



The Schroeder Center for Health Policy

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Taxes and Zoning to Address Obesity

In this brief:

- A discussion of taxing and zoning options, focusing specifically on **soda taxes**, restrictive **fast-food restaurant zoning**, and **healthy food enterprise initiatives** as obesity prevention policy options.
- A summary of the relationship of these taxes and zoning options to obesity prevention and an analysis of arguments against their implementation.
- An analysis of whether these measures can be effective tools for state and local government in Virginia to promote healthier food choices and improve the local food environment.

Obesity: A Public Health Issue

Obesity is one of the more formidable health challenges in the United States. With its high prevalence among both adults and children, its significant immediate and long-term health consequences, and its costly medical expenditures, obesity threatens the wellbeing of millions of Americans and contributes to the overall rise in healthcare expenditures.

Body mass index scores — a height and weight calculation — determine whether an individual is considered obese (CDC 2010a). Currently, more than one in three U.S. adults — 78 million people — and nearly 26% of adult Virginians are obese (Ogden et al. 2012; CDC 2012b). Among U.S. adults, this represents a substantial increase over the last several decades. Since the late 1980s, obesity rates in adults over 20 years old increased from 23% to approximately 34% (Ogden and Carroll 2010b), and on average, adults weigh 24 pounds more than they did in the 1960s (Ogden et al. 2004).

Currently, one in six U.S. children and adolescents is obese (Ogden et al. 2012). Over the past 30 years, childhood obesity rates have more than tripled, increasing from 5% in 1980 to 17% in 2008 (Ogden and Carroll 2010a). In Virginia, 31% of children aged 10 to 17 are overweight or obese (Virginia Foundation for Healthy Youth 2012).

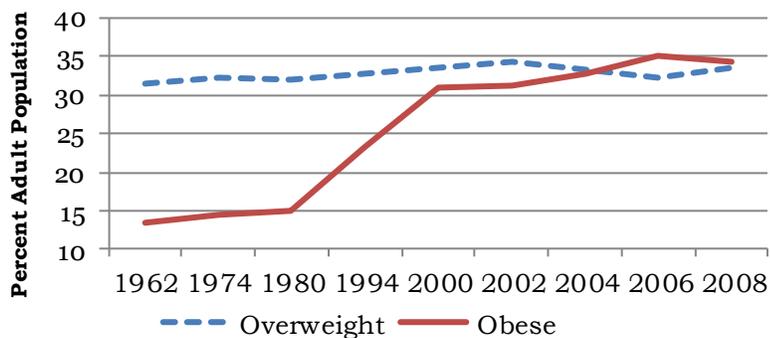
The health consequences of obesity are significant. Obesity in adults and children is linked to a greater risk for type 2 diabetes, stroke, heart disease, depression, and some types of cancer (CDC 2011c; Sjöberg et al. 2005; Onyike et al. 2003; Roberts et al. 2003). Given these significant health

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National Rates: Obesity and Overweight



Source: CDC National Health Examination Survey

issues, the World Health Organization ranks obesity as the fifth leading cause of deaths worldwide (WHO 2011). In a 2001 “Call to Action,” the Surgeon General of the United States reported that “overweight and obesity have reached nationwide epidemic proportions” (U.S. DHHS 2001).

The medical costs associated with obesity in the United States are considerable. In 2008, obesity-related costs were responsible for nearly 10% of total medical costs (Finkelstein et al. 2009). National annual medical costs for obesity were estimated at \$147 billion, with Medicare and Medicaid assuming a significant part of the burden (Finkelstein et al. 2009). Research suggests that obese Medicare beneficiaries cost the federal government approximately \$600 more per year in non-inpatient services and pharmaceuticals than normal weight beneficiaries (Finkelstein et al. 2009).

In Virginia, obesity accounted for approximately \$1.6 billion in annual health care costs in 2003 (Virginia Foundation for Healthy Youth 2012).

Because the public bears at least some of the costs associated with obesity through Medicare, Medicaid, and other public healthcare programs, some argue for public intervention to reduce current obesity levels (Brownell et al. 2009; Baker 2008; Gostin 2007), in an attempt to reduce obesity-related medical costs and improve the health of Americans currently affected or potentially affected by obesity.

