
Behavioral Economics and Obesity:

An Analysis of Fitness-Based Tax Incentives

by Nicholas Wallace

Both federal and state governments have experimented with policy proposals aimed at decreasing obesity rates, mostly through the regulation of unhealthy foods. There has been little research, however, on the impact of fitness-based policy initiatives on obesity rates. To address these issues, this paper first outlines previous policies aimed at preventing obesity and provides justification in favor of government intervention. In particular, this paper argues that hyperbolic discounting, a specific type of time-inconsistent preference where individuals make decisions that favor instant gratification rather than long-term benefits, provides economic justification for government intervention to combat obesity. It then uses Canada as a case study to demonstrate the effect that fitness-based tax credits have on physical activity, obesity, and long-term healthcare costs, and highlights a current pending piece of legislation in the 114th US Congress that would bring a similar program to the United States. More research is needed to confirm the effectiveness of fitness tax incentives on increasing physical activity among currently sedentary individuals. Nonetheless, this paper concludes by suggesting that fitness-based tax incentives are more politically viable than food regulations.

BACKGROUND

Obesity is currently one of the hot-button public health issues facing the nation. In the United States, obesity rates have more than doubled since 1980, with 68 percent of adults and 32 percent of children and adolescents categorized as either overweight or obese (The Centers for Disease Control and Prevention 2015). Obesity is widely considered to increase a person's risk of developing many serious health conditions, including hypertension, stroke, Type II diabetes, coronary heart disease, certain types of cancer, and premature death (National Heart, Lung, and Blood Institute 2012). The estimated medical and social costs of obesity are just as staggering as its lethal health effects. In the United States, the Centers for Disease Control and Prevention (CDC) estimated the direct medical costs related to obesity to be as high as \$147 billion in 2008, representing 9 percent of total annual medical spending (The Centers for Disease Control and Prevention 2015).

ECONOMIC JUSTIFICATION FOR PREVIOUS GOVERNMENT INTERVENTION

Economists agree that government intervention in a market is warranted when there are "market failures" that result in less-than-optimal production and consumption. Several experts have argued that the rise in obesity rates is an example of market failure. Bill Shrapnel, a well-established nutritionist, proclaims that many people make consumption decisions about food with imperfect information, failing to fully appreciate the links between

consumption and health consequences (Shrapnel 2015). Additionally, Kelly Brownell, a leading expert in obesity policy and the dean of the Sanford School of Public Policy at Duke University, argues that negative financial externalities exist as a result of obesity, meaning that the consumers themselves do not bear the full costs of their food consumption decisions (Brownell et. al. 2009). Widespread obesity raised all medical-care costs by \$315.8 billion in 2010, amounting to about \$3,508 a year for each obese person (Cawley et. al 2014). These additional expenses include doctors' appointments, hospital stays, prescription drugs and home healthcare (Cawley et. al 2014). Because of technological advances in the way chronic disease is treated, these services can be utilized for many years before the end of life (Cawley and Ruhm 2011). Moreover, private and public health insurance usually cover the treatment costs, with about half of the expenses covered by Medicare and Medicaid (Cawley and Ruhm 2011). While such spending does not directly reduce economic growth, it does represent a shift in priorities toward healthcare and away from other investments such as education, infrastructure, and national defense (Stilwell 2015). Therefore, it is implied that all Americans, whether or not they are overweight or obese, should care about the obesity "epidemic." Finally, it can be argued that children are a vulnerable population that cannot act rationally on their own, and should therefore be protected from the harms of demerit goods; in this case, the overconsumption of foods considered unhealthy.

Using these examples of market failure as justification, numerous policy interventions have been proposed in an

attempt to combat rising obesity rates. In accordance with the argument that unhealthy foods are demerit goods (goods that are perceived to negatively impact consumers and are over-consumed without regulation) “sin taxes” on sodas and sugary drinks have been experimented with at the state and local level. Mayor Michael Bloomberg’s attempt to ban super-sized sodas in New York City is the most notable example. A state court eventually struck down the law, concluding that it “exceeded the scope of its regulatory authority” (Grynbaum 2014). Likewise, several localities, including most recently Berkeley, California, have implemented Pigouvian taxes—taxes levied on a company or sector as a way to correct the negative consequences caused by their actions—on sodas in an attempt to decrease consumption (Frizell 2014). Pigouvian taxes can be levied as a “special tax,” in which the revenue raised must be put towards a specific purpose, or as a “general tax,” with revenue being put into a general fund (California Tax Data 2015). If levied as a special tax, the revenue from a tax on soda could be used, for example, to fund programs aimed at combating childhood obesity.

