TaxRx: Ultra-Processed Foods, Added Sugar, and the Social Cost of Obesity

COURTNEY BALTZ*

ABSTRACT

Obesity rates continue to increase, in part, due to the overconsumption of ultra-processed foods containing high quantities of added sugar. Without federal government intervention through effective tax policies that focus on health, rather than healthcare, there will be no end to this debilitating disease. Although many tax policies have sought to curb obesity rates by taxing the added sugar in sugar-sweetened beverages, these measures have been piecemeal.

This Article argues for a federal tax to be levied on the added sugar in ultra-processed foods. This tax encompasses the ideals of a carbon tax by causing the manufacturer to bear the burden of the tax and thus reformulate their products to decrease the levels of added sugar present in ultra-processed foods. Taxing the added sugar in ultra-processed foods is not only the best solution for combating the obesity epidemic but also the most effective prescription to achieve sustained transformation in the food industry.

INTRODUCTION

Although adequate nutritional intake differs from person to person, it is consistently proven that consuming significant amounts of ultra-processed foods loaded with added sugar leads to obesity.[1] Because of the overconsumption of these foods, obesity has become the most prevalent chronic, non-communicable disease affecting both the United States and the world, even surpassing communicable diseases as the leading cause of death and disability.[2] However, by implementing appropriate taxes, the

* JD Candidate, 2021, University of Arkansas School of Law. The author would like to express her sincerest thanks to Professor Will Foster for his wisdom and encouragement throughout the process of writing this Article. Further, the author thanks Dean Margaret S. McCabe for providing guidance on the Article through the publication process. In addition, the author would like to thank Georgetown University Law Center's Student Editorial Board for their tremendous editorial work. Finally, the author is immensely grateful for all of the friends and family who consistently provided their unwavering love and support.

[1] *See generally* Sair Faruque, Janice Tong, Vuk Lacmanovic, Christiana Agbonghae, Dulce M. Minaya & Krzysztof Czaja, *The Dose Makes the Poison: Sugar and Obesity in the United States—A Review*, 69 POL. J. FOOD NUTRITION SCI. 219, 219 (2019). Obesity was first considered a disease by the World Health Organization in 1948. *Id.* The Obesity Medicine Association defines the disease as "a chronic, relapsing, multifactorial, neurobehavioral disease, wherein an increase in body fat promotes adipose tissue dysfunction and abnormal fat mass physical forces, resulting in adverse metabolic, biomechanical, and psychosocial health consequences." *Id.* It is measured by an individual's body mass index (BMI), which takes into account an individual's weight, height, gender, and age. *Id.*

[2] Katherine Pratt, *A Constructive Critique of Public Health Arguments for Antiobesity Soda Taxes and Food Taxes*, 87 TUL. L. REV. 73, 107 (2012) (explaining that "chronic diseases . . . have surpassed infectious diseases as the leading cause of morbidity and mortality in the United States"); *see also* Gregory A. Roth et al., *Global, Regional, and National Age-Sex-Specific Mortality for 282 Causes of Death in 195*

government can help ensure our nation's health is protected and improved. This Article argues that taxation is the best prescription for combating the obesity epidemic.

Obesity estimates were first reported in 1975.[3] At that time, Russia was the only country with an obese population of more than five percent.[4] By 2019, many of the world's most developed countries had obese populations of more than twenty percent.[5] In the United States specifically, all fifty states now have an obesity rate of at least twenty percent, and many states exceed forty percent.[6] In less than thirty years, the obesity rate in the United States has more than doubled, and almost tripled in some states.[7]

Obesity imposes direct and indirect costs both on the individual as well as on the overall economy. Obesity contributes to, or causes, a host of health issues, such as cardiovascular diseases, dementia, diabetes, high blood pressure, sleep apnea, anxiety, depression, liver cancer, colon cancer, hypertension, and inflammation.[8] Some of these diseases are among the leading causes of death in the United States.[9] Thus, obesity contributes to poor quality of life and, ultimately, death.

The World Health Organization (WHO) reported that poor diet is one of the main contributors to the global burden of disease and is the leading cause of death in many

---

Countries and Territories, 1980–2017: A Systematic Analysis for the Global Burden of Disease Study 2017, 392 LANCET 1736, 1736 (2018) ("At the broadest grouping of causes of death . . . non-communicable diseases (NCDs) comprised the greatest fraction of deaths, contributing to 73.4% . . . of total deaths in 2017, while communicable, maternal, neonatal, and nutritional (CMNN) causes accounted for 18.6% . . . and injuries 8.0% . . . .").

3 EMILY A. CALLAHAN, NAT'L ACADS. OF SCI., ENG'G, AND MED., CURRENT STATUS AND RESPONSE TO THE GLOBAL OBESITY PANDEMIC: PROCEEDINGS OF A WORKSHOP 8 (2019).

4 *Id.*

5 *Id.*

6 *Why Healthcare Policy Needs to Focus on Prevention with Dr. Anand Parekh*, THE DOCTOR'S FARMACY WITH MARK HYMAN, M.D. (Jan. 8, 2020), https://shows.acast.com/the-doctors-farmacy/episodes/why-healthcare-policy-needs-to-focus-on-prevention-with-dr-a [https://perma.cc/AD7Y-5U73]. Dr. Mark Hyman explained that "there is not a single state that has an obesity rate under 20 percent . . . [a]nd many more are encroaching on 40 percent." *Id.*

7 R. Alexander Bentley, Damian J. Ruck & Hillary N. Foults, *U.S. Obesity as Delayed Effect of Excess Sugar*, 36 J. ECON. & HUMAN BIOLOGY 1 (2020) ("Although the rise in U.S. obesity dates to the mid 20th century, the most substantial and rapid increase in adult obesity has occurred over the past 30 years. From 1990 to 2016 the national adult obesity rate almost doubled; in certain U.S. states (WV, MS, AK, LA, AL, KY, SC) it nearly tripled, from about an eighth of the population to more than a third.") (internal citations omitted).

8 *See, e.g.*, Tyler Rauh, *Regulating Sugar-Sweetened Beverages*, 27 U. MIAMI BUS. L. REV. 269, 272 (2019) ("Obese people are at an increased risk for high blood pressure, stroke, coronary heart disease, gallbladder disease, osteoarthritis, anxiety, depression, liver cancer, breast cancer, colon cancer, endometrial cancer, and other harmful health problems. The best predictor of type 2 diabetes is being overweight or obese."); Donald Marron, Maeve Gearing & John Iselin, *Should We Tax Unhealthy Foods and Drinks?*, TAX POLICY CENTER 4 (Dec. 2015), https://www.taxpolicycenter.org/sites/default/files/alfresco/publication-pdfs/2000553-Should-We-Tax-Unhealthy-Food-and-Drinks.pdf [https://perma.cc/KF8X-GPG5] ("Adults with obesity are more likely to suffer from diabetes, hypertension, inflammation, asthma, sleep apnea, and cardiovascular disease [and] have shorter lifespans and report lower quality of life, on average, than people of healthier weight.").

9 *Vital Signs: Adult Obesity*, CTRS. FOR DISEASE CONTROL & PREVENTION (Aug. 2010), https://www.cdc.gov/vitalsigns/adultobesity/index.html ("Obesity is a contributing cause of many other health problems, including heart disease, stroke, diabetes, and some types of cancer. These are some of the leading causes of death in the U.S.").

countries.[10] In 2010, the economic burden of health care expenditures related to obesity was approximately $147 billion.[11] In less than ten years, the annual economic burden of two of the many diseases caused by obesity (cardiovascular disease and diabetes) has escalated to $700 billion.[12] Further, an obese individual faces medical costs that are at least thirty percent greater than an individual with a healthy weight.[13] Unfortunately, the healthcare costs associated with treating this epidemic also unfairly impacts those who are not directly responsible—the healthy taxpayer bears the burden through increased health insurance costs.

Obesity has significant indirect implications on the individual and the economy. An obese individual will likely experience absenteeism and lack of productivity at work resulting in lower wages, which is compounded by increased insurance premiums.[14] Also, they are likely to face stigmatization, prejudice, and discrimination from the negative perceptions of their weight.[15] In total, this results in a loss of approximately $450 billion annually from the indirect costs of obesity.[16]

Unfortunately, the burden of obesity is predicted to increase to one in every two adults in the next ten years.[17] However, this can be prevented with appropriate tax policies. As explained below, the commercial food industry's significant influence on the nutritional value of food products is a large contributor to the obesity epidemic. Neither American eating patterns nor the products made by the food industry are aligned with the recommended *Dietary Guidelines for Americans*.[18] Although there

---

[10] Francesco Branca, Anna Lartey, Stineke Oenema, Victor Aguayo, Gunhild A. Stordalen, Ruth Richardson, Mario Arvelo & Ashkan Afshin, *Transforming the Food System to Fight Non-Communicable Diseases*, 364 BMJ 24, 26 (2019) ("Poor diet . . . is the leading cause of death and is the first or second biggest contributor to NCD disease burden in all six World Health Organization regions. Of these dietary risks, the biggest contributors to the global burden of disease in 2017 were diets that are low in whole grains, high in sodium, or low in fruits, nuts and seeds, or vegetables.").

[11] *See Vital Signs: Adult Obesity*, *supra* note 9.

[12] Dariush Mozaffarian, Kenneth S. Rogoff & David S. Ludwig, Opinion, *The Real Cost of Food: Can Taxes and Subsidies Improve Public Health?*, 321 JAMA 889, 889 (2014) ("The current economic burdens of cardiovascular disease and diabetes, 2 of many diseases predominantly caused by poor diet quality, are estimated to approach $700 billion per year.").

[13] Franco Sassi, *Taxing Sugar*, 352 BMJ 1 (Jan. 2016) ("At any time an obese person incurs at least 30% higher medical expenditures than someone of a healthy weight.").

[14] Sarah A. Roache, Charles Platkin, Lawrence O. Gostin & Cara Kaplan, *Big Food and Soda Versus Public Health: Industry Litigation Against Local Government Regulations to Promote Healthy Diets*, 45 FORDHAM URB. L. J. 1051, 1055–56 (2018) ("In addition to direct economic costs, obesity-related diseases result in significant indirect costs, including absenteeism, lack of productivity at work, increased insurance premiums, and lower wages.").

[15] Deborah L. Rhode, *Obesity and Public Policy: A Roadmap for Reform* 22 VA. J. SOC. POL'Y & L. 491, 493–94 (2015) ("Stigmatization and prejudice based on weight are common, and discrimination is widespread in employment, education, and health care.").

[16] *See* Rauh, *supra* note 8, at 272 ("Estimated indirect costs, which relate to morbidity and productivity, are $450 billion each year.").

[17] Zachary J. Ward, Sara N. Bleich, Angie L. Cradock, Jessica L. Barrett, Catherine M. Giles, Chasmine Flax, Michael W. Lon & Steven L. Gortmaker, *Projected U.S. State-Level Prevalence of Adult Obesity and Severe Obesity*, 381 NEW ENG. J. MED. 2440, 2440 (2019) ("The findings from our approach suggest with high predictive accuracy that by 2030 nearly 1 in 2 adults will have obesity [and] 1 in 4 adults is projected to have severe obesity by 2030.").

[18] ANDREA C. CARLSON, ELINA T. PAGE, THEA PALMER ZIMMERMAN, CARINA E. TORNOW & SIGURD HERMANSEN, U.S. DEPT. OF AGRIC., LINKING USDA NUTRITION DATABASES TO IRI HOUSEHOLD-BASED AND STORE-BASED SCANNER DATA 31 (Mar. 2019) ([W]e estimated . . . an HEI-2015 score of 55

are other influences on obesity including biological, behavioral, environmental, and cultural influences, lack of adequate nutrition resulting from the overconsumption of ultra-processed foods and added sugar has consistently been shown to perpetuate this rapidly expanding epidemic.[19]

An adequate nutritional food supply is essential to a healthy population and healthy economy. The aim of this Article is to provide a framework for implementing a national tax measure designed to emphasize adequate nutritional standards. Part I examines the history of taxing sugar, which has predominately emphasized sugar-sweetened beverages.

Part II argues in favor of expanding sugar taxes to encompass ultra-processed foods, a highly detrimental food group and yet the most frequently consumed. Within the ultra-processed food group, further narrowing the tax to the added sugar content would encourage product reformulation and curb obesity rates. This section examines how to design an effective tax policy by developing workable definitions for ultra-processed foods and added sugars. Although there are limitations of the proposed tax design, this section concludes by advocating for the tax to be predominately borne by the manufacturer that produces food with high added sugar content. Implementing a tax that encourages the food industry to reformulate their products would be an effective way to decrease the consumption of added sugar and subsequently impact obesity rates.

Part III then evaluates two taxing mechanisms: the tiered tax structure and the carbon tax framework. Although Hungary and the United Kingdom successfully implemented tiered tax structures, this section argues in favor of an added sugar tax similar to the carbon tax framework. After explaining the basics of a carbon tax, its strengths and weaknesses, and then applying the findings to formulating an added sugar tax, this section concludes by advocating that the revenue generated from this tax be utilized to specifically target the obesity epidemic.

I. AMERICA'S OBESITY EPIDEMIC

Despite incredible advances in healthcare technology and education, the obesity epidemic increasingly pervades American life. Coinciding with the rise in obesity rates has been increased obesity-related litigation against food manufacturers seeking to hold them accountable for the economic and public health consequences of their products, labeling, and marketing.[20] However, these efforts have fallen short of

---

[which] indicates that the foods purchased at the retail level are not in alignment with the *Dietary Guidelines for Americans*.").

[19] *See, e.g.*, Sarah A. Roache & Lawrence O. Gostin, *The Untapped Power of Soda Taxes: Incentivizing Consumers, Generating Revenue, and Altering Corporate Behavior*, 6 INT. J. HEALTH POL. MGMT. 489, 489 (2017) (explaining that "overconsumption of sugar . . . is a major contributor to the obesity epidemic"); *see also National Nutrition Research Roadmap 2016–2021: Advancing Nutritional Research to Improve and Sustain Health*, INTERAGENCY COMM. ON HUMAN NUTRITION RES. 42 (2015), https://www.nal.usda.gov/sites/default/files/fnic_uploads/2016-03-30-%20ICHNR%20NNRR%20%282%29.pdf [https://perma.cc/N6SD-SGAN] (explaining that human nutrition is influenced by a "complex ecosystem" of factors).

[20] *See, e.g.*, Pelman v. McDonald's Corp., 272 F.R.D. 82, 84–85 (S.D.N.Y. 2010). *Pelman* was the seminal lawsuit of "obesity litigation" where plaintiffs sued McDonald's, in part, for monetary relief for obesity-related health issues from eating their products. Following *Pelman*, obesity-related litigation has continued to increase. *See generally*, Theodore H. Frank, *A Taxonomy of Obesity Litigation*, 28 U. ARK. LITTLE ROCK L. REV. 427 (2006).

holding food corporations responsible and thus, place the burden more heavily on the consumer. Further, because much of the litigation occurs at the state level, comprehensive, federal measures have not yet been implemented.[21] Consequently, public health advocates have shifted towards focusing on taxation measures and policies to combat this growing disease. Federal taxation is as an effective tool that should be utilized to protect and promote the public health of the American people.[22]

Although several state and city governments have implemented tax measures that are intended to combat obesity, there is not a consensus on the type or extent of measures needed to address the problem. Despite this lack of consensus, it is clear that it is not only the volume of calories consumed, but the nutritional value of those calories that contributes to obesity.[23] Specifically, studies consistently demonstrate that the overconsumption of sugar is a major contributor to the obesity epidemic.[24] This data should shift government focus to building a tax framework that targets sugar consumption.

Sugar taxes can be justified as a form of Pigovian tax, which is a tax implemented to advance important societal objectives by influencing behavior.[25] Pigovian taxes seek to reduce the negative externalities produced from the consumption of a good or service by internalizing the cost of the behavior onto the user.[26] This theory has

---

[21] Protection of the public health has been invoked to regulate the sale of specific products at the state level. *See, e.g.*, Toy Mfrs. of Am., Inc. v. Blumenthal et al., 806 F. Supp. 336, 349 (D. Conn. 1992) (requiring toys to warn of choking hazards); Nat'l Electrical Mfrs Ass'n v. Sorrell et al., 272 F.3d 104, 116 (2d Cir. 2001) (requiring hazardous waste warnings for products contains mercury); Hadley v. Kellogg Sales Co., 324 F. Supp. 3d 1084, 1084 (N.D. Cal. 2018) (bringing suit against manufacturers of allegedly healthy breakfast cereals and cereal bars).

