Evaluating Econometric Studies of Alcohol Advertising

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What are econometric studies?

- Generally rely on regression analysis and secondary data.
- Attempt to estimate the causal effect of a key variable on an outcome holding other variables constant.
- Are concerned with the basis for causality, distributional properties of the data and individual differences.

What is advertising?

Advertising is the use of traditional media to increase brand awareness and create positive associations with a brand with the goal of increasing its sales.

How much alcohol advertising is there in the US?

The amount of advertising is measured by the advertising to sales ratio (A/S).

The A/S for all alcoholic beverages is about 6.6% while the A/S for all industries is about 2.4%.

Alcohol is advertised about three times as much as the average advertised good.

What is needed for a plausible empirical study?

A treatment that is assigned at random to one group and not to another.

- Assignment is not dependent on the outcome of interest.
- Treatment group and control group are on average the same.

Econometric Studies

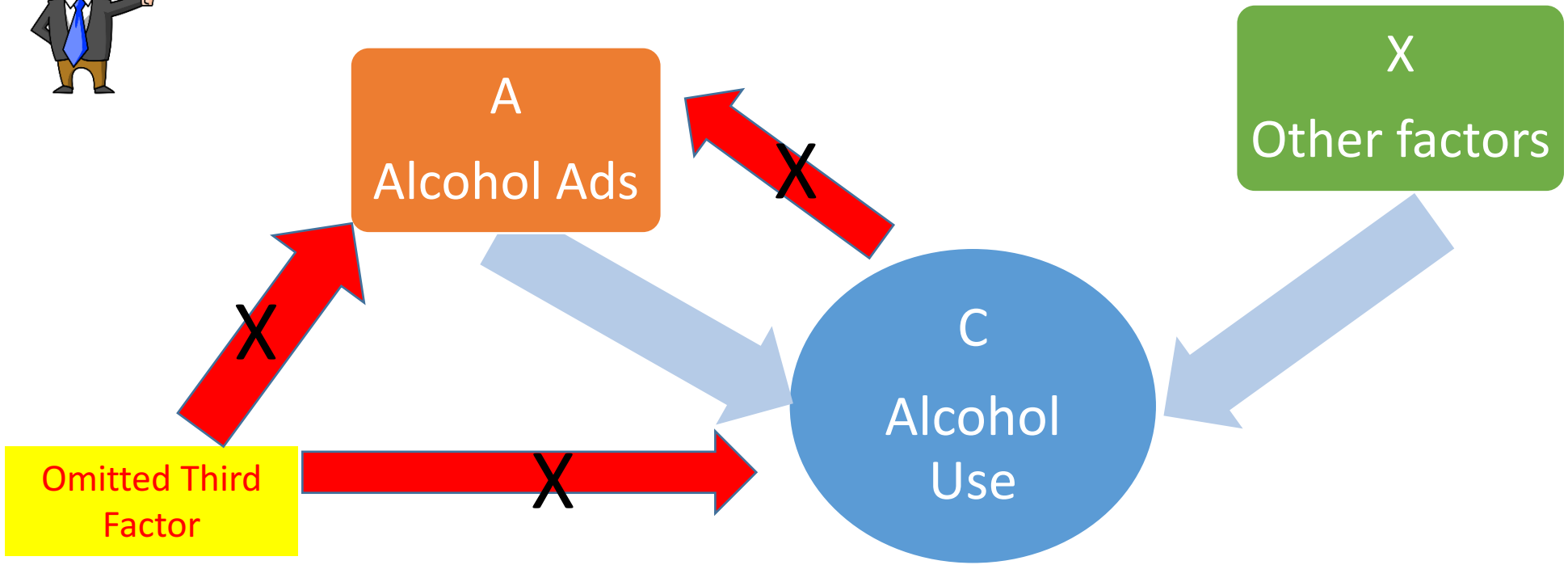
The relationship is expressed with an equation:

$$C = \beta 0 + \beta_1 A + \beta_2 X + u \quad (1)$$

- β_1 is the incremental effect of a unit increase in advertising on consumption holding the variables in X constant.
- That is, β_1 is the incremental effect within the categories defined in X

Conditions for Estimation of a Causal Effect of A on C

- There is no causality from C to A.
- There is no omitted third factor that affects C and A.
- Other factors (X) are controlled.



