two other age groups (young adults, older adults) and three additional demographic variables (number of readers by gender, race, and income level).

The 2003 study is characterized by several econometric problems. First, none of the explanatory variables vary over time, whereas the three dependent variables—annual number of alcohol advertisements by beverage—do vary with time. Consequently, variables for readership cohorts and other demographics can only explain cross-sectional variation in the data, and a set of yes-and-no (binary) variables for each year explains all of the temporal variation. Second, the study suffers from multicollinearity: the various measures of readership (youth, young adult and older adult) all covary with each other, making it difficult to distinguish their effects statistically. For example, major magazines such as *Sports Illustrated* have large numbers of adolescent, young adult, and adult readers. Third, the authors report that they used the Poisson “regression model for the log advertisement rate.” It is unclear whether they are referring to the Poisson model as a nonlinear regression or if they have ignored the discrete nature of the dependent variables and the fact that many magazines have no alcohol ads at all (zero counts). It is also unclear if they handled correctly the duration dependence in the count data by simple inclusion of binary variables for each year. Fourth, using simple graphs, the authors report that the Poisson model residuals indicate overdispersion; that is, the variance is much larger than the mean. The authors fail to utilize regressions in which the Poisson equidispersion restriction is relaxed.

A final set of advertising placement studies was conducted by the advocacy organization Center on Alcohol Marketing and Youth (CAMY). CAMY’s studies do not contain statistical analysis and are based on “gross rating points” rather than total advertising impressions. Nevertheless, the studies are important because of the role that they played in the recent report of the National Research Council, several class-action lawsuits filed against alcohol producers, deceptive advertising petitions to the Federal Trade Commission and the Treasury’s Alcohol and Tobacco Tax and Trade Bureau, and a 2003 FTC report on regulation of alcohol advertising. Using data on advertising exposure for “reach” and “frequency,” CAMY constructed a measure of reader exposure for each of three age groups for 98 magazines in 2001, including 24 magazines that CAMY classified as “youth oriented.” For example, in 2001, *Sports Illustrated* had a youth audience (ages 12–20) of about 6.1 million and a total readership of 24.4 million, which means that adult readership was 18.3 million or 75 percent of the magazine’s total audience. Nevertheless, CAMY classified the magazine as “youth-oriented” and ignored the larger absolute number of adult readers in the



analysis; that is, 75 percent of *Sports Illustrated* ads reached adults, so those ads cannot be seen by more youths than by adults as was wrongly claimed by CAMY.

Given the shortcomings of the *JAMA* and CAMY placement studies, another examination of alcohol advertising in magazines is in order.

**ECONOMETRIC METHODS AND DATA**

I analyzed cumulative ad placements for alcohol beverage in 35 magazines for the five-year period 1997–2001. This approach ignores year-to-year fluctuations in placements, which are not of particular interest, and reduces the number of zeros in the ad counts. It is also consistent with arguments in the public health literatures; for example, it is often argued that advertising has cumulative or lagged effects on adolescent behaviors, and examination of total placements for a longer time period

captures this broader concern. The number of ads per magazine (placement counts) by beverage is from various reports by Competitive Media Reporting.

**ECONOMETRIC METHODS** I estimated a Poisson regression model for the number of alcohol placements per magazine. This regression method accounts for the skewed distribution of placements. Both zero counts and positive counts are included in the regressions.

Statistical tests indicate overdispersion in some Poisson model specifications, which means that the conditional variance is greater than the conditional mean. This implies that there are differences across magazines that are not accounted for by the explanatory variables (unexplained heterogeneity) or, alternatively, the causes of the decision to advertise in a given magazine are not the same as the causes of the (second-stage) choice of the number of ads. Econometric results are reported for models that allow for heterogeneity and overdispersion.

**EXPLANATORY VARIABLES** The key explanatory variables in the study are magazine readerships for three age groups, which are obtained from Mediamark Research, Inc. (MRI). For adults, the readership data are based on face-to-face interviews and self-reported readership by 13,000 persons. For youth, a mail survey is used.