[22] James G. Hodge, Jr., *The Role of New Federalism and Public Health Law*, 12 J.L. & HEALTH 309, 310 (1998) ("There is perhaps no facet of governmental regulation more important to the public welfare than the maintenance of public health. The role of law is vital to the accomplishment of public health objectives. The field of public health owes its existence in large part to the role of government and the laws it enacts to control the factors which contribute to a healthier society."). Readers may disagree with what role the federal government plays in protecting the public health. The Tenth Amendment of the Constitution delegates to the states those powers that are otherwise not accounted for within the role of the federal government. U.S. Const. amend. X. Traditionally, the state's police powers have encompassed regulation of the public health. Hodge, Jr., *supra* note 22, at 318–19. However, the federal government has continued to have an "increasingly significant role" in implementing regulations on behalf of the public health. Medtronic, Inc. v. Lohr, 518 U.S. 470, 475 (1996). From Medicare and Medicaid to food and drug safety and disease prevention, the federal government regulates many areas of the public health. Hodge, Jr., *supra* note 22, at 335–37. *See also* Jonathan Cummings, *Obesity and Unhealthy Consumption: The Public Policy Case for Placing a Federal Sin Tax on Sugary Beverages,* 34 SEATTLE U. L. REV. 273, 273–74 (2010) ("Yet, while few people disagree that reduced consumption of sugary beverages is a desirable goal for American society, many people disagree about how to reduce it. Contentious debate surrounds the issue of whether the federal government should enact nationwide policies aimed at curbing sugary-beverage consumption. . . . The [New England Journal of Medicine] study recommends the implementation of a federal sin tax on sugary beverages that aims to reduce the consumption of sugary beverages, with the overall goal of reducing obesity-related health problems.").

[23] *See* Rauh, *supra* note 8, at 272 ("This indicates that the obesity epidemic may not be due to the volume of calories an average American consumes but, rather, the nutritional nature of those calories.").

[24] *See, e.g.*, Roache & Gostin, *supra* note 19, at 489 (explaining that "overconsumption of sugar . . . is a major contributor to the obesity epidemic").

[25] Rachelle Holmes Perkins, *Salience and Sin: Designing Taxes in the New Sin Era*, 2014 B.Y.U. L. REV. 143, 176–77 (2014).

[26] *Id.*

previously been utilized to justify taxes on tobacco, alcohol, and unhealthy ingredients.[27]

Sugar has been taxed since the eighteenth century.[28] The early 1900s witnessed taxes levied on foods and beverages containing added sugar.[29] Fifty years later, sales taxes on soft drinks and candy were common in the United States,[30] although the focus was not on nutritional standards but rather on raising revenue.[31] While some efforts have been made to levy additional taxes, the food and beverage industries devote substantial time, energy, and money to fighting this type of legislation.[32] However, within the last ten years, although not met without scrutiny and litigation, there has been an increased effort by American cities and other countries to impose taxes, largely targeted at sugar-sweetened beverages (SSBs), in hopes of improving the public's health.[33]

The type of tax levied on SSBs is typically in the form of a consumption tax that is imposed on goods and services consumed—that is, consumption as the tax base.[34] This type of tax ranges from general consumption taxes (e.g., value-added taxes, sales taxes) to specific consumption taxes (e.g., excise taxes).[35]

---

[27] *See id.* at 157.

[28] *See* Sassi, *supra* note 13, at 1 (explaining that "[t]he claim that sugar is an ideal candidate for taxation dates back at least to Adam Smith's work on the "wealth of nations" in the 18th century").

[29] Lauren Cedeno, *Global Implementation of Soda Taxes: Is There a Better Solution for Combatting Obesity?*, 45 BROOKLYN J. INT'L L. 329, 334 (2019) ("Taxing sugary products dates back to as early as 1922 when Norway began taxing foods and beverages containing added sugar. Later, in 1940, Finland placed a tax on soft drinks, which encompassed a variety of sugary drinks, including soda.").

[30] *See* Rhode, *supra* note 15, at 507 (stating that "[b]y the 1960s, sales taxes were widely applicable to soft drinks and candy").

[31] *See id.* ("By the 1960s, sales taxes were widely applicable to soft drinks and candy, although those taxes have been too small to affect consumption, and the revenues have not gone to health programs.").

[32] *Id.* ("However, starting in the 1990s, after intense lobbying efforts by the food and beverage industry, about a dozen jurisdictions repealed such taxes. Over the past decade, a growing number of legislative bodies have considered taxing unhealthy food and beverages, but these measures have been met with almost universal defeat, and a federal proposal to tax sugar-sweetened beverages as part of health care reform efforts was dropped in 2009.").

[33] *See, e.g.*, N.Y. Statewide Coal. of Hispanic Chambers of Commerce v. N.Y.C. Dep't of Health & Mental Hygiene, 16 N.E.3d 538, 541 (N.Y. 2014) (initiating litigation over New York's Portion Cap Rule); Williams v. City of Philadelphia, 164 A.3d 576, 579 (Pa. Commw. Ct. 2017) (challenging Philadelphia's Beverage Tax); Ill. Retail Merchs. Ass'n v. Cook Cty. Dep't of Revenue, No. 17 L 50596, 2017 WL 3318078, 1 (Ill. Cir. Ct. 2017) (challenging Cook County's Sweetened Beverage Tax Ordinance); Am. Beverage Ass'n v. City & County of San Francisco, 187 F. Supp. 3d 1123, 1126 (N.D. Cal. 2016) (challenging San Francisco's Soda Warning ordinance).

[34] *Consumption Tax*, WEST'S TAX LAW DICTIONARY § C3510; *see also* OECD, CONSUMPTION TAX TRENDS 2018: VAT/GST AND EXCISE RATES, TRENDS, AND POLICY ISSUES 17 (2018) https://read.oecd-ilibrary.org/taxation/consumption-tax-trends-2018_ctt-2018-en#page3 [https://perma.cc/X7FV-QJR2] (describing consumption taxes as "taxes on production, sale, transfer, leasing, and delivery of goods and rendering of services").

[35] *See* OECD, *supra* note 34. Consumption taxes fall into two main categories: (1) "general taxes on goods and services . . . which includes value added taxes [], sales taxes [], and other general taxes on goods and services"; and (2) "taxes on specific goods and services [] consisting primarily of excise taxes . . . ." *Consumption Tax*, WEST'S TAX LAW DICTIONARY § C3510; *see also* OECD, *supra* note 34, at 17.

Several countries have enacted SSB taxes including France, Hungary, Ireland, and the United Kingdom.[36] Their approaches have included: taxing the purchase of soda, placing limits on the amount of sugar added, regulating the size of the beverage container, and restricting beverage refills.[37] However, in the United States, there is still no comprehensive national tax to combat excess sugar consumption.[38]

By 2019, several American cities adopted SSB taxes with a focus on public health.[39] Most of the SSB taxes have followed a flat tax per unit volume, which means that sugar content is not considered.[40] For example, Berkeley, California and Philadelphia, Pennsylvania tax SSBs by the size of the container.[41] Berkeley experienced a 9.6% reduction in SSB sales, while Philadelphia experienced a 51% reduction in total volume of sales.[42] A flat tax per volume may be simple to implement; however, its effect on changing both consumer and manufacturer behavior (on either the consumption side or production) is inconsistent and thus has had little impact on the obesity epidemic.[43]

On the other hand, both Hungary and the United Kingdom have imposed tiered tax structures that focus on sugar content.[44] A tiered method spurs companies to undergo

---

[36] Finance Act 2017 (Act No. 41/2017) (Ir.), http://www.irishstatutebook.ie/eli/2017/act/41/enacted/en/pdf [https://perma.cc/2PV5-AGGJ]; TAX CODE [T. CODE] [TAX CODE] art. 1613 (Fr.); 2011 Magyar Közlöny 2011. évi CIII. törvény (Act CIII of 2011 on Public Health Product Tax) (Hung.); The Soft Drinks Industry Levy Regulations 2018, SI 2018/41 (Eng.); *see also* Roache & Gostin, *supra* note 19, at 489 ("Since the start of this decade, a growing list of countries, including Barbados, Belgium, Chile, Dominica, France, Hungary, Kiribati, Mauritius, Mexico, and Tonga have enacted public health-based taxes on sugary beverages."); *See* Cedeno, *supra* note 29, at 337 ("As of September 2019, nine European nations have enacted taxes aimed at soft drinks," including Finland, Norway, France, Belgium, and the United Kingdom.).

[37] Cedeno, *supra* note 29, at 334, 343.

[38] *See id.* at 349 ("The United States does not currently have a federal, unified approach to taxing SSBs, nor have any states implemented SSB taxes.").

[39] *Id.* ("As of October 2019, seven cities have enacted SSB taxes based on the volume of the beverage, rather than on sugar content.").

[40] Lisa M. Powell, Tatiana Andreyeva & Zeynep Isgor, *Distribution of Sugar-Sweetened Beverage Sales Volume by Sugar Content in the United States: Implications for Tiered Taxation and Tax Revenue*, J. PUB. HEALTH POL'Y, Jan. 2020, at 2 ("Beverage taxes to date have mostly used a 'flat tax' per unit volume. This means that taxed beverage products are subject to the same tax irrespective of their sugar content.").

[41] Berkeley, Cal., Municipal Code § 7.72.010; Philadelphia, Pa., Municipal Code § 160176; *see also* Cedeno, *supra* note 29, at 362 ("Mexico . . . Berkeley and Philadelphia currently . . . tax[] SSBs based on the size of the container they are packaged in. Rather than encouraging manufacturers to reduce the amount of sugar in their products, this simply incentivizes manufacturers to package their products in smaller containers to reduce tax costs.").

[42] Kristen A. Madsen, James Krieger & Xavier Morales, *Sugar-Sweetened Beverage Taxes: Emerging Evidence on a New Public Health Policy*, 321 JAMA 1777, 1777 (2019) ("There was a 51% reduction in the total volume of sales of taxed beverages in Philadelphia (a decrease of 1.261 billion oz; from 2.475 billion oz to 1.214 billion oz)" . . . [and in] Mexico, sugar-sweetened beverage sales declined by 9.7% by the end of the second year of its tax of 1 peso per liter (equivalent to a 10% price increase) . . . [while] in Berkeley, sugar-sweetened beverage sales similarly declined by 9.6% after 1 year of its tax of 1 cent per ounce.").

[43] *See* Powell et al., *supra* note 40, at 126 ("While the volume-based flat tax has the important advantage of simplicity in implementation, it does not provide incentives for consumers to switch to less calorically sweetened beverages or for the beverage industry to reformulate products to reduce sugar content per serving.").

[44] 2011 Magyar Közlöny 2011. évi CIII. törvény (Act CIII of 2011 on Public Health Product Tax) (Hung.); The Soft Drinks Industry Levy Regulations 2018, SI 2018/41 (Eng.). More recently, the Ireland

reformulation measures as demonstrated after the implementation of the tax in the United Kingdom. Initial research following the announcement of the tax demonstrated an 11% decrease in sugar content of those SSBs that would have otherwise been subject to the tax.[45] A tiered tax more effectively emphasizes reformulation because it is directly imposed on the manufacturer, which contrasts with the general trend of the consumer bearing the burden of SSB sales taxes.

Sales taxes on SSBs, as opposed to excise taxes, are not as beneficial at combatting obesity because they fail to impact consumer choice as they are not applied until the point of sale.[46] In contrast, excise taxes are imposed on the manufacturers.[47] Two options are then available: (1) the manufacturer bears the burden by either paying the tax or reformulating its product; or (2) the manufacturer passes the tax on to the consumer through a price increase seen by the consumer before purchase.[48] Finally, an excise tax is easier to enforce because of the known number of manufacturers.[49]

Overall, the focus of targeted taxes to reduce sugar consumption has primarily included: sugar-sweetened beverages; sales, volume, or content; a flat or tiered structure; and a sales tax or excise tax framework. While some countries have taken steps to implement federal tax solutions, the United States has left the national obesity problem to be solved by cities and states.

II. SHIFTING FROM SSBS TO ULTRA-PROCESSED FOOD

The effectiveness of a tax begins with determining the appropriate tax base. Although taxes designed to reduce sugar consumption through SSBs are well-intended, they have not substantially impacted obesity. Accordingly, to stimulate change, the tax base should be expanded to ultra-processed foods, as defined below.

Supreme Court sought to address the exorbitant sugar content in food products on the market in its ruling against Subway. Ireland's tax code differentiates between staple foods and discretionary indulgences. *See* Value-Added Tax Act 1972 (Act No. 22/1972) (Ir.). http://www.irishstatutebook.ie/eli/1972/act/22/enacted/en/html. A value-added tax is levied upon discretionary indulgences. *Id.* Bread would normally fall under the category of staple foods; however, Ireland's Supreme Court ruling against Subway now subjects the "bread" sold at Subway to the value-added tax because of its high sugar content. *See generally Bookfinders LTD v. Revenue Comm'rs* [2020] IESC 60 (Ir.).

45 *See* Powell et al., *supra* note 40, at 126 ("As a result of industry reformulation in reaction to the [UK Soft Drink Industry Levy] announcement, within two years, there was an 11% reduction in sugar content of drinks subject to the levy, and the caloric content of such drinks fell by 6%.").

46 Jennifer L. Pomeranz, *Taxing Food and Beverage Products: A Public Health Perspective and a New Strategy for Prevention*, 46 U. MICH. J.L. REFORM 999, 1007 (2013) ("[A] sales tax is imposed at time of payment, after most consumers have decided to make the purchase.").

47 David A. Dana & Janice Nadler, *Soda Taxes as a Legal and Social Movement*, 13 NW. J.L. SOC. POL'Y 84, 89–90 (2018) ("[E]xcise taxes are imposed on distributors and manufacturers . . . .").

48 *Id.* at 90 ("When these costs are passed on to consumers, they are included in the price consumers see on the price tag, rather than later at the cash register, making the increased price more salient, and possibly encouraging reduced consumption."); *see also* April Schweitzer, *Soda Taxes: A Missed Opportunity or An Untested Tactic*, 20 ANNALS HEALTH L. ADVANCE DIRECTIVE 112, 120 (2011) ("[R]esearch suggests that specific excise taxes levied based on particular units provide more incentive to producers to lessen the amount of sugar per unit than a sales tax.").

49 *See* Pomeranz, *supra* note 46, at 1017 ("[Excise] taxes are imposed at the point of production for efficiency of collection . . . .").

Research demonstrates that emphasizing food quality "may be effective in long-term prevention of obesity."[50]

Taxing food at the federal level is not a new phenomenon. During World War I and the Great Depression, levies were imposed on unhealthy foods to raise revenue.[51] While many of these taxes have since been repealed, the rising obesity trends have spurred many governments to reconsider taxation as a means to impact public health. Taxes on unhealthy foods encourage healthy eating, providing a solution to curb the obesity epidemic.[52] An appropriate food tax should be imposed at the national level and encompass ultra-processed foods with rates that vary in proportion to the added sugar content.

A. Ultra-Processed Foods and the Obesity Epidemic

Most people would readily acknowledge that a healthy diet positively impacts both the individual's health and the nation's health. Despite this generally accepted understanding, the Healthy Eating Index compiled by the United States Department of Agriculture (USDA) scored the nutritional quality of Americans' food purchases at 55 out of 100.[53] This purchasing pattern is dominated by ultra-processed foods that have poor nutritional value.[54]

Research and social diet trends[55] demonstrate that unprocessed, whole foods support a healthy lifestyle, whereas ultra-processed foods contribute to obesity and

---

[50] *See* Mozaffarian et al., *supra* note 12, at 889 ("Emerging evidence suggests that a primary emphasis on diet quality may be effective in long-term prevention of obesity.").

[51] *See* Rhode, *supra* note 15, at 507 ("Taxes on unhealthy food and beverages have a long and checkered history. At the federal level, such taxation began during World War I as an attempt to raise funds for the war effort and to deter consumption of luxury goods. At the state level, such taxation began during the Great Depression in an effort to replace property tax revenues.") (footnote omitted).