Ultimately, the people of Berkeley voted to impose a general tax of one cent (\$0.01) per ounce on the distribution of sugar-sweetened beverages, with the revenues raised going towards earmarked health programs in the Berkeley general fund (Lochner 2015). The Berkeley soda tax has largely been viewed as successful, with a recent impact study concluding “the 1 cent per ounce tax has been fully passed on to the retail pricing of sugar-sweetened beverages in large and small chain supermarkets and chain gas stations, a prerequisite for taxes

to reduce consumption” (Ng, et al. 2015). The Berkeley policy is not revolutionary. Scandinavian countries have had sugar taxes for many years, and in 2012, France and Hungary joined the list, followed by Mexico in 2014 (Geller 2016). India, the Philippines, and Indonesia have said they are studying similar levies while Britain debated the issue in parliament late last year (Geller 2016). Thus, sugar taxes seem to be one of the most popular “obesity prevention” policies worldwide.

The existence of imperfect information, in which the different parties involved in a transaction are not equally informed, is another classic example used by economists to justify government intervention in a market. In relation to obesity, American public policy has featured a theme of nutritional education and more rigorous regulations on menu labeling in the past decade (Merkle 2013). Provisions in the Affordable Care Act (ACA) highlight this concept by requiring large chain retail food establishments and vending machine operators to disclose calorie content of items on menus and in machines and provide other important nutritional information (Public Health Law Center 2010). The ACA also encourages private companies to implement employee wellness programs to combat obesity and generate cost savings (Public Health Law Center 2010). Finally, there have been calls to limit the marketing of unhealthy foods towards children and mandates to improve the nutrition of school lunches (The Prevention Institute 2015).

Despite the public efforts mentioned above, there is a lack of consensus among the various stakeholders that restricting access to certain foods increases health outcomes. This, combined with uncertainty

as to what role genetics play in the cause of obesity, makes policies that restrict food choices unpopular (Bell, Walley, and Froguel 2005). A recent journal article argues that physical activity is beneficial for people of all weights and can decrease a person's risk of chronic diseases even if he or she is overweight (Ekelund et. al. 2015). Specifically, researchers conducted a cohort study of over 300,000 European men and women and found that halting all sedentary behavior would theoretically reduce all-cause mortality by 7.35 percent, while corresponding estimates for halting obesity were 3.66 percent (Ekelund et. al. 2015). Thus, the study finds that, theoretically speaking, physical inactivity is responsible for twice as many deaths as obesity. As a result, this paper will focus solely on exercise (not nutrition) as a means to eliminating some of the external costs associated with obesity. It will also promote an approach that incentivizes participation rather than mandating it.

BEHAVIORAL ECONOMICS AND FITNESS TAX CREDITS

Perhaps the least-studied justification for government intervention in regards to obesity involves the existence of time-inconsistent preferences, a situation in which an individual's preferences change over time without any change in information. Time preference is the rate at which people are willing to trade present benefits (utility) for future benefits. This concept is often used in economics to explain savings and investment behavior (Thaler and Benartzi 2004). Having a low time preference means that a person is patient, has strong self-control, and values the future. Having a high time preference

means that a person prefers satisfaction at the present time and discounts the future (Thaler and Benartzi 2004). This phenomenon of discounting the future in exchange for present utility is known as hyperbolic discounting.

A significant amount of research has been done connecting the areas of hyperbolic discounting, present bias, and health status (Smith, Bogin and Bashai 2005; Timothy and Hamilton 2012; Cawley and Ruhm 2011; The Economics of Risky Health Behaviors 2011; Komlos, Smith and Bogdin 2004). If individuals behave according to a time-inconsistent model, they are likely to make choices today that exhibit a strong present bias, leaning toward instant gratification while not fully considering the future costs of those choices. Regarding obesity, a person with a strong present bias may choose to prioritize taste and relaxation over nutritional value and increased likelihood of disease. Related to physical activity, having a strong present bias might lead a person to substitute exercise with anything else that leads to more short-term gratification: working another job to make some extra money, hanging out with friends, or watching Netflix. In a study examining data from the National Longitudinal Survey of Youth, Smith, Bogin, and Bashai (2005) hypothesized that a higher rate of time preference would contribute to less investment in exercise and greater caloric intake, resulting in weight gain and an increased risk of obesity. They found evidence that higher time preferences are associated with greater body mass index (BMI)¹ among men and, to a lesser extent, among women (Smith, Bogin and Bashai 2005). John

¹ The simple height-to-weight ratio most commonly used to assess obesity.