A is exogenous if these conditions are meet.

Approaches which may provide exogenous advertising

1)Targeting

2)Pulsing

3) Natural Experiment

1)Targeting

- Targeting is spending relatively more of the total advertising budget on desired demographic groups.
- Exogeneity is created by including demographics in X

β1 is the effect of advertising on consumption within the groups defined by X.

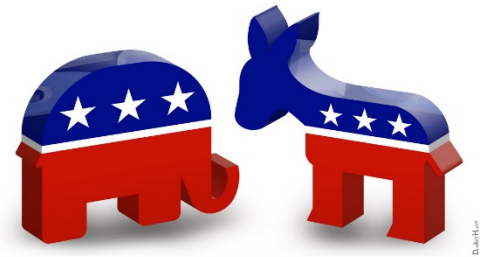
2)Pulsing

- The practice of randomly alternating between high and low levels of advertising.

- Can provide a valuable source of exogenous variation for an econometric study.

3)Natural Experiment

An empirical study in which some individuals are exposed to an event that occurs in nature or for reasons having absolutely nothing to do with the outcome of interest.



Does the existing econometric literature provide plausible results?

Organized by type of secondary data:

- Time Series -- time data only
- Ad Ban Studies -- typically international data
- Cross Sectional Studies – individual data

Time series studies have no controls for endogeneity

Grabowski	1976	US 1956-1972	No effect of advertising
Bourgeois and Barnes	1979	Canada 1951-1974	No effect of advertising
McGuinness	1980	UK 1956-1975	Small positive effect of spirits advertising
McGuinness	1983	UK 1956-1979	Small positive effect of beer advertising
Duffy	1987	UK 1963-1983	No effect of advertising
Franke and Wilcox	1987	US 1964-1984 quarterly	Small positive effect of beer and wine ads
Selvanathan	1989	UK 1955-1975	Small positive effect of beer advertising
Duffy	1991	UK1963-1985 quarterly	No effect of advertising
Lee and Trembley	1992	US 1953- 1983	No effect of advertising
Calfee and Scheraga	1994	France Germany, Netherlands Sweden	No effect of advertising
Duffy	1995	UK1963-1988 quarterly	No effect of advertising
Nelson and Moran	1995	US 1964-1990	No effect of advertising
Blake and Nied	1997	UK 1952-1991	Small positive effect of advertising
Nelson	1999	US quarterly	No effect of advertising
Duffy	2001	UK 1964-1996 quarterly	No effect of advertising
Wilcox, Kang and Chilek	2015	US 1971-2012	No effect of advertising

Ad ban studies have no controls for endogeneity

Smart and Cutler	1976	British Columbia	No effect of advertising
Ogborne and Smart	1980	Manitoba	No effect of advertising
Makowsky and Whitehead	1991	Saskatchewan	No effect of advertising
Ornstein and Hanssens	1985	US 1974-1978	Positive effect of price advertising
Saffer	1991	OECD 1970-1990	Negative effect of bans
Young	1993	OECD 1970-1990	Mixed
Miron	1999	US 1900-1995	No effect of ban during prohibition
Nelson and Young	2001	OECD 1970-1990	Positive effect of bans
Saffer and Dave	2002	OECD 1970-1995	Negative effect of bans
Nelson	2010	OECD 1975-2000	No effect of ban

Cross Sectional Studies

Pooled time series of cross sections of individuals.

- Endogeneity can be controlled with demographic variables.
- The advertising data needs to be merged to the individual records. Typically merged by local geocode which creates a measurement error problem.

Cross Sectional Studies

Goel and Morey	1995	US 1959-1982	Mixed results
Gius	1996	Brand level data	No effect of ads
Saffer	1997	US 1986-1989 quarterly	Small positive effect of ads
Saffer and Dave	2006	US 1996-1998	Small positive effect on youth consumption
Saffer Dave and Grossman	2015	US 2002-2009	Small positive effect with heavy drinkers more responsive than moderate drinkers
Molloy	2015	US 2000-2007	Small positive effect on youth consumption

Conclusion

Most past studies of alcohol advertising do not provide plausible causal results.

The most plausible econometric studies to date are the cross sectional studies, in particular, Molloy which has the best data for matching ads to individuals.

Overall these studies show a small positive effect of alcohol advertising on total alcohol consumption.