[52] Ignaas Devisch, *Food Taxes: A New Holy Grail?*, 1 INT'L J. HEALTH POL'Y MGMT. 95, 95 (2013) ("A 'food tax' is used in public discourse as a shorthand for a government decision to levying higher taxes [] on unhealthy foods to encourage healthy eating, but in reality a variety of food taxes exist."); *see also* Roberta F. Mann, *Controlling the Environmental Costs of Obesity*, 47 ENVTL. L. 695, 719 (2017) ("[The World Health Organization has] noted that '[f]iscal policies to improve diet—particularly taxation and subsidies—are key population-based policy interventions to reduce the consumption of calorie-dense foods and address obesity and diabetes.'").

[53] *See* Carlson et al., *supra* note 18, at 31 ("[W]e estimated . . . an HEI-2015 score of 55 . . . [which] indicates that the foods purchased at the retail level are not in alignment with the *Dietary Guidelines for Americans*.").

[54] Amelia Marti, *Ultra-Processed Foods Are Not "Real Food" but Really Affect Your Health*, NUTRIENTS, Aug. 2019, at 2–3. In evaluating the food consumption of average individuals according to the NOVA classification system, individuals "had an average energy intake of 1764 kcal/day, with 30.1% of calories coming from unprocessed or minimally processed foods, 4.2% from culinary ingredients, 8.8% from processed foods, and 56.8% from ultra-processed foods." *Id.* at 1.

[55] Kevin D. Hall, Alexis Ayuketah, Robert Brychta, Hongyi Cai, Thomas Cassimatis, Kong Y. Chen, Stephanie T. Chung, Elise Costa, Amber Courville, Valerie Darcey, Laura A. Fletcher, Ciaran G. Forde, Ahmed M. Gharib, Juen Guo, Rebecca Howard, Paule V. Joseph, Suzanne McGehee, Ronald Ouwerkerk, Klaudia Raisinger, Irene Rozga, Michael Stagliano, Mary Walter, Peter J. Walter, Shanna Yang & Megan Zhou, *Ultra-Processed Diets Cause Excess Calorie Intake and Weight Gain: An Inpatient Randomized Controlled Trial of Ad Libitum Food Intake*, 30 CELL METABOLISM 67, 67 (2019) ("The perpetual diet wars between factions promoting low-carbohydrate, keto, paleo, high-protein, low-fat, plant-based, vegan, and a seemingly endless list of other diets have led to substantial public confusion and mistrust in nutrition science. While debate rages about the relative merits and demerits of various so-called healthy diets, less attention is paid to the fact that otherwise diverse diet recommendations often share a common piece of advice: avoid ultra-processed foods.").

related diseases.[56] Although ultra-processed foods are inexpensive, they are high in harmful ingredients and have a low healthy nutrient profile.[57] The rise in obesity and related chronic diseases corresponds to the wide scale industrial processing methods that are more prominent for ultra-processed foods.[58] Consequently, tax policy designs must consider how food contributes to obesity in order to prevent and treat this epidemic and improve overall public health.[59]

B. Defining the Food to be Taxed

An effective food tax must accurately define the appropriate food to be targeted. As mentioned above, taxing ultra-processed foods is the most effective approach, therefore it is necessary to further define the foods that are included in that category.

The American food system has drastically changed over the last century. In an effort to reduce hunger and food insecurity, the food system has shifted its focus to efficiency and industrialization.[60] Policies were developed with a focus on supporting capital movement, international trade, and combining "agricultural production of cheap inputs (e.g., corn and soy)" with industrial processing (e.g., additives and flavoring).[61] These

---

[56] Linda Van Horn & Marilyn C. Cornelis, *US Dietary Guidance—Is It Working?*, 322 JAMA 1150, 1150 (2019) ("Nutrition research repeatedly and increasingly has documented evidence demonstrating that diet can favorably influence population health or adversely increase risk of disease. . . . [C]ontinued excessive intake of saturated fats, sugar, salt, and refined grains is of major concern. Eating patterns involving abundant intake of fruits, vegetables, plant-based proteins, and fiber-rich whole grains that qualitatively cannot be replaced by other foods or supplements.").

[57] Shilpi Gupta, Terry Hawk, Anju Aggarwal & Adam Drewnowski, *Characterizing Ultra-Processed Foods by Energy Density, Nutrient Density, and Cost*, FRONTIERS IN NUTRITION, May 2019, at 5–6 ("Ultra-processed foods were found to be low-cost, energy dense and nutrient poor as compared to unprocessed foods. These findings resonate with past studies suggesting ultra-processed foods as being energy-dense, high in saturated fat, added sugar, and salt and poor sources of protein, dietary fiber, and micronutrients.").

[58] *See* Branca et al., *supra* note 10, at 1 ("A focus on efficiency . . . has, however, often been at the expense of diversity and has displaced local, often healthier, diets. Access to diverse, micronutrient rich foods—such as fresh fruits, vegetables, legumes, pulses, and nuts—has not improved equally for everyone, and unhealthy foods with salt, sugars, saturated fats, and trans fats have become cheaper and more widely available. Furthermore, global demand for and supply of meat, dairy products, sugar sweetened drinks, and processed and ultra-processed foods has increased dramatically.").

[59] Although this Article does not address the recent evidence linking obesity and COVID-19 susceptibility, the author would like to note the dire importance of improving overall public health. Our government—and the American people—had to choose to protect the economy or the public's health, a choice that should not plague and divide the United States as deeply as it has. As COVID-19 continues to ravage the globe, the public has become more aware of the underlying health conditions many Americans face, specifically obesity and obesity-related diseases. Many of these underlying health conditions can be traced to America's poor health history. The American diet is ladened with ultra-processed, fatty foods. Lower socioeconomic groups and ethnic groups struggle to afford healthier options because of lack of access and the inherent racism in our food supply. Further, our healthcare system fails to promote public health through preventative measures but rather focuses on reactionary measures causing tension throughout our healthcare infrastructure. To promote a thriving and growing economy, more emphasis must be given to establishing a public health system that adequately addresses the issues facing many Americans today while simultaneously preventing more strain on the economy and in our healthcare system. One way to improve the health of the nation and solve these issues is by looking to our tax system.

[60] Branca et al., *supra* note 10, at 1 ("They are the logical consequences of, among other factors, today's food systems, which have changed dramatically in the past 50 years. A focus on efficiency has seen an increase in the availability of inexpensive, high calorie foods, often from staple cereal crops, which has reduced hunger for many.").

[61] Kevin D. Hall, *Did the Food Environment Cause the Obesity Epidemic?*, 26 OBESITY 11, 12 (2018) ("The increased food energy availability was driven by economic and policy influences to maximize

policies have enabled food manufacturers and retailers to dominate the food system.[62] Within the food industry, some refer to the colossal corporate dominance as Big Food, Big Soda, and Big Snack.[63] Notably, a significant portion of these companies' profits are gained from ultra-processed products.[64]

The mass manufacture, distribution, and sale of food continues to have a significant impact on food availability for millions of people; however, industrialized countries are now facing obesity as a result of these changes within the food system. Cheap, unhealthy, ultra-processed foods have displaced fruits and vegetables as the primary source of groceries for low-income families.[65] The convenience and class implications of ultra-processed foods make it more problematic to replace them in the food system. For socio-economic reasons and for issues arising from food deserts, eliminating ultra-processed foods entirely is not an effective or economically sound policy decision. Nonetheless, taxation of ultra-processed foods is an attainable method of influencing manufacturers to reconsider their production methods.

The NOVA system is a method utilized by nutrition experts to classify food processing levels.[66] Although some argue that it is incomplete, the Food and Agriculture Organization of the United Nations has recognized it as an effective tool and method in nutrition research.[67] Policymakers could utilize this classification system to implement a tax on ultra-processed foods.

---

agricultural production of cheap inputs (e.g., corn and soy) to an increasingly industrialized food system that produced and intensively marketed inexpensive, convenient, highly-processed 'added value' foods.").

[62] *See, e.g.*, Carlos A. Monteiro, Jean-Claude Moubarac, Geoffrey Cannon, Shu Wen Ng & Barry Popkin, *Ultra-Processed Products are Becoming Dominant in the Global Food System*, 14 OBESITY REVS. 21, 26 ("[The] national food systems have been shaped by dominant international economic policies designed to promote the flow of capital and the rapid expansion of trade.").

[63] *Id.* ("The annual turnover of some transnational manufacturing corporations, collectively sometimes known as Big Food and Big Soda, and also Big Snack, is on a level with the gross national products of middle-size countries. They spend vast sums on advertising and marketing of their branded ready-to-consume products.").

[64] David S. Ludwig & Marion Nestle, *Can the Food Industry Play a Constructive Role in the Obesity Epidemic?*, 300 JAMA 1808, 1809 (2008) ("Far greater profits come from highly processed, commodity-derived products—fast food, snack foods, and beverages—primarily composed of refined starch, concentrated sugars, and low-quality fats.").

[65] *See* Branca et al., *supra* note 10, at 1 ("A focus on efficiency . . . has, however, often been at the expense of diversity and has displaced local, often healthier, diets. Access to diverse, micronutrient rich foods—such as fresh fruits, vegetables, legumes, pulses, and nuts—has not improved equally for everyone, and unhealthy foods with salt, sugars, saturated fats, and trans fats have become cheaper and more widely available. Furthermore, global demand for and supply of meat, dairy products, sugar sweetened drinks, and processed and ultra-processed foods has increased dramatically.").

[66] Gyorgy Scrinis & Carlos Augusto Monteiro, *Ultra-Processed Foods and the Limits of Product Reformulation*, 21 PUB. HEALTH NUTRITION 247, 248 (2017) ("The NOVA system for classifying levels of processing developed by Monteiro and colleagues has become increasingly studied and adopted in public health nutrition research and policy analysis."). The reader should be aware that NOVA is not an acronym but the name of this classification method.

[67] *See* Hall et al., *supra* note 55, at 67 ("[T]he NOVA system has been criticized as being too imprecise and incomplete to form an adequate basis for making diet recommendations . . . ."); *see also* Carlos A. Monteiro, Geoffrey Cannon, Renata Levy, Jean-Claude Moubarac, Patricia Jaime, Ana Paula Martins, Daniela Canella, Maria Louzada, Diana Parra, Camila Ricardo, Giovanna Calixto, Priscila Machado, Carla Martins, Euridice Martinez, Larissa Baraldi, Josefa Garzillo & Isabela Sattamini, *The Food System: Food Classification. Public Health*, 7 WORLD NUTRITION 28, 28 (2016) [hereinafter Monteiro et al., *The Food System*] ("*NOVA* is now recognized as a valid tool for nutrition and public health research, policy and action, in reports from the Food and Agriculture Organization of the United Nations . . . .").

The NOVA system establishes four food groups according to processing levels: "minimally processed foods, processed culinary ingredients, processed foods, and ultra-processed foods."[68] Ultra-processed foods are typically made with five or more ingredients, undergoing the greatest industrial processing, and are "mostly or entirely made from processed culinary ingredients."[69] Ultra-processed foods normally have additives, such as artificial sweeteners, that appeal to desirable qualities of the human senses.[70] The NOVA system explains ultra-processed foods as those "designed to create durable, accessible, convenient, hyperpalatable, highly profitable ready-to-eat, ready-to-drink or ready-to-heat products . . . [that] have a positive association [with] obesity."[71] Ultra-processed foods encompass a range of products including: packaged snacks, candies, breads, cookies, cakes, cereal, and energy bars.[72]

The NOVA classification system would limit the administrative burden of determining which foods to tax because the definition developed for ultra-processed foods includes those substances and ingredients that are *only* found in ultra-processed foods.[73] Unprocessed or minimally processed foods make up entirely different categories and definitions which would provide an accessible line drawing mechanism.[74] Food categorization based on levels of processing provides a

---

[68] *See* Scrinis & Monteiro, *supra* note 66, at 248 ("The NOVA classification distinguishes four groups of foods according to the nature, extent and purpose of the industrial processing they undergo: minimally processed foods, processed culinary ingredients, processed foods and ultra-processed foods.").

[69] *Id.* ("The most highly processed products in the NOVA system are ultra-processed foods. NOVA defines ultra-processed foods as industrial food and drink formulations mostly or entirely made from processed culinary ingredients, such as sugar, oils and salt, and other substances derived from foods but not normally used in kitchens, such as protein isolates, modified starches and hydrogenated fats."); *see also* Monteiro et al., *The Food System*, *supra* note 67, at 33 ("[Ultra-processed foods] are industrial formulations typically with five or more and usually many ingredients. . . . Substances only found in ultra-processed products include some directly extracted from foods, such as casein, lactose, whey, and gluten, and some derived from further processing of food constituents, such as hydrogenated or unesterified oils, hydrolyzed proteins, soy protein isolate, maltodextrin, invert sugar and high fructose corn syrup.").

[70] *See* Scrinis & Monteiro, *supra* note 66, at 248 ("Also common in ultra-processed foods are additives used to imitate the sensory qualities of natural foods or to disguise undesirable qualities of the final product, such as colorants, flavorings, artificial sweeteners and emulsifiers."); *see also* Monteiro et al., *The Food System*, *supra* note 67, at 33 ("Classes of additive only found in ultra-processed products include dyes and other [colors, color stabilizers, flavors, flavor] enhancers, non-sugar sweeteners, and processing aids such as carbonating, firming, bulking and anti-bulking, de-foaming, anti-caking and glazing agents, emulsifiers, sequestrants and humectants.").

[71] *See* Scrinis & Monteiro, *supra* note 66, at 249.

[72] *See* Monteiro et al., *The Food System*, *supra* note 67, at 33 ("Examples of typical ultra-processed products are: carbonated drinks; sweet or savoury packaged snacks; ice-cream, chocolate, candies (confectionery); mass-produced packaged breads and buns; margarines and spreads; cookies (biscuits), pastries, cakes, and cake mixes; breakfast 'cereals', 'cereal' and 'energy' bars; 'energy' drinks; milk drinks, 'fruit' yoghurts and 'fruit' drinks; cocoa drinks; meat and chicken extracts and 'instant' sauces; infant formulas, follow-on milks, other baby products; 'health' and 'slimming' products such as powdered or 'fortified' meal and dish substitutes; and many ready to heat products including pre-prepared pies and pasta and pizza dishes; poultry and fish 'nuggets' and 'sticks', sausages, burgers, hot dogs, and other reconstituted meat products, and powdered and packaged 'instant' soups, noodles and desserts.").

[73] *Id.* ("Substances *only* found in ultra-processed products include . . . . Classes of additive *only* found in ultra-processed products include . . . .") (emphasis added).

[74] *See id.* at 31–32.

straightforward metric to differentiate between healthy and unhealthy foods solely on "whether an individual food is or is not ultra-processed."[75]

C. Limitations Encompassed in a Food Tax

To combat the continued rise of obesity, it is appropriate to expand taxation to include ultra-processed foods. However, there are limitations to a purely, processed product tax.

First, research suggests that food demand is relatively inelastic, meaning that changes in the price of food through taxes do not significantly affect consumer behavior.[76] To be effective, a consumer must be dissuaded from purchasing a given product, which depends on their price sensitivity.[77] But because food is essential to human life, consumer demand does not substantially fluctuate as price increases or decreases.[78] The relatively inelastic nature of food causes such a tax to have an attenuated effect on the consumer. Although evidence exists demonstrating that consumers are more likely to consider a price fluctuation in processed foods as opposed to one affecting whole foods, the necessity of food means even the former is not likely to significantly curb consumer consumption.[79] Nevertheless, even small changes in purchasing behavior through the implementation of a food tax can deter risks associated with obesity and meaningfully impact an individual's health.[80]

Second, taxing ultra-processed foods could negatively impact the food industry without a simultaneous change in the products made available to consumers. Unsurprisingly, similar to arguments made by the tobacco industry, opponents of food taxes argue that it would be unfair to the industry.[81] For food manufacturers that largely focus on ultra-processed food production, such a tax is likely to reduce their profit margins. The ingredients and processing methods utilized in the production of ultra-processed foods result in a longer shelf life and lower prices.[82] In contrast, minimally

---

[75] Mark A. Lawrence & Phillip I. Baker, *Ultra-Processed Food and Adverse Health Outcomes*, BMJ, May 2019, at 1 ("By contrast, the ultra-processed food [categorization] is underpinned by evidence derived from food exposure studies and so can be directly translated into a metric for determining harmful or healthy foods for policy actions based simply on whether an individual food is or is not ultra-processed.").

[76] *See* Lin Mei Tan & James Xun Liu, *Curbing the Consumption of Soft Drinks in New Zealand: Is Tax the Solution?*, 20 NEW ZEALAND J. TAX L. & POL'Y 203, 213 (2014) (explaining that price elasticity "refers to changes in the demand of a [product] due to changes in its price; the higher the price elasticity, the more purchase volume changes as a result of price changes").