Komlos, a leading economist who studies the effect of economic development on human biological outcomes, also found a positive relationship between BMI and the rate of discount, implying that more obese respondents are more likely to be impatient (Komlos, Smith and Bogdin 2004).

Within the framework of behavioral economics, the existence of too many options causes higher transaction costs when making decisions. In this sense, behavioral economists argue that it may be more efficient for the government to restrict options and help consumers make decisions. Thaler and Benartzi (2004) outline the idea of choice architecture, which asserts that the way in which things are presented can affect the actions of consumers. The authors discuss the notion of “libertarian paternalism,” an approach that helps consumers to make better decisions without impinging on their freedom to choose (Thaler and Benartzi 2004). In terms of obesity, the presence of hyperbolic discounting among some people who are obese may justify the implementation of public policies designed to make exercise more appealing. According to behavioral economics, incentives that emphasize the immediate rewards of exercise may change the time preferences of individuals from high to low, thus increasing their propensity to exercise. The rest of this paper provides an economic analysis of fitness tax credits and policies that provide financial incentives for people to exercise.

PREVIOUS LITERATURE REGARDING FINANCIAL INCENTIVES AND PHYSICAL ACTIVITY PROMOTION

The use of economic incentives to promote physical activity is well justified in the traditional economic framework (Cawley 2004, Pratt et al. 2004). Cawley argues that financial incentives can promote physical activity by reducing the total gross costs associated with inactivity, including financial cost, discounted utility of any adverse health impact, and discounted utility of any resulting weight gain (Cawley 2004). Using SLOTH (Sleep, Leisure, Occupation, Transportation, Home), an economic and time budget model, Pratt et. al state that “economic forces have an especially strong, but often neglected, influence on the physical activity–related choices made within these domains,” and argue that policy interventions focused in these areas can be effective (Pratt, et al. 2004).

There is also evidence supporting the effectiveness of direct economic incentives to increase physical activity. A meta-analysis evaluating the use of financial incentives to promote weight control conducted between 1972 and 2010 found that providing financial rewards for losing weight should motivate people to engage in behaviors that produce weight loss, although results varied based on the size of the incentive (Jeffery 2012). One field experiment that paid participants to go to the gym found a positive relationship between financial incentives and physical activity promotion, as the rate of gym visits after the intervention increased significantly (Charness and Gneezy 2009). The incentive scheme created the positive habit of exercising more: participants who

did not attend the gym before the study began to do so during the intervention and continued to go afterwards (Charness and Gneezy 2009).

Employer wellness programs are another practical example of financial incentives being used to promote physical activity. A comprehensive review of meta-analyses designed to assess the cost effectiveness of employer wellness programs concluded that such programs generate significant cost savings (Baicker et. al. 2012). According to the authors' analysis, employer wellness programs produced an average of \$358 in savings through reduced health costs per employee per year, costing the employer only \$144 per employee per year (Baicker et. al. 2012). Medical costs fall about \$3.27 for every dollar spent on wellness programs, and absentee day costs fall by about \$2.73 for every dollar spent (Baicker et. al. 2012). While employees themselves benefit from being healthier, employers save money in the form of lower replacement costs for absent workers and an advantage in attracting workers to the firm. According to the authors, other benefits may include "improved health, reduced turnover, and lower costs for public programs such as disability insurance and Medicare" (Baicker, et. al. 2012).

While these findings present strong evidence in favor of employer-based wellness programs, support for them is not universal. Horwitz and colleagues argue the benefits of employer wellness programs are overstated and contend that any cost savings generated by programs are a simple shift in cost sharing, with a disproportionately negative effect on unhealthy workers (Horwitz, Kelly and DiNa 2013). As a result, opponents

of employer-based health programs worry that this cost shifting undermines health insurance reforms that prohibit discrimination based on health status in determining insurance premium rates.

