Legal Backgrounder

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KICKING THE SODA CAN: HARD TRUTHS ABOUT SOFT DRINK TAXES

by

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The movement to implement a "fat tax" can be traced all the way back to a 1994 *New York Times* Op-Ed by Yale University's Kelly Brownell. Professor Brownell has continued his advocacy for such taxes, both alone and along with now-former New York City health commissioner Thomas Frieden. Other activists, such as Center for Science in the Public Interest's (CSPI) Michael Jacobson, have over time joined their crusade. These advocates and other sin tax proponents have urged Congress to fund government health care services with a fat tax, an effort which proved unsuccessful. However, states and cities in search of new sources of revenue, and eager to be seen as "doing something" to oppose obesity, have now stepped into the fray. Twenty state and local legislatures are reportedly pursuing taxes on soft drinks.[1]

Before the nation's food police begin fantasizing about a thinner population, coupled with sizeable new streams of government revenue, a closer look at five key problems with soft drink taxes is warranted.

Scientific Evidence Lacking. The justification for a soft drinks tax is founded on the claim that such beverages are a major contributor to obesity, particularly in children. In a presentation to the Senate Finance Committee, CSPI's Jacobson claimed that "soft drinks have been a major contributor to obesity in recent decades."[2] Brownell, along with Frieden, President Obama's choice to head the Centers for Disease Control (CDC), claim that "sugar-sweetened beverages…may be the single largest driver of the obesity epidemic."[3]

This claim depends first on the assumption that there is an epidemic of childhood obesity and that obesity in childhood results in adult morbidity and premature mortality. While a full examination of these assumptions are beyond the scope of this paper, fat tax supporters should review a CDC analysis of obesity prevalence in U.S. children and adolescents for the last decade which found "no statistically significant trend... for either boys or girls" since 1999.[4] The authors have also vigorously challenged the assumptions elsewhere.[5]

The most frequently cited support for the claim that soft drinks contribute to obesity is a 2001 study by Ludwig et al. claiming that the "consumption of sugar-sweetened drinks is associated with obesity in children."[6] Yet, their study in fact fails to support such a claim. The results show no difference in the Body Mass Index (BMI) data of the children who consumed the most and the least amounts of sugar-sweetened drinks. Further, there was no statistically significant change in the incidence of obesity in the study population. Moreover, design flaws prevent the study from determining whether the changes in weight were the result of the beverages consumed or the behaviors linked with this consumption. Finally, the authors themselves concede that "there is no clear evidence that consumption of sugar per se affects food intake in a unique manner or causes obesity."

In an effort to demonstrate a link between obesity and soft drinks in their October 2009 article, Brownell and Frieden cite three clinical trials. In the first,[7] the lower incidence of obesity in the intervention group was not sustained after two years. In the other trials cited by Brownell and Frieden, there were no statistically significant

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results in terms of reduced BMIs in the total intervention group. The interventions were essentially failures.

The non-supporting evidence is even more decisive in challenging a link between soft drinks and obesity. Hill and Prentice note that: "If making a judgment solely on the basis of obesity, we conclude that there is little substantive evidence to support the view that high consumption of dietary sugars represents a public health problem…We find no reason…to associate high consumption of sugar with obesity."[8] This conclusion is confirmed by a number of studies. Data from the Dortmund Nutritional Anthropometric Longitudinally Designed Study (the DONALD Study), for instance, which follows German children from birth to adulthood, found no association between added sugar intake and body composition in childhood. The authors concluded, "the present study does not support the common view that the quality of carbohydrate may be implicated in the current obesity epidemic in childhood."[9] Indeed, an earlier study based on DONALD data concluded that "the etiology of obesity could most probably not be explained by different dietary patterns during childhood and adolescence."[10]

Another study, one that examined the nutritional and physical activity patterns of 4,298 fifth grade students, found that soft drink consumption was not associated with increased risks of becoming overweight in a statistically significant way.[11] Further, a Harvard research team led by Allison Field found that there was no statistically significant association between snack foods, with or without soft drink consumption, and BMI change for either boys or girls.[12]

Similar results were found by Forshee et al. who, using data from the National Health and Nutrition Examination Survey, found that the two drinks continually blamed for increases in overweight and obesity – non-diet soft drinks and fruit drinks – were not associated with increases in BMI for either gender.[13]

Writing early last year in the *Journal of the American Medical Association* about the alleged link between soft drinks and obesity, David Allison and Richard Mattes note that of the random controlled trials of nutritively sweetened beverage (NSB) consumption reduction, "none has shown a statistically significant effect of reducing NSB consumption on mean body weight, body mass index, or adiposity."[14]

It Won't Work. Brownell and Frieden have written that "data indicate that higher prices also reduce soft drinks consumption." However, their only support for this claim is a "review conducted by Yale University's Rudd Center for Food Policy and Obesity," for which no data or citation is provided.