Food consumption, both the level of intake as well as the quality of what is eaten (i.e., eating less fruits and vegetables), contributes to obesity. The food environment and the availability of healthy or unhealthy foods in an individual’s local community can play a significant role in consumption choices (Mellor et al. 2011; Sturm et al. 2010; Hill et al. 2003). The Surgeon General’s 2001 “Call to Action” encourages “environmental changes that help prevent overweight and obesity” (U.S. DHHS 2001).

State and local governments possess various tools that can influence the local food environment. Two such tools are the use of taxing and zoning powers to improve the health of communities (Ashe et al. 2007). However, policymakers are not in complete agreement on the appropriateness of using taxing and zoning powers in this manner nor on the best way to utilize these mechanisms. While some believe that these governing instruments can positively change the local food environment so as to encourage healthier consumption choices (Ashe

et al. 2007), still others offer evidence that taxes and restrictive zoning are inappropriate or ineffective tools in the fight against obesity (Drenkard 2010; Fletcher et al. 2010c; Sturm & Cohen 2009).

This policy brief discusses these taxing and zoning options, focusing specifically on soda taxes, restrictive fast-food restaurant zoning, and healthy food enterprise initiatives. The sections that follow describe these options more fully, summarize their relationship to obesity prevention, analyze arguments against their implementation, and consider whether these measures can be effective tools for state and local government in Virginia to promote healthier food choices and improve the local food environment.

Sugar-Sweetened Beverage Taxes – The “Soda Tax”

The Relationship Between Soda Consumption and Obesity

Consuming excess calories causes weight gain and leads to obesity. On average, beverages account for nearly 21% of Americans’ daily calories (Duffey & Popkin 2007). Caloric intake from sugar-sweetened beverages has increased significantly over the past 40 years, by nearly 150 calories per person per day (Duffey & Popkin 2007). Sugar-sweetened beverage consumption is the largest source of beverage calories among adults, and soda is the largest contributor (Bleich et al. 2009).

Over the past 50 years, soft drink consumption has increased 500%

(Fletcher et al. 2010b), and this upward trend parallels increasing obesity rates. Currently, many Americans – both young and old – drink soda regularly. Eighty-four percent of 5th and 8th grade students, for example, report having had a soda in the previous week (Fletcher et al. 2010b). In addition, nationally representative studies find that 25% of high school students (grades 9-12) drink soda daily (CDC 2011a) and over 60% of adults drink a sugar-sweetened beverage on a given day (Bleich et al. 2009).¹

¹ In addition to soda, sugar-sweetened beverages include sport drinks, fruit drinks and punches, low-calorie drinks, and sweetened tea (Bleich et al. 2009).

Studies have consistently reported that soft drink consumption is associated with higher energy intake and weight gain (Vartanian et al. 2007; Malik et al. 2006). Some evidence finds that drinking an extra 12 ounce can of soda daily can result in a 15 pound weight increase in a year (Apovian 2004). Given the association of sugar-sweetened beverage consumption to weight gain, policymakers have considered a “soda tax” as one way to discourage soda consumption.

Purpose and Description of the “Soda Tax”

Revenue for soft drinks in the United States are over \$70 billion per year (Fletcher et al. 2010c). Since 1920, states have taxed soft drinks as a way to raise revenue.

More recently, states and local governments are proposing “soda taxes” as one strategy to not only

Studies have consistently reported that soft drink consumption is associated with higher energy intake and weight gain.



raise revenue but to indirectly reduce obesity – by increasing prices to reduce consumption (Fletcher et al. 2010c; Institute of Medicine and National Research Council 2009).

Taxes on soft drinks are passed on to consumers in the form of excise or sales taxes, which vary by state and by retail location (e.g., grocery stores vs. vending machines) (Chriqui et al. 2008). In 2007, eight states imposed a flat tax on foods regardless of item and five states did not impose a sales tax on any food items (Chriqui et al. 2008). Thirty-eight states used product specific sales taxes. In states taxing soft drinks, the soda tax rate ranged from a low of 1.23% (grocery store and vending machine) to a high of 7% for soda sold in grocery stores and 8% for vending machine soda (Chriqui et al. 2008). Twenty-eight states taxed soft drinks at a higher rate than the standard state tax rate for food items. As of 2009, 33 states had implemented a soda tax at an average rate of 5.2% (Brownell et al. 2009).