[77] *Id.* (describing that "whether [a tax] will work depends on the sensitivity of the consumer towards prices").

[78] *Id.* ("Food is generally considered to be relatively inelastic as it is a necessity.").

[79] *See generally* Richard D. Smith, Laura Cornelsen, Diana Quirmbach, Susan A. Jebb & Theresa M. Marteau, *Are Sweet Snacks More Sensitive to Price Increases than Sugar-Sweetened Beverages: Analysis of British Food Purchase Data*, BMJ OPEN, May 2018.

[80] Oliver Mytton, Dushy Clarke & Mike Rayner, *Taxing Unhealthy Food and Drinks*, 344 BMJ 30, 32 (2012) ("However, small changes in diet can lead to meaningful changes in important risk factors across the whole population, resulting in substantial health benefits. The 1–3% reduction in incidence of ischemic heart disease predicted by several studies modelling the effect of extending value added tax (at 17.5%) to unhealthy foods in the UK equates to 900–2700 fewer deaths a year.").

[81] *Id.* ("The food industry argues that the taxes would be ineffective, unfair, and would damage the industry leading to job losses. Similar arguments were used by the tobacco industry against tobacco taxes.").

[82] *See* Ludwig & Nestle, *supra* note 64, at 1809 (comparing the lower profit margins of "minimally processed foods" to the "[f]ar greater profits [that] come from highly processed, commodity-derived

processed foods and whole foods have a short shelf life and higher prices and thus, lower profit margins for food manufacturers. However, by focusing on product reformulation, food manufacturers can pursue other avenues as workaround for this problem. Moreover, this argument fails to hold great weight against a tax policy that is intended to be imposed to promote the public health.

Next, a tax on all ultra-processed foods would also include taxes on healthier processed foods that, in reality, may have a more nutritious profile despite being lumped into the ultra-processed food category. By taxing ultra-processed foods categorically, it is difficult to structure a graduated tax that could prevent taxing healthier processed foods.[83] Although these issues are not without merit, implementing a tax with a broad base that includes all ultra-processed foods but with a slightly narrower focus on added sugar, as argued below, neutralizes many of the arguments made in opposition to such a tax.

Similarly, although not advocated as the focus of such a food tax, should policymakers emphasize raising revenues, a tax focused on only ultra-processed foods may not generate as much revenue as a tax that focuses on all unhealthy food without distinguishing between processing levels.[84] Revenue increases as the tax base broadens.[85] Thus, only focusing on ultra-processed foods could limit the amount of revenue generated. However, such a tax policy should primarily be focused on the public health. Targeting added sugar content within ultra-processed foods is the best way to do this despite the fact it will generate less revenue.

Finally, taxing ultra-processed foods is a mechanism that has regressive effects. Changes in food prices tend to more negatively impact lower socio-economic groups than higher socio-economic groups.[86] Access to nutrient-dense foods is not equally available to lower income neighborhoods compared to middle- or high-income neighborhoods,[87] and even when nutritious foods are available, they are more expensive. As mentioned above, processing methods impact the shelf life and the price of food, making ultra-processed foods more affordable.[88] Therefore, lower socio-economic groups are disproportionately affected by greater obesity levels.

Further, because lower socio-economic groups do not have the same access to or ability to afford more nutritious foods, a tax policy against consumption of ultra-

---

products—fast food, snack foods, and beverages—primarily composed of refined starch, concentrated sugars, and low-quality fats").

[83] *See* Devisch, *supra* note 52, at 96 (stating that "taxing nutrients seems to work better than taxing food items").

[84] *See* NORTON FRANCIS, DONALD MARRON & KIM RUEBEN, THE PROS AND CONS OF TAXING SWEETENED BEVERAGES BASED ON SUGAR CONTENT 22 (2016) ("The most efficient way to raise revenue from soft drinks is to levy a broad-based sales or volume tax on all sweetened beverages including zero calorie ones. However, if the primary goal is to reduce sugar content then the most efficient way is to tax drinks based on their sugar content.").

[85] *See id.* at 2 ("If policymakers are more focused on raising revenue than reducing sugar consumption, however, they may prefer broader taxes that spread the tax burden more evenly.").

[86] *See, e.g.*, DONALD MARRON, MAEVE GEARING & JOHN ISELIN, SHOULD WE TAX UNHEALTHY FOODS AND DRINKS? 2–3 (2015) (explaining that "[nutrition-focused] taxes are regressive, placing a greater relative burden on lower-income consumers than on higher-income ones").

[87] *See* Branca et al., *supra* note 10, at 2 ("Access to diverse, micronutrient rich foods—such as fresh fruits, vegetables, legumes, pulses, and nuts—has not improved equally for everyone, and unhealthy foods with salt, sugars, saturated fats, and trans fats have become cheaper and more widely available.").

[88] *See supra* notes 60–68 and accompanying text.

processed foods must account for the "time, skill, expense, and effort required to prepare meals from minimally processed foods—resources that are often in short supply for those who are not members of upper socio-economic classes."[89] Thus, equity considerations arise when implementing a tax on ultra-processed foods because lower socio-economic groups will be disproportionately impacted by a tax on cheaper, more available ultra-processed foods.

However, to effectively combat the obesity epidemic, tax measures must be drawn to encompass the groups who are most affected. Lower socio-economic groups exhibit behavior that is the most elastic so, ideally, such a tax would result in a shift away from excessively sugary foods if properly implemented. The equity concerns that will arise from the impact of such a tax predominately affecting lower socio-economic groups must be taken into consideration when developing and implementing a tax on ultra-processed foods. Policymakers should anticipate the effect it will have on lower socio-economic groups and ensure healthier foods are more available and affordable to offset the inequitable impact of such a tax. As suggested below, the revenue generated from an ultra-processed food tax can be used to reduce the regressive effects of a tax on ultra-processed foods.[90]

Ultimately, to reduce excess consumption of added sugar, a broad tax levied on ultra-processed foods is likely to have a greater impact by encompassing products containing high levels of added sugar, thereby reducing obesity rates.

D. Tie to Added Sugar and the Dietary Guidelines

An effective tax must consider the design of the tax measure.[91] As noted above, taxing ultra-processed foods raises some concerns. However, within the scope of ultra-processed foods, an effective tax can be narrowly tailored to a specific nutrient. To improve public health, research demonstrates that taxing nutrients has a better outcome than simply taxing food.[92] By maintaining a broad tax base inclusive of all ultra-processed foods but narrowing the focus of the tax to added sugar, the government can implement a tax policy that effectively addresses a large contributor to the obesity epidemic and encourage product reformulation. This section first explains the effects of added sugar on obesity. Next, it encourages a tax policy focused on added sugar content that is tied to the recommended dietary guidelines. Finally, it addresses some of its potential weaknesses.

1. Added Sugar and Its Effect on Obesity

Taxing nutrients is often advocated to target foods, such as ultra-processed foods, with little nutritional value.[93] Taxing specific nutrients, such as added sugar, is an effective tool to decrease ingredients that contribute to obesity.[94] Although *naturally*

---

[89] *See* Hall et al., *supra* note 55, at 74–75 (2019).

[90] *See infra* Part III.C. and accompanying text.

[91] *See* Devisch, *supra* note 52, at 96 (explaining that "the effectiveness [of a tax] highly depends on the design of the measure").

[92] *Id.* (stating that "taxing nutrients seems to work better than taxing food items").

[93] Caroline Franck, Sonia M. Grandi & Mark J. Eisenberg, *Taxing Junk Food to Counter Obesity*, 103 AM. J. PUB. HEALTH 1949, 1950 (2013) (explaining that "the rationale for targeting nutrients in tax policies is that some [foods] have little nutritional value and [contribute] to the prevalence of global overweight and obesity").

[94] *Id.* at 1950–51.

occurring—sugar is a nutrient found in fruits and vegetables that has some beneficial health characteristics—the rate at which Americans are consuming *added sugar* is detrimental to individual health and has been linked to the current obesity crisis.[95]

Evidence demonstrates that obesity levels are positively correlated to increases and decreases in sugar consumption.[96] Although the WHO has recognized that sugar consumption is a "major factor of the global increase of diseases like obesity and diabetes, and taxing certain products can 'reduce suffering and save lives . . . [and] cut healthcare costs and increase revenues to invest in health services,'" the United States has not taken steps to alleviate the burden of this disease through an effective tax policy.[97]

Failing to adequately address this problem is prolonging the negative effects of added sugar on American health. A person consuming a diet high in sugar faces a greater risk of health problems, including obesity, diabetes, increased cancer growth rates, increased blood glucose levels, high cholesterol, high blood pressure, hypertension, and both gut and brain inflammation.[98] Added sugar affects an individual's health as well as the public health at large and has characteristics similar to alcohol, which is heavily regulated and taxed.[99]

Ultra-processed foods typically contain added sugar, which negatively impacts the availability of healthier options and the likelihood that consumers will, or can, purchase foods with limited added sugar.[100] The average American consumes at least 120 grams of sugar per day, which is "more than people in any other country," and almost four times the recommended daily guidelines.[101] A significant portion of the

---

[95] *See* Faruque et al., *supra* note 1, at 225 (explaining that sugars can be consumed "as a naturally occurring component of many foods or as additive, *i.e.* sweeteners ae sometimes added to foods during processing or preparation for consumption"); *see also* Roache & Gostin, *supra* note 19, at 489 (explaining that the "[o]verconsumption of sugar . . . is a major contributor to the obesity epidemic").

[96] Faruque et al., *supra* note 1, at 227 ("Sugar consumption's drastic rise from the 1970's to the 1990's is followed by the subsequent exponential growth in obesity prevalence from the late 1970's to the 2000's, and, even more indicative of this association, the drop in sugar consumption from the 1990's to 2010's preceding a slowing of the annual increase in obesity prevalence in the 2000's.").

[97] Kevin A. Robinson, *Has the Government Failed to Protect Us? A Discussion of HFCS & Other Added Sugars*, 14 J. HEALTH & BIOMEDICAL L. 365, 387–89 (2018).

[98] Yussuf Ikram Mohamed, *Analysis and Intervention for Sugar Consumption in South Africa*, 3 MEDITERRANEAN J. BASIC & APPLIED SCI. 152, 153 (2019) (explaining the effects of high sugar consumption).

[99] Robert H. Lustig, Laura A. Schmidt & Claire D. Brindis, *The Toxic Truth About Sugar*, 482 NATURE 27, 28 (2012) (arguing that sugar satisfies the four criteria "accepted by the public-health community, that justify the regulation of alcohol—unavoidability (or pervasiveness throughout society), toxicity, potential for abuse and negative impact on society").

[100] *See* Branca et al., *supra* note 10, at 24 ("A focus on efficiency has seen an increase in the availability of inexpensive, high calorie foods, often from staple cereal crops, which has reduced hunger for many. This has, however, often been at the expense of diversity and has displaced local, often healthier, diets. Access to diverse, micronutrient rich foods—such as fresh fruits, vegetables, legumes, pulses, and nuts—has not improved equally for everyone, and unhealthy foods with salt, sugars, saturated fats, and trans fats have become cheaper and more widely available.").

[101] Amy Crawford, *Increasing Evidence of a Strong Connection Between Sugar and Cancer*, MED. EXPRESS (Mar. 20, 2019), https://medicalxpress.com/news/2019-03-evidence-strong-sugar-cancer.html [https://perma.cc/CRM2-FULM] ("Indeed, according to the World Health Organization, the average American consumes 126 grams of sugar a day, more than people in any other country and nearly four times what nutritionists recommend.").

American diet is filled with ultra-processed foods, which contributes to almost 90% of this added sugar intake.[102]

Therefore, the relationship between ultra-processed foods, added sugar, and obesity provides a strong argument for taxes on these products to effectively combat the obesity epidemic.[103] By linking a tax to the added sugar content in ultra-processed foods, the food industry would be incentivized to address the excessive levels of added sugar in their products.

2. Defining Added Sugar with the Dietary Guidelines

Because added sugar is prevalent in almost all ultra-processed foods, it is likely the tax base would be broad enough to impact daily food consumption. An effective tax policy focusing on added sugar must differentiate between naturally occurring sugar and additives. By looking to definitions already set by various administrative bodies such as the Food and Drug Administration (FDA) and the Centers for Disease Control and Prevention, as well as scientific and nutritional research, defining added sugar can be completed with administrative ease.

Added sugars are those that are "added to foods as an ingredient during preparation, processing, or at the table."[104] Examples of taxable added sugars would include "brown sugar, cane sugar, confectioners' sugar, granulated sugar, dextrose, white sugar, corn syrup and corn syrup solids, molasses, honey, and all types of syrups such as maple syrup, table syrups, and pancake syrup," amongst others.[105] In contrast, a taxable definition of added sugars would specifically exclude those naturally occurring sugars such as lactose or fructose.[106] Because added sugars are so prevalent in ultra-processed foods, taxing the additives could provide an opportunity to curb consumption and flatten the rise in obesity.

3. FDA: Food Labeling and the Dietary Guidelines

The final, published version of the American Dietary Guidelines recommend consuming less than 10% of total daily calories in the form of added sugar, approximately 50 grams a day of added sugar, which is a significant departure from what the nutrition and science experts on the Dietary Guidelines Advisory Committee

---

[102] Euridice Martinez Steele, Larissa Galastri Baraldi, Maria Laura da Costa Louzada, Jean-Claude Moubarac, Dariush Mozaffarian & Carlos Augusto Monteiro, *Ultra-Processed Foods and Added Sugars in the US Diet: Evidence from a Nationally Representative Cross-Sectional Study*, 6 BMJ OPEN 1, 3–5 (2016) (explaining that "nearly three in five calories (57.9%) c[o]me from ultra-processed foods" and "almost 90% of [added sugars] (89.7%) c[o]me from ultra-processed foods").

[103] *Id.* at 5 (describing a "strong linear relationship" exists between ultra-processed foods and added sugar).

[104] Shanthy A. Bowman, John C. Clemens, James E. Friday, Randy P. LaComb, Devendra Paudel & Miyuki Shimizu, *Added Sugar Intake of Americans: What We Eat in America, NHANES 2015–2016,* U.S. DEP'T AGRIC. 5 (Oct. 2019), https://www.ars.usda.gov/ARSUserFiles/80400530/pdf/DBrief/24_Sources_of_Added_Sugars_in_Adults'_Diet_2015-2016.pdf [https://perma.cc/4WKZ-CMLR]. *See also* 21 C.F.R. § 101.9(c)(6)(iii) (2018). FDA defines added sugars as "either added during the processing of foods, or are packaged as such, and include sugars (free, mono and disaccharides), sugars from syrups and honey, and sugars from concentrated fruit or vegetable juices that are in excess of what would be expected from the same volume of 100 percent fruit or vegetable juice of the same type . . . ." *Id.*

[105] Bowman et al., *supra* note 104, at 5.

[106] *Id.*

recommend.[107] To adhere to the recommended daily limit and adequately meet the nutritional standards for fruits, vegetables, protein, and other daily nutrients, there are simply not enough calories left to "consume 10 percent of calories from added sugar."[108] Yet, more than half of all adults exceed the daily added sugar maximum set by the Dietary Guidelines.[109] Those who exceed these standards often substantially do so by consuming almost four times the standard.[110] More recently, the 2020 Dietary Guidelines Advisory Committee recommended decreasing added sugar consumption to 6%, suggesting that added sugar consumption in the American diet must be addressed in order to promote a nutritionally adequate dietary patterns.[111]

In conjunction with the Dietary Guidelines, FDA recently mandated more transparent labeling of sugars on the Nutrition Facts Label.[112] The new labeling standards now require manufacturers to disclose the amount of added sugar, rather than lump naturally occurring sugars and added sugars together as "Total Sugar."[113] Although the updated nutrition label more accurately represents the levels of sugar and provides consumers information to make more informed decisions, it does little to incentivize manufacturers to produce foods that actually have less added sugar.