Readers are divided into three age groups: adolescents (12–19 years); young adults (20–24 years); and older adults (25+ years). The data represent the audience “reach” of an alcohol advertisement, which is defined as the number of people in a given population group who have the potential to see an alcohol advertisement. In addition, demographic data by magazine were obtained from MRI for the number of male readers (men); number of black readers (blacks); and number of lower-income readers (no. low income). Additional explanatory variables in the present study are the number of issues per year (no. of issues), median reader age for adults 20 years and older (median age), and median reader income (median income). In lieu of information on the page size of ads, the annual number of issues is included as a proxy variable. The price of ads is not included because the cost of

an advertisement per exposure should be roughly constant in a cross-section of magazines. (Garfield et al. reported that their cost measure was not statistically significant.)

The null hypothesis is that increased youth readership does not result in an increased number of alcohol placements. Expected signs and magnitudes for the other explanatory variables are largely uncertain. In principle, the objective is to “unbundle” the advertising decisions of alcohol producers by examining those demographic influences that systematically increase (or decrease) the frequency of placements. Econometric methods accomplish this unbundling and reveal the underlying influences.

**PLACEMENT DISTRIBUTIONS** Figure 1 shows the skewed distributions of the magazine placement data by beverage for the advertisement counts. Variances are greater than the unconditional means by ratios of 59 to 435, which suggests overdispersion. The empirical question is whether this overdispersion disappears on inclusion of the regressors. Most magazines contained only a few alcohol ads during the five-year period, but a few magazines had a large number of placements, such as *Sports Illustrated* for beer; *Entertainment Weekly*, *Rolling Stone*, and *Sports Illustrated* for spirits; and *In-Style* for wine. For beer, there were eight magazines that contained no beer advertising whatsoever during 1997–2001; 10 magazines averaged one or fewer ads per year; and only seven magazines averaged more than 10 ads per year. The distributions in Figure 1 imply that it is important to account for zero counts and small positive values of advertising placements.

**EMPIRICAL RESULTS**

The focus of the empirical investigation is the number of adolescent readers. However, because major magazines have a large number of readers in several age groups, this variable is correlated with several other explanatory variables that are based on readership numbers. When explanatory variables are highly correlated—that is, collinear—it is difficult for a multivariate regression to estimate the independent contribution of a regressor to the observed variation in the dependent variable. Two consequences are likely: the standard errors are inflat-

TABLE 1

**Age and Alcohol Advertising**

Zero-order correlations among selected explanatory variables

Beverage	Youth & Young Adults	Youth & Adults	Young Adults & Adults	Youth & Men	Youth & Blacks	Youth & Low- Income	Youth & Median Age	Youth & Median Income
Beer	0.796*	0.584*	0.498	0.768*	0.348	0.643*	0.160	-0.278
Spirits	0.782*	0.714*	0.664*	0.773*	0.326	0.769*	0.298	-0.208
Wine	0.763*	0.459	0.358	0.821*	0.197	0.470	0.089	-0.219
All	0.782*	0.604*	0.536*	0.798*	0.350	0.634*	0.210	-0.189

Notes: Asterisks indicate statistically significant correlations at the 99% level; critical values are beer, 0.529; spirits, 0.494; wine, 0.561; and all beverages, 0.465. Different samples by beverage reflect exclusion of zero counts, except in the last row. Youth variable is the estimated number of adolescent readers (ages 12-19) for a magazine; Young Adults is the number of readers ages 20-24 years; Adults is the number of readers ages 25+ years; Men is the number of male readers; Blacks is the number of African-American readers; Low-Income is the number of readers with annual household income of less than \$30,000; Median Age is the average age of readers 20 years and older; and Median Income is the average household income of adult readers in 1999 dollars.