As outlined above, fitness is not only a potentially more fruitful public policy target for health promotion than nutrition, it is also well documented in the literature that financial incentives help promote physical activity. For these reasons, policymakers should explore policy interventions aimed at decreasing the direct financial burden associated with being physically active. One such proposal includes the implementation of a fitness-based tax credit. A fitness tax credit could reduce the financial costs linked with exercising (gym memberships, workout equipment, etc.) thereby theoretically increasing the total number of people engaging in such activities. Perhaps the most well-known example of national fitness tax incentive strategy is the Children's Fitness Tax Credit (CFTC), which was introduced by the Canadian Parliament in 2007 (Reach 2012).

CASE STUDY: CANADA

Children's Fitness Tax Credit

The CFTC allows parents to claim a non-refundable federal income tax credit² for fees in eligible physical activity programs for children less than 16 years of age (Canada Revenue Agency 2015). While the CFTC covers the costs of registration and membership, it does not cover other expenses such as the cost of equipment. The creditable amount is calculated by

² Originally, the credit could not be used to increase or create a tax refund. However, the credit was made refundable beginning in the 2015 tax year (Payton 2014).

multiplying actual expenses sustained (up to a maximum of \$500 per child) by the lowest personal income tax rate, which is 15 percent in Canada (Canada Revenue Agency 2015). Therefore, the maximum CFTC was originally \$75 per eligible child, but has since doubled after former Prime Minister Stephen Harper expanded the tax credit to \$150 per eligible child in October of 2014 (Payton 2014).

To qualify for the credit, a program must be ongoing (a minimum of eight consecutive weeks' duration or five consecutive days for children's camps), an adult must supervise it, and it must promote cardiorespiratory endurance plus at least one other component of physical fitness such as muscular strength, muscular endurance, flexibility, or balance (Canada Revenue Agency 2015). The tax credit covers strenuous games like hockey and soccer as well as activities such as horseback riding and sailing (Canada Revenue Agency 2015). Activities that do not qualify for the tax credit include those involving a motorized vehicle, activities that lack adult supervision, and those that are part of a regular school program (Canada Revenue Agency 2015).

Local provinces in Canada have followed suit with their own fitness-based tax incentives. Refundable tax credits are available in Saskatchewan and Ontario which allow individuals to receive a refund even if they do not owe any income tax. Saskatchewan in particular allows individuals to claim a credit for the full amount of fees paid up to \$150 per eligible child, rather than a percentage of the lowest federal income tax rate (Tigerstrom, Larre and Saunder 2011).

Unequal Distribution: Does the CFTC Help Everyone?

Identifying the causal relationship between fitness-based tax incentives and a decline in obesity rates is complex. Further research is necessary to establish how effective these programs are in regards to increasing physical activity. With that being said, assuming the program is effective in its goal of making exercise more accessible to children, the efficiencies associated with such policies do not consider social values such as fairness and equity. The gender gap that exists in youth sport participation is well documented, with girls starting to play sports later in childhood while also dropping out earlier, leading to an overall lower participation rate (Leek et. al 2011). Additionally, girls are more likely to compete in individual sports than in team sports (Solutions Research Group Consultants Inc., 2014). From 2007-2009, families with at least one male child were more likely to claim the CFTC, raising concerns that the CFTC did not adequately take into account gender differences in children's participation in physical activities (Fischer et al. 2013).

However, an even larger disparity exists when analyzing the effects of the CFTC based on household income. Of the families that claimed the CFTC from 2007-2009, the average annual household income was approximately \$115,000, compared to the national population average of approximately \$69,000 (Fischer et al. 2013). Furthermore, approximately 46 percent of families claiming the CFTC earned more than \$100,000 annually (Spence et al. 2010). Generally, the amount claimed through the CFTC increased with increasing levels of income. For families earning \$100,000 to \$200,000 annually and those earning more than \$200,000, CFTC

claims were, on average, \$125 and \$250 higher, respectively, than those for families with an annual income of \$20,000 or less (Spence et al. 2010).