---

[107] U.S. DEP'T HEALTH & HUMAN SERVS. & U.S. DEP'T AGRIC., 2015–2020 DIETARY GUIDELINES FOR AMERICANS 15 (2015), https://www.dietaryguidelines.gov/sites/default/files/2019-05/2015-2020_Dietary_Guidelines.pdf [https://perma.cc/447J-8QCG]; *see also* Roache et al., *supra* note 14, at 1057 (describing how the United States Department of Agriculture and the Department of Health and Human Services "publish a report containing dietary guidelines based on the preponderance of current scientific and medical knowledge"). *See* https://www.dietaryguidelines.gov/sites/default/files/2020-07/ScientificReport_of_the_2020DietaryGuidelinesAdvisoryCommittee_first-print.pdf [https://perma.cc/4QSA-J9XP] ("After considering the scientific evidence for the potential health impacts of added sugars intake, . . . the Committee suggests that less than 6 percent of energy from added sugars is more consistent with a dietary pattern that is nutritionally adequate while avoiding excess energy intake from added sugars than is a pattern with less than 10 percent energy from added sugars."). Although the author is a proponent of utilizing the Dietary Guidelines as a standard for a workable tax policy across different federal agencies, it is crucial that the Dietary Guidelines correspond and encompass accurate nutritional and scientific research.

[108] U.S. DEP'T HEALTH & HUMAN SERVS. & U.S. DEP'T AGRIC., *supra* note 107, at 1 ("For most calorie levels, there are not enough calories available after meeting food group needs to consume 10 percent of calories from added sugars and 10 percent of calories from saturated fats and still stay within calorie limits.").

[109] *See* Bowman et al., *supra* note 104, at 1 (noting that only 47% of Americans met the recommended daily guidelines for added sugar).

[110] *Id.* (explaining that "adults who did not meet the [dietary guidelines] consumed about four times more added sugars than the adults who met the recommendation").

[111] DIETARY GUIDELINES ADVISORY COMM., SCIENTIFIC REPORT OF THE 2020 DIETARY GUIDELINES ADVISORY COMMITTEE: ADVISORY REPORT TO THE SECRETARY OF AGRICULTURE AND THE SECRETARY OF HEALTH AND HUMAN SERVICES 11 (2020), https://www.dietaryguidelines.gov/sites/default/files/2020-07/ScientificReport_of_the_2020DietaryGuidelinesAdvisoryCommittee_first-print.pdf [https://perma.cc/EY4M-LRQD].

[112] 21 C.F.R. § 101.9(c)(6)(iii) (2016); *see also* Zachary Neuhofer, Brandon R. McFadden, Alicia Rihn, Xuan Wei, Hayk Khachatryan & Lisa House, *Can the Updated Nutrition Facts Label Decrease Sugar-Sweetened Beverage Consumption*, 37 ECON. & HUMAN BIOLOGY 1, 2 (2020) ("The [Nutrition Facts Label] was initially created by The Nutrition Labeling and Education Act of 1990 and implemented in 1994 and previous research has shown that the NFL provides useful information to consumers when they compare multiple products. The compliance dates for the updated NFL are January 1, 2020 for food manufacturers with $10 million or more in annual food sales and January 1, 2021 for manufacturers with less than the $10 million threshold.") (citations omitted).

[113] 21 C.F.R. § 101.9(c)(6)(iii) (2016); *see also* Neuhofer et al., *supra* note 112, at 2 ("The sugar section now includes "Total Sugars" and a line listing the amount of "Added Sugars.").

However, policymakers can utilize the updated nutrition label to their advantage to create tax policies that target added sugar based on what is represented on the label. Arguably, without including naturally occurring sugars, the tax base might be slightly decreased.[114] Nonetheless, ultra-processed foods do not typically contain naturally occurring sugars and would likely still account for a large tax base.

Coordination with FDA to create an effective taxation scheme is hopeful. Creating a tax policy that incorporates the recommended Dietary Guidelines and the Nutrition Facts Label would encourage policymakers and agencies to work together to formulate a method that effectively combats the obesity epidemic by discouraging the production of foods with added sugar and thereby decreasing excess consumption. Beyond coordination with the Nutrition Facts Label, however, the primary responsibility of accomplishing the tax falls within the federal government's taxing powers. In accordance with the Federal Food, Drug, and Cosmetic Act (FDCA), FDA primarily regulates food according to the misbranded or adulterated standard.[115] For eighty years, FDA's regulatory tools have remained the same.[116] Therefore, it is unlikely that FDA's regulatory arm will be expanded to encompass ultra-processed foods to the extent necessary to cause a substantial reduction in added sugar consumption. Further, because sugar is generally recognized as safe, it is difficult to argue that it is adulterated and thus would fall under the current regulatory authority of FDA.[117] In light of the constraints of the FDCA, the federal legislature can utilize its taxing powers to focus on foods that are harmful but otherwise not actionable under the definitions of the FDCA.

4. Strengths and Weaknesses

The approach stated above is an effective method in designing an appropriate taxation scheme; however, it is not without its limitations. First, evidence suggests the increase in obesity is not alone attributable to added sugar and the American diet.[118] However, as previously described, the surge in obesity parallels the excess consumption and production of added sugar.[119] Although the relationship between sugar consumption and its associated health risks may be more attenuated compared

---

[114] *See* Francis et al., *supra* note 84, at 4 ("The only slight difference is that the base of a tax on added sugar would be slightly smaller because it would omit naturally occurring sugars, such as from the milk in some sweetened drinks.").

[115] 21 U.S.C. § 331 (2018); 21 U.S.C. § 342 (2005); 21 U.S.C. § 343 (2010).

[116] *See generally* 21 U.S.C. § 301 (1938); 21 U.S.C. § 402 (1938); 21 U.S.C. § 403 (1938). *Compare* 21 U.S.C. § 331 (2018), 21 U.S.C. § 342 (2005), and 21 U.S.C. § 343 (2010) with 21 U.S.C. § 301 (1938), 21 U.S.C. § 402 (1938), and 21 U.S.C. § 403 (1938). *See also 80 Years of the Federal Food, Drug, and Cosmetic Act*, U.S. FOOD & DRUG ADMIN. (July 11, 2018), https://www.fda.gov/about-fda/virtual-exhibits-fda-history/80-years-federal-food-drug-and-cosmetic-act [https://perma.cc/ZS4D-QPCT].

[117] *See generally* 21 C.F.R. § 184.1854 (2008).

[118] *See* MARRON et al., *supra* note 86, at 2 ("Taxes work best when there is a tight relationship between the 'dose' that gets taxed and the 'response' of concern. Taxes on cigarettes and carbon are well-targeted given tight links to lung cancer and climate change, respectively. The dose-response relationship for sugar, however, varies across individuals depending on their metabolisms, lifestyle, and health.").

[119] *See supra* note 92 and accompanying text.

to other areas with similar tax responses, it is critical that policymakers advocate for a tax that discourages the continued use of added sugar in the American food system.[120]

Second, although a tax targeting added sugar would ideally encourage manufacturers to decrease the added sugar in their products, it is equally true that manufacturers may substitute one harmful substance for another harmful substance.[121] Taxing added sugar based on content provides the most incentive for manufacturers to reformulate their product, but in order to limit the substitution of added sugar with similarly harmful ingredients, it is critical to incorporate a tax scheme that incentivizes manufacturers not to do so and/or penalizes them for doing so. Taxing added sugar in ultra-processed foods should encourage manufacturers to substitute harmful ingredients for more nutritious ingredients or create healthier, tax-exempt products.

Third, it is likely that some forms of ultra-processed foods with high amounts of added sugar will remain in the market despite what policymakers do to incentivize manufacturers to change their product. Rather than focusing entirely on the manufacturer, it is arguable whether policy measures should be aimed at the consumer who is responsible for their food choices.[122] However, it is almost impossible for many Americans to live a healthier lifestyle when manufacturers are producing foods loaded with added sugar, specifically lower socio-economic groups without access to more nutritious foods or the ability to afford such foods.[123]

Finally, it is likely that taxing added sugar could negatively impact those companies further up the manufacturing chain that produces sugar additives. Subsequently, food industry manufacturers may see a rise in the costs of additives should they still incorporate them in their products. Arguably, this could further incentivize manufacturers to find alternatives or reformulate their products, but some harm will likely be caused to the other relevant stakeholders in the food chain.

Despite the above-mentioned limitations, taxing added sugar content within the overall category of ultra-processed foods is an adequate measure to address the obesity epidemic. Not only does this provide exceptions for healthier products and permit a more flexible tax design, it will likely have a stronger impact on encouraging industry reformulation and altering consumer consumption patterns.

E. Manufacturers and Reformulation

Many nutritional approaches to combat obesity, tax policies included, have placed the responsibility of a healthier diet on the individual to make informed choices. It is important that individuals strive to make healthier choices, but they are not the only cause of the obesity crisis. For a culture focused on personal responsibility, previous

---

120 *See* MARRON et al., *supra* note 86, at 2 ("Taxes work best when there is a tight relationship between the 'dose' that gets taxed and the 'response' of concern. Taxes on cigarettes and carbon are well-targeted given tight links to lung cancer and climate change, respectively.").

121 *See* Scrinis & Monteiro, *supra* note 66, at 249 ("Manufacturers of ultra-processed products can be expected to replace the sources of nutrients-to-limit with ingredients that replicate their taste, texture, bulk and processing functionality, and without significantly adding to costs. This often means substituting with other refined and reconstituted processed ingredients. These substitute ingredients may themselves be of minimal nutritional value and may even be harmful in large quantities.").

122 *See* Robinson, *supra* note 97, at 402 (noting that it is the *individual* who is "recommended to limit their intake of . . . added sugars") (emphasis added).

123 *See id.* (emphasizing that "an unchecked food and beverage industry that provides a widespread amount of food goods for relatively low prices has created a culture that is hard to shake").

tax policies have failed to hold the food industry responsible for the harm they contribute to the public's health.

"Sugar is cheap, sugar tastes good, and sugar sells," which makes companies resistant to reformulate their products or provide healthier alternatives.[124] Importantly here, the food industry uses more than 75% of all sugars in the manufacturing of their products.[125] Although companies in the food industry make public promises feigning corporate responsibility, research has debunked these statements.[126] Most of these companies misrepresent their actions, causing systematic discrepancy between corporate promises and the true effects on America's health.[127]

Policymakers must hold the food industry accountable for its role in the rising obesity rates by limiting the harmful ingredients they are permitted to market to consumers. This section focuses on incentivizing food corporations to strategically reformulate their products. In addition, this section briefly discusses whether the appropriate taxation method should be voluntary or mandatory and then concludes by analyzing the limitations of a tax imposed at the manufacturing level. Despite the limitations, because the public health is essential to a vibrant economy and stable healthcare system, policymakers must shape tax policies that hold the food industry accountable for its role in American health.

1. Incentivizing Manufacturer Reformulation

Although food corporations adapt to consumer purchasing patterns, they still retain the power to shape and influence the American diet by what they advertise, produce, and sell. In order to positively influence American health, a tax policy should be formulated that encourages companies to produce healthier, more nutritious foods while also discouraging the continued production of unhealthy food.[128]

One way to accomplish this is by taxing the quantity of added sugar in ultra-processed foods. Since ultra-processed foods are loaded with added sugar and these foods provide a significant portion of profit within the food industry, this type of tax would financially incentivize companies to reduce the levels of added sugar in their products or reduce the level of ultra-processed foods in supply, which would also subsequently reduce the levels of added sugar.

The tax must be large enough to create a financial advantage to adopting reformulation measures over continuing to produce the unhealthy products.[129] By requiring the food manufacturer to pay a tax on the added sugar levels in their products,

---

[124] *See* Lustig et al., *supra* note 99, at 29 (stating that "sugar is cheap, sugar tastes good and sugar sells, so companies have little incentive to change").

[125] *See* Steele et al., *supra* note 102, at 2 (stating that "more than three quarters of the sugar and high fructose corn syrup available for human consumption in the USA were used by the food industry").

[126] *See generally* Ludwig & Nestle, *supra* note 64 (analyzing the different claims made by the food industry and whether such claims were substantiated by later action).

[127] *Id.*

[128] *See* MARRON et al., *supra* note 86, at 2 ("Taxing sugar content would be more effective. It would encourage businesses to reduce the sugar in existing drinks and to introduce new, lower-sugar alternatives, and it would encourage consumers to switch to less-sugary drinks.").

[129] *See* Rauh, *supra* note 8, at 282 (explaining that taxing sugar content "in the products [manufacturers] supply . . . [creates] a financial incentive to reformulate the[ir] [products]").

their profitability decreases.[130] Additionally, reducing the market share of ultra-processed foods would further cause profitability to decline. Together, these financial incentives would economically compel companies to reformulate or produce healthier alternatives.

Not only will a tax that focuses on reformulation provide a financial incentive to companies within the food industry, it will likely also influence their marketing tactics. The companies who quickly adopt healthier nutrition standards and production practices will be able to market their corporate responsibility and the role they are playing in combatting the obesity epidemic.[131]

For example, as demonstrated during the COVID-19 pandemic, companies donated millions of dollars or contributed their resources to fight the virus and relieve the stress and suffering of many Americans.[132] Not only did this benefit the American public, it also indirectly benefited the companies as well. Company names made headlines, and CEOs were heralded as heroes.[133] Similarly, obesity is an epidemic in which the food industry and the leaders within it can positively impact the public health and likely reap the benefits of doing so. Reducing obesity rates is a "socially desirable" goal, therefore aligning the goals of food corporations to achieve reduced rates of obesity would likely result in positive public relations.[134]

2. Examples of Reformulation

Reformulation policies are described as emphasizing the "reduc[tion] [of] quantities of a set of 'negative nutrients' . . . ."[135] Here, the focus would be on reducing the quantities of added sugar in ultra-processed foods. Research demonstrates that a

---

[130] *See* Roache & Gostin, *supra* note 19, at 490 ("Taxes, both directly, when absorbed by the manufacturer, or indirectly, when they result in decreased consumption, reduce corporate profits and incentivize product reformulation.").

[131] Scrinis & Monteiro, *supra* note 66, at 250 ("By actively promoting their own reformulation policies, or complying with government standards for reformulation, food corporations will be able to demonstrate their corporate responsibility commitments and present themselves as part of the solution to obesity and diet-related non-communicable disease.") (citations omitted).

[132] *See, e.g.*, Andrea Bonime-Blanc, *If Companies Behave Well Now They Will Build Up a Bank of Trust to Sustain Them Post-COVID-19*, A.L.I. CONTINUING LEGAL EDUC. (Reuters News & Media Ltd., London, U.K.), May 2, 2020. ("Several companies already appear to be doing their best to either preserve or augment their resilience through this crisis. Early exemplars include some of the technology companies (Apple, Salesforce, Twitter/Square via Jack Dorsey, who just announced that he would donate one third of his net worth or $1bn to Covid-19 related causes) as well as others that have been more severely hit by the crisis, like the hotel industry, where Marriott's leadership under serious duress has really stood out and will serve the company and its stakeholders well in the long run."); David Hessekiel, *Companies Taking First Steps to Support COVID-19 Response Efforts*, FORBES, Mar. 11, 2020, 2:37 PM, https://www.forbes.com/sites/davidhessekiel/2020/03/11/companies-taking-first-steps-to-support-covid-19-response-efforts/?sh=339bf79a6f8f [https://perma.cc/GX9Q-VB9E].

[133] *Id.*

[134] Peter von Philipsborn, Jan Marcel Stratil, Thomas Leonhard Heise, Rüdiger Landgraf, Hans Hauner & Eva Annette Rehfuess, *Voluntary Industry Initiatives to Promote Healthy Diets: A Case Study on a Major European Food Retailer*, 21 PUB. HEALTH NUTRITION 3469, 3469 (2018) ("From an industry perspective, a number of motives for engaging in such initiatives may exist, including: contributing to socially desirable ends; creating publicity for the brand and goodwill among stakeholders; [and] framing the public debate to align it with company goals . . . .") (citations omitted).

[135] *See* Scrinis & Monteiro, *supra* note 66, at 247 ("Product reformulation commonly refers to policies and practices aimed at reducing the quantities of a set of 'negative nutrients'—or so-called 'nutrients-to-limit'—in packaged or fast-food products: Na, free sugars, SFA, *trans*-fatty acids and total energy.").

national tax policy emphasizing reformulation would likely be effective because the food industry is saturated by mature food corporations that dominate the market.[136] This type of market minimizes the likelihood that companies will merely incorporate other harmful nutrients in place of added sugar rather than actually producing healthier alternatives.[137]

Several examples demonstrate how federal policies emphasizing reformulation can be effective. First, after the enactment of the federal menu-labeling laws requiring restaurants to display the calorie count of their products, chain restaurants developed "lower-calorie[], healthier menu alternatives."[138] Although caloric intake is not the focus of the tax policy discussed here, it is evident that federal guidelines can influence how products are manufactured.