# MERCATUS POLICY SERIES

*Ideas into Action*

Announcing a new series of policy publications by the scholars of the Global Prosperity Initiative at the Mercatus Center at George Mason University:

- **POLICY PRIMERS** - A user-friendly guide to the economic fundamentals that build sound policy. The first issue examines *The Role of Institutions in Entrepreneurship: Implications for Development Policy*.
- **POLICY COMMENTS** - An analysis of a specific policy and recommendations for improvement. Issue number one is based upon a two-year study of *Microfinance in the Philippines*.
- **COUNTRY BRIEFS** - A first-hand report from Mercatus field-study teams on the critical issues facing countries. The inaugural issue analyzes *Botswana*.

Visit [www.mercatus.org/globalprosperity](http://www.mercatus.org/globalprosperity) or call 1-800-815-5711 to request individual publications or the whole series.



**MERCATUS CENTER**  
GEORGE MASON UNIVERSITY  
[www.mercatus.org](http://www.mercatus.org)

TABLE 2

## Poisson Regression Analysis of Alcohol Advertisements Counts

(Dependent variables: magazine advertising placements by beverage, zero counts included)

Variable	(1) Beer	(2) Beer	(3) Beer	(4) Spirits	(5) Spirits	(6) Spirits	(7) Wine	(8) Wine	(9) Wine
Constant	1.910 (3.10)*	8.991 (6.22)*	11.75 (6.77)*	3.635 (8.31)*	9.623 (5.44)*	10.74 (6.11)*	1.848 (3.48)*	2.411 (1.11)	-5.852 (2.46)*
Youth (no.)	0.416 (1.36)	0.032 (.100)	-0.120 (.620)	0.397 (2.04)*	0.047 (.200)	-0.166 (.760)	-0.013 (.030)	-0.029 (.070)	0.347 (1.00)
Young adult (no.)	0.227 (1.42)	—	—	0.895 (6.82)*	—	—	1.000 (4.64)*	—	—
Adults (no.)	-0.288 (2.38)*	—	—	0.123 (1.73)	—	—	0.774 (3.37)*	—	—
Median age (yrs.)	—	-0.225 (5.11)*	-0.246 (8.19)*	—	-0.164 (3.11)*	-0.213 (5.26)*	—	-0.004 (.050)	0.106 (2.80)*
Men (no.)	0.164 (1.89)	0.218 (2.93)*	0.254 (4.25)*	-0.023 (.420)	0.150 (2.47)*	0.163 (2.46)*	-0.383 (1.81)	-0.028 (.250)	-0.151 (1.32)
Blacks (no.)	0.004 (.040)	0.214 (2.33)*	0.129 (1.06)	0.236 (2.40)*	0.142 (2.23)*	0.134 (1.76)	0.301 (2.06)*	-0.127 (1.18)	0.043 (.320)
No. low income	0.412 (1.17)	-0.063 (.620)	—	-1.048 (3.52)*	-0.173 (1.26)	—	-2.516 (3.28)*	0.094 (.550)	—
Median income	—	—	-0.035 (1.39)	—	—	0.008 (.680)	—	—	0.065 (3.44)*
No. of issues	0.009 (.880)	0.019 (1.92)	0.019 (2.12)*	0.026 (2.67)*	0.026 (3.14)*	0.030 (3.85)*	0.122 (1.21)	0.015 (.900)	0.024 (2.03)*
pseudo-R <sup>2</sup>	0.684	0.723	0.740	0.717	0.640	0.624	0.546	0.038	0.252
Log L	-458.8	-402.3	-378.1	-1580	-2004	-2099	-251.3	-532.4	-413.9

Notes: Dependent variables are total number of advertisements during the period 1997–2001, with zero observations included. Estimates obtained using Stata 8.2 software. Z-statistics in parentheses are based on robust standard errors; an asterisk indicates a statistically significant coefficient at the 95% level, two-tailed test. All regressions are statistically significant based on a Wald chi-square test, except regression (8). Readership numbers (no.) are expressed in millions of people. Median income is in thousands of 1999 dollars. Log L is the log-likelihood value.

ed or the empirical results are sensitive to particular data points or the model specification. I first demonstrate the degree of correlation among the readership variables and then introduce two alternative variables that are less correlated with the number of adolescent readers.