Household income appears to be the most significant factor in determining whether Canadian parents claim the CFTC. Because the design of the tax credit is not refundable and credits up to 15 percent of fees incurred—rather than refunding a set amount of cash—it appears a tax credit such as the CFTC disproportionately benefits those people who can afford to pay the upfront costs of registration for a fitness program (Spence et al. 2010). Furthermore, low-income families who may be more likely to enroll their children in free fitness activities offered by schools or local recreation centers are disqualified from claiming this benefit. In practice, the CFTC likely subsidizes programs higher-income families would have participated in without any tax credit, thereby creating a crowding-out effect³ (Spence et al. 2010). Higher-income households are more likely to be able to incur upfront costs and wait until the end of the tax year for a refund, and the tax credit is likely a minimal incentive for parents who cannot afford to pay any membership fees upfront, which this seems to contradict the Canadian government's objective that all parents have "an equal opportunity to benefit" from the CFTC (Leitch 2006). It should be noted that in an effort to help low-income families reap the benefits of the CFTC, the credit was made refundable beginning in the 2015 tax year (Payton 2014). Making the credit refundable allows low-income earners who do not owe taxes to receive a

³ According to economists, "crowding out" occurs when increased government involvement in a sector of the market economy substantially affects the remainder of the market.

direct benefit from the CFTC (Spence et al. 2012).

The Adult Fitness Tax Credit: A Similar Tax Credit for Seniors?

Regarding health and wellness, former Canadian Prime Minister Stephen Harper made two election promises while campaigning for reelection in 2011: to double the existing CFTC, which (as noted above) he accomplished, and to introduce an Adult Fitness Tax Credit (AFTC) (Raj 2015). As part of the proposal for the AFTC, older adults (the age has yet to be determined, but would begin at 55, 60, or 65 years of age) would be eligible for a tax credit similar to the CFTC, which would include registration or membership fees (e.g. a gym membership) but not purchases such as running shoes or other equipment (Office of the Parliamentary Budget Officer 2013).

While the movement in favor of the AFTC in Canada is still in its beginning stages, it is gaining momentum. On April 21, 2015, the Canadian government announced the formation of an expert panel charged with designing the credit (Fitness Industry Council of Canada 2015). Only two studies have been conducted regarding the economic impact of such a tax credit (Parliamentary Budget Officer 2013, The Centre for Spatial Economics 2007). Both studies assumed that recreational sports services were relatively sensitive to price changes, estimating a price elasticity of demand⁴ between -0.36 and -0.9. In this case, it is estimated that a 1 percent decrease in the price of sports services to be associated with an increase in demand of sports services between .36 percent and .9 percent.

⁴ A measure of the responsiveness of the quantity demanded of a good or service to a change in its price.

The Parliamentary Budget Officer (PBO) estimated the tax expenditure incurred by the implementation of an AFTC. According to PBO, the proposed AFTC “would result in a gross impact on the federal Treasury of approximately \$15 million to \$47 million in the year following introduction, with a cumulative cost impact of \$86 million to \$268 million over five years” (Parliamentary Budget Officer 2013). A separate study from the Centre for Spatial Economics (C4SE) concluded the total tax expenditure of the AFTC to be \$370 million after the first year of implementation (The Centre for Spatial Economics 2007). The difference between the two estimates can be attributed to the significantly lower estimates on individual fitness-related spending by PBO compared to the C4SE study. Additionally, C4SE assumed that more people eligible for the tax credit would claim it than did PBO. PBO also assumed no behavioral changes on the part of service providers (i.e. organizations will not adjust their pricing to capture any of the effective price reduction).

The C4SE report also estimated the impact of the proposed AFTC on healthcare costs, stating that healthcare savings would reach \$135 million in the first year of implementation, \$286 million by year two, then gradually increase to \$692 million over twenty years. Based on these estimates, the C4SE study concludes that the lost revenue in taxes would be made up in just three years with lower healthcare costs. Moreover, the study predicts that the AFTC would reduce the amount of work missed due to illnesses related to lack of physical fitness, which would then increase the amount of personal income taxes collected later (The Centre for Spatial Economics 2007). A crucial limitation of the study rests with its major assumption

regarding the effectiveness of the AFTC in getting people “fit,” or on par with recommended physical activity guidelines. Specifically, C4SE assumed that the increased physical activity induced by the tax credit heavily impacted the degree of physical fitness among participants, with one half of the new participants becoming fit in the second year of the tax credit, and the other half in the third year. The assumed success rate of completely transforming a sedentary population to physically active seems unrealistically optimistic. Thus, the study may overstate the tax credit’s benefits.

WOULD A FITNESS TAX CREDIT WORK IN THE UNITED STATES?