Next, several countries have focused on product reformulation in the context of salt and trans-saturated fat.[139] The countries that have implemented salt-reduction plans have stated that doing so was "one of the simplest and most effective ways of improving public health."[140] Finally, as discussed below, by implementing a tax on the sugar content in SSBs, soft drink companies in the United Kingdom and Hungary reformulated their products to escape the tax.[141] Although the reductions were made in the context of beverages, it still provides an example of how a tax measure targeted at added sugar content can influence ingredient reformulation in ultra-processed foods.

3. Voluntary Versus Mandatory Reformulation

A tax policy targeting manufacturers must consider whether reformulation should be voluntary or mandatory. While each method has strengths and weaknesses, this Article concludes that the best enforcement strategy is to gradually roll out a national tax that incentivizes voluntary reformulation efforts. Although some argue that the food industry should self-regulate, that has proven to be wishful thinking.[142] Because the food industry has a financial stake in the production of ultra-processed foods, it is

---

[136] *See* Rogan Kersh & Brian Elbel, *Public Policy & Obesity: Overview and Update*, 5 WAKE FOREST J.L. & POL'Y 105, 122 (2015) (explaining that "reformulation held promise in higher-income countries, such as the United States, where already saturated processed-food markets could lead to substitution effects of less harmful low-nutrition reformulated foods for their higher-calorie counterparts").

[137] *Id.*

[138] *See also* Pratt, *supra* note 2, at 121–22 (describing new menu labeling law requiring chain restaurants to display the calorie count, which has prompted many restaurants to reformulate their menu items). *See generally* 21 C.F.R. § 101.11 (2016).

[139] *See generally* 21 C.F.R. §§ 101.61 (2016)–101.62 (2007); *see also* Jennifer Lacy-Nichols, Gyorgy Scrinis & Rachel Carey, *The Evolution of Coca-Cola in Australia's Soft Drink Reformulation Strategy 2003–2017: A Thematic Analysis of Corporate Documents*, FOOD POL'Y, Jan. 2020, at 1, 5 ("While public health researchers are only beginning to analy[z]e how this new phase of systematic sugar reduction is playing out in different companies, industries and countries, analysis of salt and trans fats reduction initiatives show that health campaigns and the threat of regulation played a key role in driving voluntary reformulation actions.") (citations omitted).

[140] *See* Kersh & Elbel, *supra* note 136, at 122 ("Examples drawn from multiple countries with salt-reduction programs testify that lowering sodium levels in processed foods has successfully reduced hypertension and . . . has proven to be 'one of the simplest and most effective ways of improving public health.'").

[141] *See infra* Part IV.A.

[142] *See* Robinson, *supra* note 97, at 402 (arguing that "self-regulation of added sugars has proven ineffective").

unlikely they will put forth much effort to provide healthier alternatives without federal taxation.[143]

While some mandatory policies have been created, most government reformulation polices have included "voluntary and indirect measures to encourage food corporations to reformulate their products," which includes taxation measures.[144] Mandatory reformulation policies are often too intrusive and would likely face considerable blowback from the food industry and their lobbyists, which would only stall progress.[145] Voluntary methods, emphasized through taxation measures, would provide a more efficient solution to the obesity epidemic without being excessively intrusive.

Conversely, voluntary measures often result in "slow and uneven progress" due to "inadequate targets and timelines."[146] Nonetheless, some progress is better than no progress. It is likely progress will be slow and uneven because some food corporations will not adapt as quickly while others will take great strides to both avoid higher taxes and simultaneously improve the public's health. Market influence within the food industry itself will likely spur movement amongst the industry to capture the market share for healthier alternatives. Therefore, a federal tax policy emphasizing voluntary reformulation would be the most effective choice when designing this new tax measure.

4. Limitations of a Focus on the Manufacturer

A tax policy focused on the manufacturer does have its weaknesses. First, policymakers must work with the food industry to establish targets and timelines that are reasonable for companies to achieve.[147] Although technological and economic advances in the food supply chain have greatly impacted the availability of food, these advances might also make it more difficult for manufacturers to adapt to producing minimally processed, healthier products while still maintaining profitability.[148]

---

[143] *See* Lustig et al., *supra* note 99, at 29 (stating that "sugar is cheap, sugar tastes good and sugar sells, so companies have little incentive to change").

[144] Scrinis & Monteiro, *supra* note 66, at 247 (stating that "most government policies to date have taken the form of voluntary and indirect measures to encourage food corporations to reformulate their products through the use of labelling, taxes, advertising restrictions and voluntary public-private partnerships").

[145] *See* Philipsborn et al., *supra* note 134, at 3469 ("From a public health perspective, voluntary industry initiatives may be attractive for several reasons. They may be more achievable than government measures, which can be hampered by pressure from interest groups, political gridlock and bureaucratic inertia, and may allow to achieve public health objectives quicker, more efficiently and less intrusively than governmental regulation.") (citation omitted).

[146] *See* Scrinis & Monteiro, *supra* note 66, at 247 ("Common criticisms of [voluntary and indirect measures] from public health experts relate to the voluntary and inadequate targets and timelines for reformulation that have been set, the slow and uneven progress, and the lack of accountability of food corporations.") (citations omitted).

[147] *See* Lacy-Nichols et al., *supra* note 139, at 1 ("Significant gaps exist in public health experts' expectations for product reformulation and the way in which the food industry has (re)interpreted the mandate for reformulation to suit its business interests.").

[148] *See* Scrinis & Monteiro, *supra* note 66, at 249 ("However, in the case of ultra-processed foods that are primarily constructed out of sources of nutrients-to-limit and other highly processed ingredients, the substantial reduction of nutrients-to-limit poses great technological and economic challenges for manufacturers and will not necessarily result in the production of nutritious products.").

Policymakers' expectations must align with measures the food industry can realistically incorporate, otherwise enforcement will be difficult and inefficient.

Second, rather than bearing the burden of the tax, food corporations may push the tax onto the consumer by raising individual product prices or spreading the price increase across several different product lines.[149] To prevent this from occurring, policymakers must emphasize that taxing end consumers is prohibited.[150] Although a price increase is an inevitable consequence, it would likely cause a positive shift in consumer purchasing and decision making. However, policymakers will have to continually monitor pricing methods to ensure that the tax does not cause unintended results for the consumer.[151]

Third, although the goal is to encourage reformulation, policymakers will have to follow industry reformulation practices in order to construct a taxing mechanism that is successful.[152] This will likely increase the administrative burden, but until obesity rates substantially decline, it will be necessary to reassess and modify tax rates in accompaniment with reformulation procedures and new products released into the market.

Fourth, as noted above, a tax placed on the manufacturer is likely to reduce a portion of their profitability. Because ultra-processed foods contain a significant portion of added sugar and contribute to a company's profitability, a food corporation will have to expand their product lines or create new products to remain profitable.[153] In addition, food manufacturers will undergo the added expense of reformulating their current products. With advances in technology and manufacturing, as well as the maturity of the food industry, it is likely they will overcome any lost profits. Moreover, the recent change in the corporate tax rate by the Tax Cuts and Jobs Act significantly decreased the existing tax liability of food corporations and will likely result in more flexibility with their bottom line.[154]

---

[149] *See* Pomeranz, *supra* note 46, at 1011 (stating that "there is no guarantee that manufacturers will pass through the tax on the price of sugary beverages alone rather than spreading the price increase among a wider range of their products").

[150] Meaghan Jerrett, Note, *Taxing Sugar-Sweetened Beverages to Combat the Costs of Obesity: City-Level Taxes and How the Federal Government Should Complement Them*, 73 FOOD & DRUG L.J. 465, 478 (2018) ("Legislators should also make it clear that there is no authority to collect the tax from end consumers in the event that the actor responsible for paying the tax fails to do so.").

[151] Lindsay M. Jaacks, Comment, *Taxes on Saturated Fat, Salt, and Sugar Improve the Healthiness of Grocery Purchases, but Changes are Frustratingly Small*, 4 THE LANCET PUB. HEALTH e363, e364 (2019) ("Regulation of the food industry will be required to ensure that reformulation in response to price changes does not produce unintended consequences and to achieve our shared societal goal of maximizing population health."). *See* Pomeranz, *supra* note 46, at 1011 ("The simultaneous enactment of minimum price laws with sugary beverage taxes could address these dual concerns.").

[152] Franck et al., *supra* note 93, at 1950 ("Because manufacturers regularly update and modify the production processes of certain foods, this approach would also entail a perpetual game of governmental catch-up, reevaluating and altering tax rates in an attempt to keep up with production changes.") (citation omitted).

[153] *See* Ludwig & Nestle, *supra* note 64, at 1809 ("Far greater profits come from highly processed, commodity-derived products—fast food, snack foods, and beverages—primarily composed of refined starch, concentrated sugars, and low-quality fats. These already inexpensive products are made even more inexpensive by massive agricultural subsidies.").

[154] *See* 26 U.S.C.S. § 11(b) (LexisNexis 2020). *See also* Roberta Mann, *Tax Policies for Clean Manufacturing: Implementing the Green New Deal*, 17 PITT. TAX REV. 1, 25–26 (2019) (describing how the Tax Cuts and Jobs Act cut the corporate tax rate "from thirty-five percent to twenty-one percent") (citation omitted).

Fifth, the goal behind reformulation policies is to reduce harmful ingredients (added sugar). Taxation efforts on food manufacturers are often criticized because, in reality, these corporations either do not considerably decrease the harmful ingredient or replace one harmful ingredient with another harmful ingredient.[155] An effective reformulation policy must emphasize reformulation with more nutritious, less processed ingredients.

Finally, and often most touted by the food industry, is that regulation leads to a "nanny state" and people and companies should be able to make decisions without government intervention.[156] However, when products or diseases become a detriment to the public health causing "less-than-optimal production and consumption," government intervention is warranted.[157] Various market failures are evidenced by the increase of added sugar in ultra-processed foods: (1) a lack of understanding about the health consequences of excessive added sugar; (2) consumers seek instant gratification without considering the long term effects; and (3) increased healthcare costs for the general public because consumers do not directly bear the full costs of their behavior.[158]

The federal government has intervened in other areas of the public health, including tobacco and alcohol, to implement regulations, policies, and taxes that reduce the harm contributed by these products.[159] The food industry does not effectively police itself, nor do consumers hold them accountable to make changes.[160] It is more efficient to change the manufacturer's and consumer's behavior by levying a federal tax on the manufacturer. The government "play(s) an important role in shaping the supply and demand for nutritious food."[161] Doing so is even more paramount when products cause harm to the consumer. When considering the prevalence of obesity and the connection

---

[155] Lacy-Nichols, *supra* note 139, at 1 ("Critics of corporate reformulation note that: food companies rarely reformulate existing products, but instead develop new, reformulated alternatives that rely on consumers exercising personal responsibility to purchase; food companies selectively reformulate some but not all of their products; and food companies make insignificant reductions of the 'negative' ingredient or replace it with a new ingredient that may be just as problematic or worse than the original.") (citations omitted).

[156] MARRON et al., *supra* note 86, at 5 (stating that many people oppose "expanding 'nanny state'").

[157] Kelly D. Brownell, Thomas Farley, Walter C. Willett, Barry M. Popkin, Frank J. Chaloupka, Joseph W. Thompson & David S. Ludwig, *The Public Health and Economic Benefits of Taking Sugar-Sweetened Beverages*, 361 NEW ENG. J. MED. 1599, 1601 (2009) ("Economists agree that government intervention in a market is warranted when there are 'market failures' that result in less-than-optimal production and consumption.") (citations omitted).

[158] *Id.* ("Several market failures exist with respect to sugar-sweetened beverages. First, because many persons do not fully appreciate the links between consumption of these beverages and health consequences, they make consumption decisions with imperfect information . . . . A second failure results from time-inconsistent preference . . . . Finally, financial 'externalities' exist in the market for sugar-sweetened beverages in that consumers do not bear the full costs of their consumption decisions.").

[159] *See also* Mozaffarian et al., *supra* note 12, at 889 ("Policy approaches have proven crucial for other public health priorities, such as reducing tobacco use, alcohol abuse, and deaths from motor vehicle crashes."). *See generally* U.S.C.S. § 5001 (LexisNexis 2020); U.S.C.S. § 5701 (LexisNexis 2020).

[160] *See* Ludwig & Nestle, *supra* note 64, at 1810 ("Society does not expect car companies to police themselves, nor allow them to market unsafe cars in exchange for initiatives to reduce accidental injuries from other causes.").

[161] Raphael Lencucha, Laurette Dubè, Chantal Blouin, Anselm Hennis, Mauricio Pardon & Nick Drager, *Fostering the Catalyst Role of Government in Advancing Healthy Food Environments*, 7 INT'L J. HEALTH POL'Y & MGMT. 485, 487 (2018) ("Governments can and do play an important role in shaping the supply and demand for nutritious food.").

between the disease and its cause—poor diet from ultra-processed foods containing added sugar—it is undoubtedly time for a federal tax policy that improves the public's health.

III. THE APPROPRIATE TAXING MECHANISM

Although little research has been completed to determine the appropriate added sugar taxing mechanism to implement on ultra-processed foods, other tax designs are instructive. This section first considers the tiered tax structures implemented in Hungary and the United Kingdom.[162] Then this section analyzes how, ultimately, the carbon tax structure would be the most effective choice in curbing the obesity epidemic. Finally, this section concludes by suggesting various alternatives for the revenue generated from the chosen taxing mechanism.

A. Tiered-Tax Structure—Single-Tier vs. Multi-Tier

Hungary and the United Kingdom provide successful examples of how a tiered taxing structure can encourage manufacturer-level reformulation and reduce added sugar consumption. Hungary utilizes a single-tier tax, which provides for a minimum threshold of sugar and then taxes products containing more than the set minimum.[163] Hungary's tax rate design includes an estimated two cents per liter on SSBs and pre-packaged sweets that exceed "eight grams of sugar per one hundred milliliters."[164] One of the purposes of Hungary's tax was to make the companies producing unhealthy foods bear the burden of the "public health costs created by their products."[165] Evidence demonstrates that this was in part achieved because more than half of the food manufacturers either reformulated their products or eliminated the taxable

[162] Although the United States implements taxes on alcohol and tobacco that would provide alternative methods to taxing added sugar in ultra-processed foods, the author has chosen to focus on the tiered structure in Hungary and the United Kingdom and the carbon tax for various reasons. First, taxes on alcohol and tobacco are designed to discourage consumption of those specific products. *See* Devisch, *supra* note 52, at 2. Although the aim of the tax analyzed in this paper is in part to discourage consumption of ultra-processed foods, the hope is not to discourage eating but rather emphasize overall nutritional changes both in the consumer diet as well as in the products produced by the food industry. Second, related to tobacco, taxing tobacco is not based on the content of tobacco but rather levied per pack of cigarettes or levied according to price. COMM. ON PREVENTING NICOTINE ADDICTION IN CHILDREN AND YOUTHS, INST. OF MED., GROWING UP TOBACCO FREE: PREVENTING NICOTINE ADDICTION IN CHILDREN AND YOUTHS 192 (Barbara S. Lynch & Richard J. Bonnie eds., 1994) (citations omitted). Third, although alcohol is taxed based on its content and different rates correspond with the level of alcohol in each beverage, alcoholic beverages can easily be divided into three categories—spirits, wine, and beer—whereas ultra-processed food is not that simple. *See* Francis et al., *supra* note 84, at 1; *see also* Rauh, *supra* note 8, at 282–83. Both the tiered taxing structures and the carbon tax provide alternatives that would more widely address the issues raised when developing and implementing a tax on ultra-processed foods.

[163] 2011. Magyar Közlöny 2011. évi 103. Szám [Act CIII of 2011 on Public Health Product Tax] (Hung.). *See also* Rauh, *supra* note 8, at 283 ("A single-tier system sets a threshold amount of sugar and taxes any beverage with more than that amount. Such a design was implemented in Hungary in 2011 with a threshold amount of nineteen grams per eight-ounce serving.").

[164] 2011. Magyar Közlöny 2011. évi 103. Szám [Act CIII of 2011 on Public Health Product Tax] (Hung.). *See also* Francis et al., *supra* note 84, at 7 ("Hungary taxes SSBs at the equivalent of roughly 2 cents per liter if they contain more than 8 grams of sugar per 100 milliliters, or about 19 grams per eight-ounce serving.").