Potential Effectiveness: Lessons Learned from Tobacco Sales Taxes

While some policymakers oppose government intervention in preventing obesity, others support such intervention based on the success of other public health efforts, including activities to curb tobacco use, increase automobile safety, and improve vaccination rates (Chriqui et al. 2008). This section focuses specifically on tobacco sales tax because of its similarity to soda taxes.

In 1964, the U.S. Surgeon General first published a report on the negative health effects of smoking (U.S. Department of Health, Education, and Welfare 1964). In the almost 50 years since that publication, a multitude of studies and reports have confirmed and expanded upon the negative health effects of tobacco use (U.S. DHHS 2010), including the potential effects of second-hand smoke.

Increasing sales taxes on tobacco products is a policy tool, generally supported by the public, which is used to decrease tobacco use (U.S. DHHS 2010; Baker 2008). The current federal sales tax on a pack of cigarettes is \$1.01 and state taxes range from \$.17 per pack in Missouri to \$4.35 per pack in New York (National Conference of State Legislatures 2010; CDC 2010b). Studies show that as the price of cigarettes increases, consumers respond with a reduction in their consumption (Koh 1996; Brown 1995). The CDC reports that a 10% increase in the price for cigarettes can lead to a 4% reduction on cigarette consumption among young adults and adolescents (Task Force 2005). Since the 1970s, as a result of significant taxes and fervent public awareness campaigns, cigarette consumption per capita continues to fall (CDC 2012d).

Given the effects of the excise tax on tobacco use, it is thought that a significant tax on soda could reduce consumption thereby encouraging healthier beverage choices among consumers. A meta-analysis on the price elasticity of various foods and

beverages suggests that consumers will respond to a 10% increase in soda price by reducing their consumption by 8% - 10% (Andreyeva et al. 2010). The actual effects of this consumption reduction on obesity is less clear, particularly as consumers substitute higher priced soda with other caloric beverages (Fletcher et al. 2010c). Still, estimates suggest that a reduction of 100 kilocalories a day, slightly less than the average amount of calories in a can of soda could prevent weight gain for most of the population (Fletcher et al. 2010c ; Hill et al. 2003).

If consumers reduce their soda consumption and consequently reduce their overall calorie intake, then a significant soda tax could possibly improve health outcomes for a substantial segment of the population that regularly consume calorie-dense soda. Furthermore, revenue raised from a soda tax could be used for programs targeted at reducing obesity through improving nutrition and/or encouraging physical activity within the community (Sturm et al. 2010; Baker 2008; Gostin 2007). The success of efforts to curb tobacco use, supported by cigarette tax revenue, is evidence of the type of efforts that could be supported by a soda tax (Brownell et al. 2009; Ashe et al. 2007; Koh 1996).

Arguments Against a Soda Tax

While some evidence suggests a soda tax may reduce soda consumption, opponents of a soda tax cite the following three difficulties in implementing such a tax.

One of the biggest concerns of any excise tax, including a soda tax, is its regressivity. That is, individuals with lower incomes will pay a larger share of their income, as compared to those with higher incomes, to consume the same good. Opponents of cigarette taxes raised the same concerns about taxing tobacco products, thus making lower-income smokers pay a disproportionate share of their incomes to smoke (Remler 2004; Lyon & Schwab 1995). Proponents of tobacco taxes successfully argued that the individuals with low income faced a disproportionate share of smoking-related illnesses and, thus, could benefit from such a tax (Brownell et al. 2009). Much like the proponents of a tobacco tax, supporters of a soda tax argue that soda is not necessary for survival and that soda can be easily replaced with healthier, less expensive beverages such as water (Brownell et al. 2009).

Another potential threat to the implementation of a soda tax is that soda consumption is not generally perceived by the public as a substantial health threat (Klein & Dietz 2010). Soda consumption does not have the same social stigma that cigarette smoking does (Klein & Dietz 2010), and the public therefore may not demand the same kind of support for government intervention. Drinking soda, for example, does not impose the same health effects on nonusers as does “second-hand smoke” on bystanders. Moreover, in times of recession and unemployment, the public is generally unsupportive of raising sales taxes, particularly on grocery products.