Zero-order correlations ( $\rho$ ) among the explanatory variables are shown in Table 1 for each beverage. Examining each beverage is necessary because of the possible restrictions placed on the estimation by zero counts as well as the controversies that surround the advertising practices for different beverages and producers. Table 1 shows several high correlations ( $\rho > 0.50$ ) among the number of readers in each age group, especially between youth and young adults ( $\rho > 0.75$ ). That is not surprising because a popular magazine with a larger readership tends to have a large number of readers in all age groups. The correlation between youth and young adults is particularly high and may illustrate a spillover dilemma faced by regulators; that is, what is read and enjoyed by young adults is also likely to be read by youth. Youth readership also tends to be correlated with male and lower-income readers. However, the last two columns show lower correlations when two alternative readership variables are introduced: the median age and income of adult readers. None of the correlations in the last two columns are statistically significant.

In the regression analysis, I show the effect of replacing the

variables for young adult and older adult readers with the median age of adult readers (ages 20+). Because it is important to the policy results, the variable for number of youth is always included in the regressions. I also show the effect of replacing the number of lower-income readers with the variable for the median income of readers.

**POISSON REGRESSION RESULTS** In Table 2, the dependent variables are total numbers of beer, spirits, or wine magazine advertisements for the period 1997–2001, including zero counts. The estimated coefficients indicate the proportional increase in the number of placements for a one-unit increase in an explanatory variable. More generally, positive coefficients indicate that advertisers tend to favor or “target” magazines with the reader characteristic in question, while negative coefficients indicate the opposite effect.

The results in Table 2 fail to demonstrate that targeting of youth exists. For beer and wine, the youth coefficient is never statistically significant. The significantly positive coefficient for spirits in regression (4) is not replicated in the specifications that take into account collinearity and overdispersion. Four of nine estimates for youth are negative. Coefficients for young adults are significantly positive for spirits and wine, while the coefficient for older adults is significantly negative for beer. The alternative demographic for adult readers – median age for adult readers – is significantly negative in five

of six regressions, but the youth coefficients in those regressions are insignificant. Median age and median reader income are significantly positive for wine.

Overall, the results indicate that beer and spirits advertisers favor magazines with more readers among younger adults, men, and blacks, but not adolescents. Wine advertisers favor magazines with more adults and higher-income readers, but not adolescents. With regard to multicollinearity, median age and income of readers provide a better fit for beer as indicated by the log-likelihood values.

**TESTS FOR OVERDISPERSION** A well-known problem with the Poisson model is that the decisions that cause the zero outcomes of the data-generating process may be quantitatively different from the positive outcomes. The proportion of zeros in the placement data are 22 percent for beer, 11 percent for spirits, and 31 percent for wine. It is conceivable that different models apply to different magazines and beverages, and this is reflected in different proportions of zeros in the sample. For example, it is not clear if a zero placement arises because advertisers did not happen to use a particular magazine during the five-year study period or because the magazine would never be chosen for a particular beverage (for

example, a zero count for wine ads in *Popular Mechanics*).

I first tested for overdispersion using two available econometric tests. Those tests produced mixed results, but overdispersion was found for several of the regressions in Table 2. In light of this, I estimated two models that correct for overdispersion and heterogeneity—the negative binomial and the zero-inflated Poisson regression models. Those additional results and other tests suggest the negative binomial is the preferred model.

**ALTERNATIVE ECONOMETRIC ESTIMATES** Table 3 displays the estimates for negative binomial and zero-inflated Poisson regressions. Two alternative specifications are reported for spirits in light of the positive youth coefficient found in Table 2. None of the youth coefficients in Table 3 are statistically significant, including those for distilled spirits. In other respects, the results are similar to Table 2. Median reader age for adults is significantly negative for beer and spirits, and significantly positive for wine in regression (4). Male readership is significantly positive for beer and spirits, while median income is significantly positive for wine. Black readership is significantly positive for all beverages in the negative binomial regressions but not in the zero-inflated Poisson regressions.