[165] Mann, *supra* note 52, at 721 ("Hungary based the tax on the Pigovian principle that the producers of unhealthy foods should bear part of the burden for public health costs created by their products.").

ingredients in order to escape tax liability.[166] Hungary's tax is also successful because its base includes a wide range of products, the tax rate is linked to ingredient content, and it was imposed at the manufacturer level.[167]

The United Kingdom utilizes a multi-tier tax, which includes two threshold levels with a lower and higher rate tied to products that exceed the specified thresholds.[168] The United Kingdom's tax only focuses on SSBs and taxes beverages containing five grams or more per 100 milliliters at the lower threshold rate of twenty-two cents (in American dollars).[169] The higher threshold rate of twenty-nine cents (in American dollars) applies to products that contain more than eight grams of total sugar content.[170] Although reformulation was not mandated, policymakers ensured that reformulation was emphasized as the most desirable outcome of the tax.[171] Similar to Hungary, evidence demonstrates that this multi-tiered taxing system and its stated goals were achieved because the volume of SSBs that was initially taxable decreased by more than 50% and manufacturers took advantage of the gradual phase-in to reformulate their products.[172] As a result, products containing excess sugar decreased and, thus, overconsumption of added sugar decreased.[173]

1. Strengths and Weaknesses

Given the wide range of ultra-processed foods that contain added sugar, a tiered structure that taxes added sugar would likely accomplish reduced consumption and product reformulation. As demonstrated by both Hungary and the United Kingdom, a

---

[166] *Id.* at 721–22 ("According to a WHO report published in 2012, 40 percent of manufacturers changed their ingredients, and 12% completely eliminated unhealthy, taxed ingredients.").

[167] *Id.* at 722–23 ("The Hungarian tax model is appealing for several reasons. First, it is a broad-based tax that covers many products and is based on the content of unhealthy ingredients, such as salt and sugar . . . . Second, it is imposed at the company level, which reduces the administrative burden of collecting the tax. Third, the revenues are directed towards health care initiatives, thereby linking the tax to its objective.").

[168] The Soft Drinks Industry Levy Regulations 2018, SI 2018/41 (Eng.). *See also* Francis et al., *supra* note 84, at 19 ("This volume tax applies to drinks whose sugar content exceeds a specified level, and a higher rate applies if sugar content exceeds a second threshold.").

[169] The Soft Drinks Industry Levy Regulations 2018, SI 2018/41 (Eng.); Rauh, *supra* note 8, at 283 (explaining that "drinks with total sugar content above five grams per 100 milliliters are subject to a tax of eighteen pence (twenty-two cents) per liter") (citation omitted).

[170] The Soft Drinks Industry Levy Regulations 2018, SI 2018/41 (Eng.); Rauh, *supra* note 8, at 283 (explaining that "drinks with more than eight grams will be taxed at twenty-four pence (twenty-nine cents) per liter") (citation omitted).

[171] Roache & Gostin, *supra* note 19, at 491 ("Although the UK's policy does not mandate reformulation, the government has taken a number of steps to encourage this response. Product reformulation is clearly stated as the primary objective in the explanatory notes to the legislation enacting the levy and the government's public statements emphasize the focus of the tax on manufacturers and importers.").

[172] *See* Peter Scarborough, Vyas Adhikari, Richard A. Harrington, Ahmed Elhussein, Adam Briggs, Mike Rayher, Jean Adams, Steven Cummins, Tarra Penney & Martin White, *Impact of the Announcement and Implementation of the UK Soft Drinks Industry Levy on Sugar Content, Price, Product Size and Number of Available Soft Drinks in the UK, 2015–19: A Controlled Interrupted Time Series Analysis*, PLOS MED., Feb. 11, 2020, at 1, 3 ("The percentage of drinks with sugar over 5 g per 100 mL fell from an expected level of 49% to 15% over the time period.").

[173] *Id.* at 13 ("These results suggest that the SDIL has stimulated decreases of sugar levels of soft drinks. Reductions were because of reformulation of existing products and replacement of drinks with lower sugar varieties.").

significant portion of the manufacturers chose to reformulate or eliminate the harmful ingredients in their products to avoid an increased tax liability. Focusing on added sugar provides manufacturers a specific ingredient to target and also provides policymakers a specific ingredient to track in order to effectively curb consumption. Whether a single- or multi-tiered structure is implemented, both led to a reduction of sugar and consequently a reduction in sugar consumption.

Additionally, the graduated structure provides exceptions for certain healthier products that may fall into this category.[174] Although the tax is predominantly focused on ultra-processed foods—which would automatically exempt whole foods and minimally processed foods—should specific ultra-processed foods fall below the minimum threshold, manufacturers would not be subject to a levy on those items. While a graduated added sugar tax may seem administratively complex, not only can the United States consult with policymakers from Hungary and the United Kingdom, but federal guidelines currently exist for taxing alcoholic beverages based on their alcohol content.[175] This type of federally imposed tax would also be simplified given the recent change in the Nutrition Facts Label that requires the added sugar content to be listed.[176]

Despite the many benefits of a tiered taxing mechanism, there are several weaknesses. Given that most of the imposed levies and subsequent research have focused on SSBs, it is not clear that reformulation would be as smooth in the food industry for the manufacturer or in terms of consumer preference.[177] Additionally, developing different thresholds might prove to be more difficult because, as opposed to SSBs, food has more variability in sugar content. Thus, determining which added sugar clusters it is appropriate to tax may be more complex.

The final disadvantage is that the graduated structure could result in an increased price for the consumer.[178] Although the taxes imposed in Hungary and the United Kingdom were predominantly borne by the manufacturers, some of the tax was passed on to the consumer.[179] An analysis of the aftermath of the United Kingdom's tax strategy showed that the pass through rate was roughly 31%.[180] Policymakers will have

---

[174] Jennifer L. Pomeranz, Parke Wilde, Yue Huang, Renata Micha & Diriush Mozaffarian, *Legal and Administrative Feasibility of a Federal Junk Food and Sugar-Sweetened Beverage Tax to Improve Diet*, 108 AM. J. OF PUB. HEALTH 203, 208 (2008) ("For example, adding nutrient criteria allows for a graduated tax or exceptions for healthier choices within categories, which also promotes industry reformulations.").

[175] *Id.* ("A graduated junk food tax seems administratively feasible on the basis of identified evidence on existing federal graduated alcohol beverage taxes.").

[176] *See supra* notes 107–08 and accompanying text.

[177] Smith et al., *supra* note 79, at 8–9 ("Whether a multitiered levy based on sugar content . . . would encourage reformulation is another question since there are important differences in the ease of reformulation compared with SSBs and less is known about consumer acceptability of the reformulated snack food products.").

[178] Christian Rojas & Emily Wang, *Do Taxes for Soda and Sugary Drinks Work? Scanner Data Evidence from Berkeley and Washington State*, 59 ECON. INQUIRY 95, 95 (2021) (explaining that taxes imposed on producers "pass this tax hike downstream [and] result[s] [in a] price increase will be directly observed by consumers on the shelf price").

[179] Scarborough et al., *supra* note 172, at 16 ("Some of the SDIL was passed onto consumers as higher prices but not always on targeted drinks.").

[180] *Id.* at 2 (explaining that "drinks in the high levy category had risen by [an amount equal to] a 31% pass through rate").

to track price changes and perhaps consider penalties for increasing the price to the consumer.

B. The Carbon Tax Structure

Added sugar taxes are premised on the Pigovian principles of externalities and internalities.[181] Externalities are unintended costs imposed on third parties, whereas internalities are costs borne by the consumer or business that causes them.[182] Proponents of a carbon tax utilize this framework as a basis for arguing in favor of such a tax.[183] A carbon tax is levied on those emitting carbon so that they shoulder the cost of the harm caused by carbon emissions.[184] Proponents of a carbon tax generally agree that a carbon tax is "the most economically efficient, most administratively simple, and most effective way to reduce" carbon emissions.[185] As such, although not directly utilized in the United States, a carbon tax provides a solid framework to develop a tax on ultra-processed foods that incorporates a graduated tax feature tailored to the added sugar content.

1. Carbon Tax Basics

A carbon tax is a fee imposed on emitters of carbon that directly corresponds to the level of carbon emissions generated, that is, the carbon content.[186] When a carbon tax is imposed, carbon producers are incentivized to decrease their carbon emissions as the cost of emitting carbon increases.[187] This encourages emitters to substitute harmful fuels that produce excess carbon emissions and contribute to global warming for more earth-friendly fuels that emit less carbon.[188] Although the cost can be imposed downstream on the consumer, this Article focuses on the arguments made in favor of

---

[181] *See supra* note 23 and accompanying text.

[182] *See, e.g.*, MARRON et al., *supra* note 86, at 18 (describing the concepts of externalities and internalities).

[183] *See* Shi-Ling Hsu, *A Complete Analysis of Carbon Taxation: Considering the Revenue Side,* 65 BUFF. L. REV. 857, 866 (2017) [hereinafter Hsu, *A Complete Analysis*] ("The origins of pollution taxation date back to the early twentieth-century writings of economist Arthur Pigou. A 'Pigouvian tax' is a unitary tax levied on emitters to force them to account for the damages caused by their emissions, which are often invisible, or 'external' to the emitter.") (citation omitted).

[184] *Id.*

[185] *Id.* at 861 ("An extremely broad consensus exists among economists and climate experts that a carbon tax is the most economically efficient, most administratively simple, and most effective way to reduce emissions of carbon dioxide and other greenhouse gases.") (citation omitted).

[186] *Id.* (explaining that "the core mechanism of a carbon tax [is] the unitary levy of a fee scaling with carbon dioxide emissions"); Michael Waggoner, *Why and How to Tax Carbon*, 20 COLO. J. INT'L ENVTL. L. & POL'Y 1, 9 (2008) (explaining that a carbon tax is based "solely on [the] carbon content").

[187] Robert Sussman, *Designing the New Green Deal: Where's the Sweet Spot?*, 49 ENVTL. L. REP. NEWS & ANALYSIS 10428, 10448 (2019) ("The gold standard in climate policy for many economists and some policymakers is carbon pricing (i.e., the imposition of a tax or fee on producers and users of fossil fuels that makes it more expensive to emit GHGs and thereby incentivizes lower-emitting sources of energy and raw materials.") (citation omitted).

[188] Amy C. Christian, *Designing a Carbon Tax: The Introduction of the Carbon-Burned Tax (CBT)*, 10 UCLA J. ENVTL. L. & POL'Y 221, 232 (1992) ("By placing a disincentive on dirty fuel consumption, carbon tax should generate 'energy conservation [and prompt] the substitution of fuels that produce less carbon dioxide for [those] that produce more.'") (citation omitted).

a carbon tax levied upstream on the producer.[189] Typically, the tax is designed around the social cost of carbon (SCC), which estimates the social cost of an additional ton of emissions.[190] Thus, the tax rate corresponds to the societal damages caused by an additional unit of emissions "at any given level of emissions."[191] By incorporating the SCC into the tax, the emitter internalizes a greater portion of the costs caused by increased emissions.[192]

Similar to a tiered structure, advocates of a carbon tax generally suggest a gradual phase-in of the tax to ensure manufacturers have adequate time to adjust.[193] Further, since a carbon tax is proportional to the carbon content, "non-polluting energy sources" are excluded from the tax.[194] Finally, proponents of a carbon tax often argue in favor of a credit that can be applied against a producer's carbon tax liability should the producer incorporate methods of carbon recapture, which involves removing carbon from the atmosphere.[195]

2. Strengths and Weaknesses

A carbon tax has both benefits and detriments. First, a carbon tax can generate significant revenue. On the high end, a national carbon tax could generate more than $3 billion.[196] Notably, the U.S. Treasury has estimated that a carbon tax gradually

---

[189] Shi-Ling Hsu, *Carbon Tax Rising*, TRENDS, Mar. 2017, at 2, 2 [hereinafter Hsu, *Carbon Tax Rising*] ("Carbon taxes can be levied upstream, at the point of extraction, refining (of oil), or distribution, or downstream, at the gasoline pump or as an addition to an electricity or heating bill.").

[190] JASON BORDOFF & JOHN LARSEN, US CARBON TAX DESIGN: OPTIONS AND IMPLICATIONS 30 (Colum. Univ. Ctr. on Glob. Energy Pol'y, Sch. of Int'l & Pub. Aff. 2018), https://energypolicy.columbia.edu/sites/default/files/pictures/CGEPCarbonTaxDesignOptions118_1.pdf [https://perma.cc/ST7Q-ALFN]. ("For example, if policymakers are imposing a tax in a purely Pigouvian manner—to internalize the economic costs of GHG emissions in individual and firm decision-making—they may use the social cost of carbon (SCC) as a point of reference. The SCC is the estimate of the societal cost (measured as a reduction in welfare) of an additional ton of GHGs emitted into the atmosphere in a given year.").

[191] David A. Weisbach & Gillbert E. Metcalf, *The Design of a Carbon Tax*, 33 HARV. ENVTL. L. REV. 499, 511 (2009) ("At any given level of emissions, the tax rate should equal the social marginal damages from producing an additional unit of emissions or, more or less equivalently, the social marginal benefit from abating a unit of emissions.").

[192] Michael L. Marlow, *The Perils of a Carbon Tax*, 41 REG., Winter 2018–2019 at 28, 29 (explaining that pricing the social cost of carbon "internalizes the negative externality so that all costs are accounted for in market prices").

[193] Waggoner, *supra* note 186, at 15 ("The carbon tax should be phased in over several years, with low initial rates that slowly but substantially increase, to allow both consumers and producers to adjust gradually to the new system.").

[194] Christian, *supra* note 188, at 232 ("The tax would not impose additional costs on non-polluting energy sources such as solar or wind power. Since a carbon tax grows in proportion to the carbon content of various fuels, this form of tax should prove the most effective in reducing carbon dioxide emissions and in improving allocational efficiency. Per unit of energy produced, burning coal emits seventy-five percent more carbon dioxide than burning natural gas and twenty-two percent more than burning oil. Under a carbon tax, coal would be taxed most heavily, followed by oil and natural gas.").

[195] *See* Weisbach & Metcalf, *supra* note 191, at 538 (arguing in favor of a credit that "could be applied against carbon tax liability"); *see also* Waggoner, *supra* note 186, at 12 ("Another important aspect of carbon taxation would be the extent to which credits should be allowed for carbon capture—i.e., for activities that remove CO_2 from the atmosphere.").

[196] *See* Hsu, *A Complete Analysis*, *supra* note 183, at 870 (stating that Sweden's carbon tax generated $3.7 billion in 2013).

increased over ten years could produce upwards of $2 trillion.[197] Second, a carbon tax effectively combats rising emissions while simultaneously providing a stable pricing method for producers.[198] Because the tax corresponds proportionally to level of carbon content, a producer's tax liability increases and decreases as carbon emissions fluctuate, which incentivizes them to emit less carbon.[199]

Third, implementing a carbon tax would be fairly simple. Not only is tracking fossil fuels fairly routine, but there are also only a few carbon producers that would need to be identified in order to collect the tax.[200] Finally, a carbon tax has significant health benefits for the public at large by reducing diseases aggravated or related to increased pollution.[201] Importantly, a carbon tax requires the producer of the carbon to internalize the external social health costs caused by their emissions.[202]

There are two primary detriments of a carbon tax. Arguably, the most difficult part of designing an effective carbon tax is calculating the external cost of each ton of emissions.[203] Although the SCC provides a "conceptual frame[work] for pricing carbon," it imposes challenges in practice to determine an adequate basis upon which to design a carbon tax.[204] The assumptions on which to calculate the cost vary as much as the estimates of the actual cost.[205] Notably, even the range of cost noted in various articles differs. One article described the range from being $14 to $138 per metric ton, while another article provided a range of $8 to $40 per metric ton.[206] Ultimately, the

---

[197] Marlow, *supra* note 192, at 30 ("The U.S. Treasury estimated that a carbon tax that started at $49 per metric ton of carbon dioxide equivalent in 2019 and gradually increased until it reached $70 in 2028 would generate net revenues of $194 billion in the first year of the tax and $2.2 trillion over the 10-year period.").

[198] *See* BORDOFF & LARSEN, *supra* note 190 ("In selecting a carbon tax over a cap-and-trade program, policymakers are trading emissions certainty for price certainty.").