Rates of overweight and obesity, and even the differences stratified by age, ethnicity, and socioeconomic status, are similar among Canadians and Americans. About 62 percent of adults are overweight or obese in Canada, compared to the 68 percent rate in the United States (Public Health Institute Agency of Canada, Canadian Institute of Health Information 2011). Canada and the US have the two highest rates of childhood overweight/obesity in the world, with a prevalence of 25 percent and 30 percent, respectively (OECD Directorate for Employment, Labour and Social Affairs, 2014). Like the US, obesity is more prevalent in the most socioeconomically disadvantaged areas of Canada, with a generally inverse pattern existing between education level and obesity prevalence for both men and women aged 25 and older (Public Health Institute Agency of Canada, Canadian Institute of Health Information 2011). These similarities lend support to the presumption that the obesity problems both countries face are comparable. The

overall prevalence of obesity among Americans is actually higher than in Canada, suggesting that the United States is more in need of obesity reduction (OECD Directorate for Employment, Labour and Social Affairs, 2014).

One approach to address this issue in the United States would be to utilize a tax credit incentive system based on the CFTC. An American fitness tax credit that targets children could mirror the CFTC as a tool to reduce the prevalence of childhood obesity. Moreover, a broader tax credit, one that combines the implications of Canada's CFTC and AFTC, could be made available to adults and children alike. In his analysis of the CFTC, Reach advocates that if the US were to institute a similar policy, it should broaden the scope of activities covered by the tax credit to "apply to gym memberships and sports leagues to encourage community-based and routine forms of exercise," as well as race registration fees (Reach 2012). This would allow people to benefit even if they do not participate in organized team sports or are not members of a gym.

This type of legislation was first introduced to Congress in 2006 and has been reintroduced in several subsequent sessions. The Personal Health Invest Today (PHIT) Act (H.R. 1218) was once again proposed to the 114th Congress and referred to the House Ways and Means Committee (Library of Congress 2015). The bill would allow Americans to use pre-tax medical accounts to pay for physical activity expenses (H.R. 1218, 2015). Under current law, the IRS allows for the use of flexible spending accounts (FSAs), health reimbursed arrangement (HRAs), health savings accounts (HSAs), or medical savings accounts (MSAs) as a way for

citizens to use pre-tax dollars to pay for "qualified medical care expenses," which may include (1) diagnosis, cure, mitigation, treatment, or prevention of disease; (2) transportation essential to medical care; (3) qualified long-term care services; or 4) insurance (26 USC §213d). The PHIT Act seeks to amend the IRS code to add "qualified sports and fitness expenses" as an allowable use for funds in pre-tax medical accounts (US Congress, 2015). PHIT would allow taxpayers to place up to \$1,000 a year (\$2,000 for joint couples) in existing pre-tax medical accounts for reimbursement of such physical activity expenses (PHIT America 2015). According to PHIT America, "lower costs will promote active lifestyles and improve the health of Americans" (PHIT America 2015). The PHIT Act was introduced to the Senate for the first time in October of 2015 as S. 2218 (US Congress, 2015).

The proposed PHIT Act is broader than the CFTC and would allow for fees associated with gym memberships, fitness classes/trainers (including books/DVDs), youth camps, and race registrations to essentially be purchased with tax-free dollars through the use of the aforementioned medical accounts (PHIT America 2015). With that being said, certain restrictions would apply: provisions exist that prohibit country club fees and certain clothing/footwear from qualifying (PHIT America 2015). Additionally, while PHIT would allow equipment to be purchased with pre-tax dollars, there is a \$250 cap on any single piece of equipment; PHIT is meant to serve as a means to promoting physical activity, not a way of upgrading systems (PHIT America 2015).

Because the Canadian government provides a single-payer healthcare system,

the justification for short-term revenue loss via fitness tax credits seems more intuitive because the government would benefit directly from the resulting healthcare savings. Conversely, the campaign in favor of PHIT in the US is focused on the long-term effects of indirect cost savings, which would offset the lost revenue (estimated \$2.5 billion over 10 years by the CBO) from providing this type of credit to US taxpayers. The World Health Organization (WHO) determined that in the United States a \$1 investment in physical activity alone (in time and equipment) would reduce medical expenses by \$3.20 (World Health Organization 2003). Additionally, research indicates that 2 in 5 Americans would become more physically active if offered a financial incentive (PHIT America 2015).