TABLE 3

## Count Data Regression Analysis of Alcohol Advertisements

(Dependent variables: magazine advertising placements by beverage, zero counts included)

Variable	Negative Binomial				Zero-Inflated Poisson			
	(1) Beer	(2) Spirits	(3) Spirits	(4) Wine	(5) Beer	(6) Spirits	(7) Spirits	(8) Wine
Constant	11.07 (5.81)*	12.65 (5.56)*	1.211 (.650)	-16.85 (4.49)*	11.27 (7.79)*	10.53 (6.01)*	3.150 (3.87)*	-4.101 (1.08)
Youth (no.)	-0.287 (1.24)	-0.554 (1.56)	0.050 (.190)	0.814 (1.91)	-0.096 (.610)	-0.162 (.740)	0.161 (.750)	0.494 (1.18)
Young Adults (no.)	---	---	0.865 (3.00)*	---	---	---	0.639 (3.89)*	---
Adults (no.)	---	---	-0.224 (4.65)*	---	---	---	-0.140 (4.00)*	---
Median age (yrs.)	-0.228 (5.40)*	-0.340 (3.83)*	---	0.160 (3.04)*	-0.211 (7.89)*	-0.202 (4.83)*	---	0.096 (1.75)
Men (no.)	0.273 (2.97)*	0.329 (2.25)*	0.169 (1.76)	-0.323 (2.93)*	0.229 (5.00)*	0.163 (2.46)*	0.048 (.910)	-0.124 (.950)
Blacks (no.)	0.192 (2.51)*	0.313 (2.42)*	0.186 (2.12)*	0.420 (2.06)*	0.045 (.380)	0.125 (1.70)	0.031 (.420)	-0.145 (.750)
Median income	-0.030 (1.63)	0.053 (1.17)	0.046 (1.48)	0.200 (4.77)*	-0.039 (1.95)	0.007 (.610)	0.017 (1.45)	0.048 (2.10)*
No. of issues	0.018 (1.10)	0.029 (2.89)*	0.026 (2.60)*	0.027 (2.07)*	0.018 (2.19)*	0.027 (3.31)*	0.024 (2.68)*	0.016 (1.30)
pseudo-R <sup>2</sup>	0.085	0.065	0.072	0.103	na	na	na	na
Log L	-129.9	-199.1	-197.7	-98.07	-269.9	-2026	-1970	-307.1
alpha (s.e.)	1.584 (.507)	1.196 (.288)	1.102 (.244)	1.718 (.568)	---	---	---	---

Notes: Dependent variables are total number of advertisements during the period 1997-2001, with zero observations included. Estimates obtained using Stata 8.2 software. Z-statistics in parentheses are based on robust standard errors; an asterisk indicates a statistically significant coefficient at the 95% level, two-tailed test. All regressions are statistically significant based on a Wald chi-square test. Readership numbers are expressed in millions of people. Median income is in thousands of 1999 dollars. Log L is the log-likelihood value and alpha is the overdispersion parameter in the negative binomial model. A likelihood ratio test strongly rejected the undeflated Poisson model in favor of the negative binomial. Vuong's test for non-nested models did not strongly favor the zero-inflated Poisson compared to the undeflated Poisson, suggesting the negative binomial is the preferred model.

The regressions again fail to demonstrate targeting of youth by alcohol advertisers.

## CONCLUSION

Beer and spirits producers tend to advertise in magazines with more young adult readers (ages 20–24), men, and blacks. Wine advertisers tend to favor older readers (age 25+) and higher-income readers. Adolescent readers are not important statistically for any beverage, including spirits, the alcohol beverage that emphasizes magazine advertising.

In their *JAMA* article, Garfield, et al. wrongly concluded that beer and spirits producers “targeted” adolescent readers through magazine placements. This conclusion does not withstand analysis that accounts for the collinearity that exists among the explanatory variables for numbers of readers, the lack of time variation in the covariates, and overdispersion of the residuals. All three econometric models that I estimated failed to provide evidence that support the criteria of the *Central Hudson* test.