Scientifically rigorous evidence suggests otherwise. For example, there are no studies demonstrating a difference either in aggregate soft drink consumption or in child and adolescent BMIs between jurisdictions with soft drinks taxes and those without such taxes. In an analysis of the effects of Maine's fat tax on obesity, Brio Oaks found no statistically significant association between the fat tax and obesity prevalence. Indeed, he notes that, "Despite the snack tax being enacted in 1991, Maine's obesity rates increased by 7.3 percentage points before the act was repealed in 2001…Since 1990, obesity rates have risen by 75% in that state…Maine…has the highest rate of adult obesity in New England."[15]

Fletcher et al., intrigued by the fact that almost two-third of all states tax soft drinks, examined the potential for such taxes to reduce adolescent obesity.[16] Using state soft drink sales tax data from 1988-2006, along with the National Health Examination and Nutrition Survey, they found that while such taxes might lead to a moderate reduction in soft drink consumption, this had no effect on adolescent obesity since the reduction was "completely offset by increases in consumption of other high calorie drinks." As they conclude: "soft drink taxes do not appear to have countered the rise in obesity prevalence because any reduction in soft drink consumption has been offset by the consumption of other calories. Cast in this light, the revenue generation and health benefits of soft drink taxes appear to be weaker than expected."

These results are confirmed in a study by Schroeter et al., ("Determining the Impact of Food Price and Income Changes on Body Weight." *Journal of Health Economics* 2008 27: 45-68) which examined the link between food prices and obesity. The authors conclude that while increasing the price of high calorie food such as soft drinks might lead to decreased demand for these foods, "it is not clear that such an outcome will actually reduce weight."

Finally, in a just-published study, Sturm et al. found that soft drink taxes "do not substantially affect overall levels of soda consumption or obesity rates."[17] In fact, they found that the most important predictors of soda consumption were increased hours of TV viewing.

The reason that such fat taxes fail is because demand for food tends to be largely insensitive to price.[18] Considerable research on food prices has demonstrated this inelasticity. A 10 percent increase in price reduces consumption by less than one percent.[19]

Kuchler et al., for example, have modeled the expected effects of a fat tax on snack items such as potato chips and other salty snacks.[20] The typical American household spends only $76 to purchase 31.8 pounds of such snacks annually. Using the price inelasticity for such foods and tax rate assumptions, expected BMI reductions from a tax on such foods would, according to Kuchler et al., be "close to zero." Even at very high rates of price elasticity and tax, BMI reductions would be only two pounds. This highlights the unresolved tension inherent in justifications of excise taxes between the claims that they reliably raise substantial revenue for worthy ends and reduce consumption of a targeted good. To the extent that they accomplish the latter they imperil the former.

Applied to soft drinks, this means that to reduce their consumption by 10 percent, the tax rate would need to be 100 percent. To reduce soft drink consumption by 50 percent, soft drinks would need to cost slightly more than $4 per can.

Of course, all of this assumes that the marketplace will not respond to such a tax in a way that defeats its purposes. Manufacturers might decide to lower the price of soft drinks, thus mitigating any affect upon consumption. Given the increased role of the state in the U.S. economy, this might lead to demands for the government to "fix" the price of soft drinks. If a tax were to somehow reduce demand for soft drinks, such a reduction could also lead to reduced prices, which in turn would lessen any impact on consumption. In short, fat taxes have not reduced consumption or obesity in those jurisdictions that have implemented them and there is no evidence to suggest that they will work at the federal level.

Perverse, Unintended Consequences. Such fat taxes have perverse, unintended consequences. Adam Drewnoksi has found that poorer consumers react to higher food prices not by changing their diets, but by consuming even fewer "healthy" foods, such as fruits and vegetables, and eating more processed foods.[21] Taxing so-called "junk foods" like soft drinks not only fails to change consumption patterns for these individuals but may even encourage them to eat more "unhealthy" foods.

A Danish study confirmed this. It found that sin taxes on junk foods would fail to reduce consumption by the population who consume these foods most frequently, that is, the poor.[22] Additionally, it found that taxes levied on sugar content – the basis for the soft drinks tax – would increase saturated fat consumption.

Economically Unfair. A soft drink excise tax is also intrinsically unfair in two senses. First, it is substantially regressive, violating the fundamental principle of tax fairness – vertical equity – in which tax obligations rise in tandem with one's ability to pay. Chouinard et al.'s model of a fat tax found a welfare loss of $24.29 for families with an income of $100,000, compared with a loss of $47.38 for families with an income of $20,000.[23]

Second such a tax is unfair in that it falls indiscriminately on the fat and the thin, the healthy and the unhealthy, those attentive to the supposed consequences of their lifestyles on their mortality and those indifferent to them. In short, its supposed justification fails in the case of the thin, the healthy, and the responsible. As the University of Chicago's Richard Epstein notes, "The person who counts calories and exercises faithfully is penalized because she chooses to eat a cream pie as part of a sound overall diet."[24]

A Threat to Individual Autonomy. Finally, there is an unpalatable odor of social engineering, or to use the preferred public health euphemism, "denormalization,"[25] about the idea of a soft drinks tax. Given that there is no compelling evidence that it will change diet or affect overweight and obesity, one can wonder whether the fat tax campaign is meant to stigmatize personal behavior. A democratic government with a fundamental commitment to respecting individual autonomy cannot justify using the tax code to shape a citizen's food choices. Soda taxes are conceptually flawed, have failed where they have been tried, and inattentive to fundamental considerations of fairness and liberty.