However, a closer look at the PHIT Act suggests it would produce similar problems of unequal distribution as the CFTC. Under IRS regulations, in order to deduct these expenses straight from their taxes, a citizen's medical expenses must exceed 10 percent of his or her yearly income (United States Code, 2004). While one's health insurance status, as well as his or her household income, may grant certain individuals this exemption, most Americans are unlikely to reach this 10 percent threshold: in 2009, only 8 percent of high-income earners (above 400 percent of the Federal Poverty Line) exceeded this threshold, in addition to only 21 percent of middle-income earners (200-399 percent of the FPL). While a higher rate (up to 33 percent) of low-income earners (below 200 percent of the FPL) reached this threshold in 2009, it is less likely, for reasons noted earlier, that these individuals would qualify for the benefit (Komisar 2013).

Furthermore, the majority of Americans that would benefit from this type of fitness tax credit would need access to medical savings accounts. (26 USC §213d). Those without access to such accounts—including the uninsured and Medicaid beneficiaries—would fail to reap the benefits, along with those who participate in free forms of physical exercise, such as walking. Consequently, it seems that PHIT would disproportionately benefit middle and high-income Americans in the same ways the CFTC benefits higher-income Canadians (although it should be noted that this demographic still has high rates of obesity, can benefit from the proposal) (Spence et. al. 2010). However, the implementation of the Affordable Care Act to allow for a majority of “bronze” plans (which have the lowest premiums but also the highest out-of-pocket costs for services) to be eligible might help to smooth the distribution (The Manhattan Institute 2014).

CONCLUSION

As rates of overweight and obesity remain high in the United States, lawmakers continue to argue over what role the government should play in attempting to alleviate the external costs associated with it. While most attempts at correcting market failures associated with obesity have come in the form of nutritional regulation and taxation, a focus on fitness, rather than nutrition, is imperative for two distinct reasons. Firstly, fitness tax credits may provide a more politically feasible path for government intervention. While eating is a necessity for survival, exercise is voluntary; everyone does not have to play sports or join a gym. Accordingly, limited

government involvement to the extent of incentivizing fitness may not be nearly as invasive as regulating food consumption, which attempts to promote healthier eating habits at the expense of imposing heavily on personal choice. Secondly—and more importantly—while physical activity and obesity are clearly linked, they are two discrete entities: a person can be overweight and still physically active, while a sedentary person may be at a healthy weight. As pointed out earlier in the Ekelund cohort study, people who exercise are healthier (and have better health outcomes) than those who do not exercise across all BMI levels (2015). There is no question that the “obesity epidemic” is a problem in the United States and around the world. However, society should reduce the stigma surrounding obesity by focusing on getting more people to be physically active. The number on the scale is less important when the person stepping on it exercises daily and consumes a nutritious diet.

As highlighted by the CFTC, it is unclear whether the positive effects of such a tax credit would be equitable across all socioeconomic groups. Canadian families living paycheck to paycheck lack the funds needed to put down money upfront even though they will receive a deduction from their taxes at the end of the year. If the PHIT Act were to become law, Americans without access to health-related savings accounts—including those with less comprehensive health plans given by their employers, Medicaid recipients, and the uninsured—would not be eligible for the benefit. While the regressive⁵ nature of fitness tax credits is notable, it should

⁵ It should be noted that the “sin taxes” on food, the well-known alternative to fitness tax credits, are also regressive taxes (Brownell and Frieden 2009).

not prevent countries from implementing them. Fitness can be prioritized in lower-income communities by other means, such as reducing the environmental barriers to exercise, or even with separate financial incentives. Additionally, fitness tax credits can be designed in other ways to include more low-income people, such as the direct (refundable) tax credits aimed at physical activity as seen in localities of Canada.

Fitness tax credits have potential to work. Theoretically, investing in prevention now could generate long-term cost savings without intruding on the individual liberties of consumers. However, more research is needed to establish a more equitable design of fitness tax credits in order to allow middle- and lower-income citizens to benefit. Additionally, further studies examining the effectiveness of fitness tax credits at incentivizing more sedentary individuals to increase their activity levels, rather than simply subsidizing the physical fitness of already active people, would strengthen the argument in favor of their implementation.

Nevertheless, the severity of the problems associated with physical inactivity (including obesity) is monumental: 79 percent of adults do not meet the Physical Activity Guidelines outlined in 2008 (CDC 2014), and 28 percent of adults are completely sedentary (PHIT America, 2015). The United States has some of the top incidences of chronic disease in the world. As of 2012, about half of all adults—117 million people—had one or more chronic health condition. One of four adults had two or more chronic health conditions (CDC 2014). In their current state, fitness-tax credits are not perfect; however, their potential benefits in helping to prevent chronic disease outweigh the short-term financial costs of piloting the policy.

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