At the urging of the Federal Trade Commission, the alcohol industry in October 2003 adopted a standard that at least 70 percent of an advertisement’s audience should consist of adults ages 21 and over. This represents an increase from the previous standard of 50 percent. The National Research Council and CAMY suggested that the industry should limit its ads to media with at least 85 percent adults in the audience, which would prohibit alcohol ads in many major magazines with large numbers of adult readers. But because the relationship between

alcohol advertising and youth readership is nonexistent, the 85 percent criterion would create costs for adults without any obvious benefits in terms of reductions in exposure of youth to images of alcohol consumption. **R**

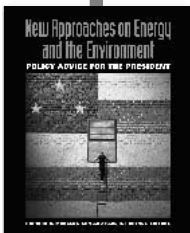
## READINGS

- “Alcohol Advertising in Magazines and Adolescent Readership,” by C. F. Garfield, P. J. Chung, and P. J. Rathouz. *Journal of the American Medical Association*, Vol. 289 (May 14, 2003).
- “Alcohol in the Media: Drinking Portrayals, Alcohol Advertising, and Alcohol Consumption among Youth,” by J. W. Grube. In *Reducing Underage Drinking: A Collective Responsibility*, edited by Richard J. Bonnie and Mary Ellen O’Connell. Washington, D.C.: National Academies Press, 2004.
- “Beer Advertising and Marketing Update: Structure, Conduct, and Social Costs,” by J. P. Nelson. *Review of Industrial Organization*, Vol. 26, No. 3 (2005).
- “Do Advertising Bans Work? An International Comparison,” by J. P. Nelson and D. J. Young. *International Journal of Advertising*, Vol. 20, No. 3 (2001).
- *Fear of Persuasion: A New Perspective on Advertising and Regulation*, by J. E. Calfee. Washington, D.C.: AEI Press, 1997.
- “Tobacco and Alcohol Advertisements in Magazines: Are Young Readers being Targeted?” by L. Sanchez, et al. *Journal of the American Medical Association*, Vol. 283 (April 26, 2000).



# RFF PRESS

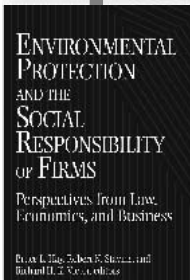
RESOURCES FOR THE FUTURE



## New Approaches on Energy and the Environment

**Policy Advice for the President**  
Richard D. Morgenstern and Paul R. Portney, editors

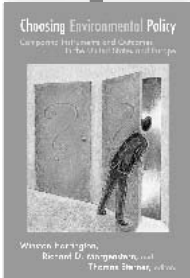
168 pages • 2004 • Cloth \$45.00 / Paper \$16.95



## Environmental Protection and the Social Responsibility of Firms

**Perspectives from Law, Economics, and Business**  
Bruce L. Hay, Robert N. Stavins, and Richard H. K. Vietor, editors

218 pages • 2005 • Cloth \$80.00 / Paper \$39.95



## Choosing Environmental Policy

Comparing Instruments and Outcomes in the United States and Europe

Winston Harrington, Richard D. Morgenstern, and Thomas Sterner, editors

210 pages • 2004 • Cloth \$70.00 / Paper \$32.95

## Scarcity and Growth Revisited

Natural Resources and the Environment in the New Millennium

R. David Simpson, Michael A. Toman, and Robert U. Ayres, editors

320 pages • 2005 • Cloth \$70.00 / Paper \$36.95



## Toward Safer Food

Perspectives on Risk and Priority Setting

Sandra A. Hoffmann and Michael R. Taylor, editors

320 pages • 2004 • Cloth \$70.00 / Paper \$32.95

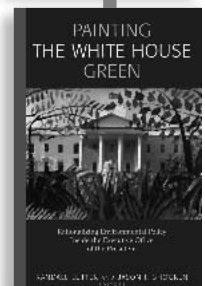


## Painting the White House Green

Rationalizing Environmental Policy Inside the Executive Office of the President

Randall Lutter and Jason E. Shogren, editors

201 pages • 2004 • Cloth \$55.00 / Paper \$25.95



Phone 800-537-5487 or 410-516-6956

Fax 410-516-6998 [www.rffpress.org](http://www.rffpress.org)