ENDNOTES

[1] Valerie Bauerlein and Betsy McKay, *Soda Tax Uncaps a Fight*, WALL ST. J., May 24, 2010, at A3.

[2] M. Jacobson, Senate Finance Committee testimony, May 12, 2009.

[3] K. Brownell and T. Frieden, *Ounces of Prevention – The Public Policy Case for Taxes on Sugared Beverages*, N.E. J. OF MEDICINE, Apr. 8, 2009.

[4] C. Ogden et al., *High Body Mass Index for Age Among U.S. Children and Adolescents*, 2003-2006 JAMA 2008, 299: 2401-2405.

[5] *See* P. Basham, G. Gori, and J. Luik, *Diet Nation: Exposing the Obesity Crusade*, Social Affairs Unit: London, 2006; and P. Basham and J. Luik, *Fat Kids? The Obesity Epidemic Myth*, Democracy Institute, London, 2009; P. Basham and J. Luik, *Is the Obesity Epidemic Exaggerated?*, BRITISH MEDICAL J. 2008 336: 244.

[6] D. Ludwig et al., *Relation between consumption of sugar-sweetened drinks and childhood obesity: a prospective, observational analysis*, LANCET, 2001, 357: 505-508.

[7] James et al., *Preventing childhood obesity by reducing consumption of carbonated drinks: cluster randomized control trial*, BRITISH MEDICAL J., 2004, 328: 1237

[8] J. Hill and A. Prentice, *Sugar and body weight regulation*, AM. J. OF CLINICAL NUTRITION, 1995, 62: 264-274.

[9] A. Buyken et al., *Relation of dietary glycemic index, glycemic load, added sugar intake, or fiber intake to the development of body composition between the ages 2 and 7 yrs*, AM.J. OF CLINICAL NUTRITION, 2008, 88: 755-762.

[10] U. Alexy et al., *Pattern of long-term fat intake and BMI during childhood and adolescence- results of the DONALD Study*, INT'L J. OF OBESITY, 2004, 28:1203-1209.

[11] P. Veugelers and A. Fitzgerald, *Prevalence of and risk factors for childhood overweight and obesity*, CANADIAN MEDICAL ASSOC. J., 2005, 173.

[12] A. Field et al., *Snack food intake does not predict weight change among children and adolescents*, INT'L J. OF OBESITY, 2004, 28: 1201-1216.

[13] R. Forshee et al., *The role of beverage consumption, physical activity, sedentary behaviour, and demographics on BMI of adolescents*, INT'L J. OF FOOD SCIENCES & NUTRITION, 2004, 55:463-475.

[14] D. Allison and R. Mattes, *Nutritively sweetened beverage consumption and obesity: The need for solid evidence on a fluid issue*, JAMA, 2009, 301: 318-320.

[15] B. Oaks, *An evaluation of the snack tax on the obesity rate of Maine*, Texas State University Applied Research Projects, 2005.

[16] Fletcher et al. *The Effects of Soft Drink Taxes On Child and Adolescent Consumption and Weight Outcomes*, Aug., 2009.

[17] Sturm et al. *Soda, Taxes, Soft Drink Consumption and Children's Body Mass Index*, HEALTH AFFAIRS, 2010.

[18] H. Chouinard et al., *Fat Taxes: Big Money for Small Change*, FORUM FOR HEALTH ECON. & POLICY, 2007: 10; F. Kuchler et al., *Obesity policy and the law of unintended consequences*, AMBER WAVES, U.S. Department of Agriculture Research Service, 2005, 3: 26-33.

[19] J. Seale et al., *International Evidence on Food Consumption Patterns*, Economic Research Service, US Department of Agriculture, Washington DC, 2003.

[20] F. Kuchler et al., *Taxing Snack Foods: What to expect for diet and tax revenues*, CURRENT ISSUES IN ECON. OF FOOD MARKETS, Agriculture Information Bulletin No. 747-08, USDA Economic Research Service, 2004.

[21] A. Drewnoksi and S. Spector, *Poverty and Obesity: the role of energy density and energy costs*, AM. J. OF CLINICAL NUTRITION, 2004, 79: 6-16.

[22] S. Smed et al., *Differentiated food taxes as tool in health and nutrition policy*, paper presented to the International Conference of the European Association of Agricultural Economists, 2005.

[23] H. Chouinard et al., *Fat Taxes: Big Money for Small Change*, FORUM FOR HEALTH ECON. & POLICY, 2007, 10.

[24] R. Epstein, *Let the shoemaker stick to his last perspective*, BIOLOGY &MEDICINE, 2003, 46.

[25] For a critique of obesity denormalization, *see* Patrick Basham and John Luik, *Outcasts: The Obese and Other Victims of Denormalisation*, Democracy Institute, London, 2009.

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