[199] *See* Hsu, *Carbon Tax Rising*, *supra* note 189, at 2 ("Moreover, a carbon tax scales proportionately with the amount of emissions, so that it takes account of the different contributions that different fossil fuels make to climate change.").

[200] *Id.* ("Carbon taxes can be applied very broadly and simply, as the tracking and taxation of fossil fuels is already quite routine.").

[201] *Id.* ("As a side benefit, reducing emissions from coal extraction, transport, and combustion would also generate a number of health benefits unrelated to climate change, such as a reduction in respiratory diseases and deaths from cardio-pulmonary diseases.").

[202] *Id.* (explaining that a carbon tax "best internalizes [climate and health] costs to the emitter").

[203] *E.g.*, CTR. FOR CLIMATE & ENERGY SOLS., OPTIONS AND CONSIDERATIONS FOR A FEDERAL CARBON TAX 6 (2013), https://www.c2es.org/site/assets/uploads/2013/02/options-considerations-federal-carbon-tax.pdf [https://perma.cc/7B7Q-LH85] (explaining that "estimates [of the social cost of carbon] are highly uncertain").

[204] DONALD MARRON, ERIC TODER & LYDIA AUSTIN, TAXING CARBON: WHAT, WHY, AND HOW 4 (Tax Pol'y Ctr., Urb. Inst. & Brookings Inst. 2015), http://www.taxpolicycenter.org/sites/default/files/alfresco/publication-pdfs/2000274-Taxing-Carbon-What-Why-and-How.pdf [https://perma.cc/24TU-HRAK] ("This social-cost-of-carbon approach provides a helpful conceptual framing for pricing carbon but several practical challenges arise.").

[205] *See, e.g.*, CTR. FOR CLIMATE & ENERGY SOLS., *supra* note 203, at 6 ("There are many estimates of the social cost of carbon and they vary widely.").

[206] *Compare* Marlow, *supra* note 192, at 29 (stating that the "EPA offers a range of SCC estimates from $14 to $138 per metric ton"), *with* Kimberly Amadeo, *Carbon Tax, Its Purpose, and How It Works*, THE BALANCE, https://www.thebalance.com/carbon-tax-definition-how-it-works-4158043 [https://perma.cc/R8C4-9D9R] (last updated Oct. 27, 2020) (explaining how one report "developed an estimate of $40 per metric ton" while the average carbon price globally is $8 per ton").

lack of consensus on the correct cost of carbon has resulted in a lack of support for a carbon tax and an unclear foundation for developing a tax structure to adequately reduce emissions.[207]

Second, many opponents of a carbon tax argue that such a tax provides stability in pricing at the expense of actual emissions reductions.[208] Because there is no minimum or maximum on emissions, producers are not obligated to actually achieve a reduced, specified emissions standard.[209] Thus, decreased emissions targets and goals are irrelevant. Finally, support for carbon taxes is lacking because the effects of a carbon tax are not directly "seen." The benefits of implementing a carbon tax are not likely to occur in the short term and may not even occur at all.[210]

3. Carbon Tax to Added Sugar Tax—The Social Cost of Obesity

Despite the inadequacies of a carbon tax, it provides the best framework for developing an added sugar tax to combat the rise of obesity in our country. Under Pigovian principles, an added sugar tax would be levied on manufacturers of ultra-processed foods containing excess amounts of added sugar, thereby requiring manufacturers to bear the burden of the harm caused by their products. An added sugar tax would operate as a fee imposed on manufacturers that directly corresponds to the levels of added sugar in their products, that is, the added sugar content. By imposing an added sugar tax, manufacturers would be incentivized to decrease the levels of added sugar because it would be more expensive to incorporate added sugar into their products. The tax would encourage manufacturers to reformulate their products or substitute more nutritious ingredients to reduce overall levels of added sugar consumption, thereby curbing rising obesity rates. Although such a tax could be imposed on the consumer in the sticker price at the grocery store, this Article advocates for the entirety of the tax to be levied upon the manufacturer.

Similar to the SCC for a carbon tax, the social cost of obesity (SCO) would be utilized to estimate the social cost of obesity from added sugar. Thus, the tax rate would correspond to the societal harms caused by the use of added sugars in the production process. By incorporating the SCO, the manufacturer internalizes a greater portion of the costs caused by overconsumption of harmful ingredients. Tax rates could be gradually phased-in to provide ample time for manufacturers to reformulate or eliminate the harmful ingredients to reduce their tax liability. Further, because an added sugar tax would be proportional to the added sugar content, ultra-processed foods that contain little to no added sugar would be exempt.

4. Strengths and Weaknesses

An added sugar tax that mirrors the form of a carbon tax has benefits like those offered by a carbon tax. First, although the predominant purpose of an added sugar tax on ultra-processed foods is to combat obesity, it has the potential to raise significant

---

[207] *See* Marlow, *supra* note 192, at 29 (stating that "garnering support for 'correct' carbon taxes [is] difficult").

[208] BORDOFF & LARSEN, *supra* note 190, at 30 ("In selecting a carbon tax over a cap-and-trade program, policymakers are trading emissions certainty for price certainty.").

[209] *See id.* (arguing that this limitation can be mitigated with a "system that has a minimum and maximum allowance price").

[210] Marlow, *supra* note 192, at 29 (stating that "the benefits [of a carbon tax] are uncertain, [and] they may take decades to emerge").

revenue if imposed at high levels. Second, because an added sugar tax would correspond proportionally to the level of added sugar content, a manufacturer's tax liability would increase and decrease in proportion to the levels of added sugar present in their ultra-processed goods, thus incentivizing them to use less added sugar.

Third, implementing an added sugar tax would be simple because there are only a few food manufacturers that would need to be identified to collect the tax. Although differentiating between domestic and imported products could be difficult, added sugar would not be taxed throughout the food chain but only taxable to the company that produces the final product to market.[211] Further, such a tax would be administratively feasible because a similar framework already exists in a carbon tax. Finally, an added sugar tax has significant health benefits because it would reduce the overconsumption of sugar that pervades the American diet and leads to obesity. Importantly, an added sugar tax requires the manufacturer to internalize the external social health costs caused by the harmful ingredients placed in their products.

The detriments associated with an added sugar tax are also similar to that of a carbon tax; however, these shortcomings could likely be resolved. First, determining the social cost of obesity is likely a good conceptual framework but one that is challenging in practice. Taxes are deemed to be "most effective as a policy instrument when there is a tight relationship between the product . . . that gets taxed and the negative [it] cause[s]."[212] This tight relationship is demonstrated by both carbon emissions and cigarettes and their respective harms.[213] Although the dose of added sugar may be difficult to directly link to obesity,[214] it is likely that an accurate SCO can be deciphered from the tangible data that exists from extensive healthcare and nutritional studies.

Deciding which dataset to use is another story; however, most studies agree that there is some level of direct and indirect costs associated with obesity in part due to inadequate nutrition.[215] Notably, a recent study completed a systematic review of all the literature relevant to cost of obesity studies and concluded that the consensus found "obesity is responsible for a large fraction of costs, not only to the health care system

---

211 Sirpa Sarlio-Lähteenkorva & Jack Winkler, *Could a Sugar Tax Help Combat Obesity?*, 351 BRITISH MED. J., July 29, 2015, at 1, 1 ("Tax on added sugar could be administered easily for domestic products but it would be complicated for imported ones.").

212 MARRON ET AL., *supra* note 86, at 14 ("Taxes are most effective as a policy instrument when there is a tight relationship between the product or activity that gets taxed and the negative effect they cause.").

213 *Id.* ("Taxing the carbon dioxide emissions that drive climate change is perhaps the best example. Carbon dioxide emissions have the same effect on the climate whether they come from a gasoline-fueled automobile in California or a coal-fired power plant in Florida. That tight linkage makes carbon taxes especially promising for combatting climate change. The same is roughly true for cigarette taxes.") (citations omitted).

214 *Id.* ("Dose-response relationships for nutrition, however, are typically less tight. Obesity depends not just on the amount of sugar one consumes, but also on metabolic factors that differ across people. The health effects and medical costs associated with obesity, moreover, are not uniform.").

215 Maximilian Tremmel, Ulf-G. Gerdtham, Peter M. Nilsson & Sanjib Saha, *Economic Burden of Obesity: A Systematic Literature Review*, INT'L J. ENVTL. RES. & PUB. HEALTH, April 19, 2017, at 1, 2 ("In 2014 the global economic impact of obesity was estimated to be US $2.0 trillion or 2.8% of the global gross domestic product (GDP). Besides excess health care expenditure, obesity also imposes costs in the form of lost productivity and foregone economic growth as a result of lost work days, lower productivity at work, mortality and permanent disability.").

but also to society at large"—almost $2 trillion.[216] Ranging from outpatient and inpatient services to lost working years and higher insurance, an economic number can be put on obesity.[217] Although various factors play a role in the occurrence of obesity, inadequate nutrition dominates and could provide an appropriate measurement to utilize when designing an added sugar tax based on the SCO.

Second, without some sort of minimum or maximum level of added sugar content, it is unlikely that actual obesity reduction will occur. Thus, incorporating a credit similar to the carbon tax could offset this limitation. A credit could be applied against a manufacturer's added sugar tax liability should the producer incorporate additional nutrition standards beyond the focus of added sugar. For example, a credit could be provided to a company that maintains a set percentage of products without any additional sugar. Additionally, to safeguard against the manufacturer passing the costs of the tax on to the consumer, a credit and/or penalty could be implemented to ensure that the manufacturer bears the burden of the tax. Requiring a minimum percentage of products with a limited added sugar content or setting a maximum percentage of products that contain higher levels of added sugar could ensure overconsumption of added sugar is sufficiently reduced.

Although it is hopeful that the manufacturer bears most, if not all, of the burden imposed by the tax, there is really no such thing as a tax only being levied on the manufacturer. That being the case, as described above, this type of tax would have regressive effects on lower socio-economic groups.[218] Ultra-processed foods filled with added sugar are largely consumed by low- to middle-class individuals and families because of their affordability and availability. Thus, the incidence of the tax would likely fall on lower income groups by making ultra-processed foods either more expensive or less available. However, for these same reasons, such a tax is the most efficient in shifting consumer choice, thereby also shifting manufacturer reformulation policies. Further, the burden could be offset by the "lower health risks and reduced health care costs" that otherwise arise in a diet filled with ultra-processed foods compared to a diet filled with whole foods.[219]

Finally, support for an added sugar tax is likely to be lacking because its effect is not directly "seen." The change in obesity levels often lag relative to changes in sugar consumption.[220] Moreover, tax rates may need to be adjusted to meet added sugar targets as manufacturers reformulate their products. Thus, is it likely the positive outcomes of an added sugar tax on obesity levels will only be experienced in the long term. Further, the current political climate raises challenges as to whether an ultra-processed foods tax, in whatever form, could be agreed upon and implemented. In light of the economic- and pandemic-related tensions between the Biden

---

[216] *Id.* at 13 ("Summarizing these results, we can state that obesity is responsible for a large fraction of costs, not only to the health care system but also to society at large.").

[217] *Economic Costs: Paying the Price for Those Extra Pounds*, HARV. SCH. PUB. HEALTH, https://www.hsph.harvard.edu/obesity-prevention-source/obesity-consequences/economic/ [https://perma.cc/ZZ3B-UPYX] (last visited Dec. 21, 2020) (explaining the indirect and direct costs of obesity).

[218] *See supra* notes 86–89 and accompanying text.

[219] *See* MARRON ET AL., *supra* note 86, at 2 (stating that "nutrition-focused taxes often emphasize lower health risks and reduced health care costs").

[220] *See supra* note 96 and accompanying text.

Administration and the new Congress, designing an additional tax to confront the obesity epidemic will likely not be the focus of forthcoming policy packages.

Despite the few limitations that would arise under an added sugar tax, the carbon tax provides a sufficient framework. Not only does an added sugar tax provide revenue, but it also effectively impacts the reformulation process thereby decreasing the levels of added sugar present in ultra-processed foods on the market and, ultimately, obesity levels.

C. Earmarked Revenues

It is crucial that policymakers use the revenue generated from the added sugar tax towards related health initiatives. Rather than placing the revenue in a general fund, the revenue should be earmarked specifically for purposes that reduce obesity. Earmarking these funds would negate some of the disproportionately harmful effects of the tax on lower socio-economic groups that are more burdened by the tax. Specifically, because lower socio-economic groups are more likely to consume ultra-processed foods loaded with added sugar and thus experience obesity, health-related measures could be drawn to limit their burdens. Previous articles and policies have focused on utilizing revenues for more broad, abstract initiatives such as education.[221] While those initiatives are necessary to adequately impact the overall health of the public, this Article argues in favor of more tangible and tailored uses of the revenue.

First, and most heavily advocated by the author, the government should utilize the revenues to fund research and development of technology that actively encourages consumers to purchase healthier foods. Similar to apps such as Ibotta and Fetch that utilize scanned grocery receipts to provide discounts to app users, an app could be created for consumers to scan their receipts to receive credits for the healthier food items they purchase.[222]

The scanned grocery receipts and credits could be incorporated into the person's account and generated into a document each year similar to a W-2. When taxes are filed, the refund could be incorporated into the taxpayer's tax return. A specified maximum annual refund could be set based on general costs of meeting the recommended dietary guidelines. For example, the USDA suggests that consumers can meet their daily fruit and vegetable recommendations for $2.10 to $2.60 per day.[223] Thus, research exists to calculate weekly, monthly, and annual costs of purchasing healthier foods.

Like that which was seen during the COVID-19 crisis, refund amounts could correspond to varying levels of income and decrease (or phase out) at higher levels of income. Although this raises a host of administrative, privacy, and enforcement issues that are outside the scope of this Article, utilizing the funds to directly increase the levels of whole foods purchased and consumed could more effectively decrease the

---

[221] *See* Cedeno, *supra* note 29, at 354 (explaining how tax revenue can be utilized to fund and implement nutritional and physical educational programs in schools).

[222] *See generally About Ibotta*, IBOTTA (2020), https://home.ibotta.com/about/ [https://perma.cc/Q4CE-YA78]; *How It Works*, FETCH REWARDS, https://www.fetchrewards.com/how-it-works [https://perma.cc/8VL9-PT4P] (last visited Apr. 29, 2020).

[223] Hayden Stewart & Jeffrey Hyman, *Americans Still Can Meet Fruit and Vegetable Dietary Guidelines for $2.10-$2.60 Per Day*, U.S. DEP'T OF AGRIC. (June 3, 2019), https://www.ers.usda.gov/amber-waves/2019/june/americans-still-can-meet-fruit-and-vegetable-dietary-guidelines-for-210-260-per-day/ [https://perma.cc/8PXV-5XQR].

purchase and consumption of ultra-processed foods, thereby curbing rising obesity levels. Along with this recommendation, a portion of the generated revenue must be provided for research on the social cost of obesity. More research is needed to show precisely how different foods affect obesity and how changes in tax policy effectively, or ineffectively, impact overall American diet and the rise of obesity.

Finally, a more general recommendation for the use of the revenue generated is included. This Article was written during the COVID-19 pandemic. As such, public health policies, including those related to obesity, require more funding for legitimate research and advanced preparation. Rather than be reactive to a crisis and try to determine the best method to handle the crisis while in the midst of it, policymakers must focus on preventative measures. COVID-19 illuminated the many flaws in our healthcare system and related public health policies. Attention must be given to provide means for healthcare workers and facilities to operate in a crisis, and emergency infrastructure and methods must be developed to adequately combat global diseases.

Although earmarking revenue would increase the administrative burden of distinguishing revenue raised by an added sugar tax and subsequently allocating it into specific uses, doing so is a crucial and necessary part of any tax policy that seeks to adequately address public health concerns.

CONCLUSION

Obesity rates show no signs of declining, nor do food corporations demonstrate activism in addressing this epidemic. Implementing regulations that benefit the public health is within the purview of the federal government, and the government must do its part to develop tax policies that adequately address a health crisis that affects a large percentage of the American population. Overconsumption of ultra-processed foods and excessive added sugar directly impacts the expectancy of obesity. Food corporations produce, sell, and market these harmful products for their benefit and to the detriment of the overall public health. Although industrial changes have provided greater access and affordability of food to groups of all income levels, this has come at the price of disproportionate direct and indirect healthcare costs faced by both the individual and society at large. By looking to the carbon tax framework, the federal government can develop a prescription that emphasizes all of the necessary contributors to the obesity epidemic: ultra-processed foods, added sugar, and the manufacturers of these products.