Soda consumption is not generally perceived by the public as a substantial health threat.

A third argument used by opponents of a soda tax is that some research shows limited or no effects of soft drink taxes on consumption and weight outcomes. Economists Nathan Fletcher, David Frisvold, and Nathan Tefft, for example, have published several studies that suggest soda taxes do relatively little to reduce the prevalence of obesity (Fletcher et al. 2010a, 2010b, 2010c). Even if soda consumption decreases, they argue that “reductions in calories from soda are completely offset by increases in calories from other beverages,” meaning that a reduction in soda consumption does not lead to a reduction in calorie intake (Fletcher et al. 2010c). Moreover, Fletcher et al. (2010b) find no significant difference in children’s BMI scores between states with soda taxes and those without soda taxes.

Soda Tax in Virginia

Since 1984, Virginia has had a statewide excise tax on soda, less than 1% of gross receipts of soda sales, levied on wholesalers and soda distributors (Virginia Code § 58.1-1702). This tax does not apply to

individual consumers who might purchase soda at a convenient or grocery store.

Local governments in Virginia face considerable legal restrictions on their ability to tax. Virginia operates under Dillon’s Rule, which limits the freedom that localities have to self-govern including their ability to levy local taxes (Diller & Graff 2011). Currently, Virginia has a statewide sales and use tax of 4% on all goods and services sold (§ 58.1-603), and Virginia law allows localities to levy an additional 1% general retail sales tax to generate local tax revenue (§ 58.1-605). However, the statute does not allow for a specific tax on products like soda.

Virginia law does allow localities to levy a “meal tax” on “food and beverages sold, for human consumption, by a restaurant...” (§ 58.1-3833). However, this statute is limited to 4% of the purchase price and to beverages “served as part of a meal,” which precludes factory sealed soda bottles and cans intended to be consumed outside the store. Moreover, Virginia’s statute is unclear as to whether a local government can single out a specific food or beverage to tax at a different rate than other items. And, it seems unlikely a local government would opt to apply this tax on only a specific item like soda and forgo tax revenue from other meal purchases.

The limited authority granted to Virginia localities seems to preclude a soda tax at the local level. However, much like cigarette (Code of Virginia § 58.1-1001) and alcohol

Current Virginia Soda Tax Rates on Retailers

Tax	Gross Receipts of Soda Sales
\$50	< \$100,000
\$100	\$100,000 - \$250,000
\$250	\$250,000 - \$500,000
\$750	\$500,000 - \$1,000,000
\$1,500	\$1,000,000 - \$3,000,000
\$3,000	\$3,000,000 - \$5,000,000
\$4,500	\$5,000,000 - \$10,000,000
\$7,200	\$10,000,000 - \$25,000,000
\$18,000	\$25,000,000 - \$50,000,000
\$33,000	> \$50,000,000

The Code of Virginia § 58.1-1702 (1984).

taxes (Code of Virginia § 4.1-234), the state government can and does levy a tax on soda. However, the economics literature suggests that for a soda tax to affect consumer behavior, the tax must be significantly higher than the current Virginia state-level excise tax which is less than 1% of total merchandise sales (Sturm et al. 2010).

Zoning: Restricting Fast-Food Restaurants and Encouraging Healthy Food Enterprise Zones

Zoning is a use of the police power reserved to the states by way of the 10th Amendment. Police power refers to the state's power to regulate based on the health, safety, welfare, and morals of the public (Ashe et al. 2007). Virtually all states delegate zoning power to localities, allowing them to permit or prohibit specific types of land use. Zoning can be used to address various issues such as crime, pollution, and aesthetics. Local zoning ordinances are generally upheld by the courts as long as they are rationally related to a legitimate government purpose (*see Village of Euclid v. Amber Realty Co. (1926)*).

The following sections focus on two types of zoning options related to addressing obesity in communities: restricting the building of fast food restaurants and encouraging healthy food enterprise zones.

The Relationship Between Fast Food and Obesity

American families spend a large portion – about 46% – of their food budget on food consumed outside the home (Keystone Center 2006). A substantial portion of food consumed outside the home comes from quick-service, fast-food restaurants that offer high-calorie, high-fat foods at economical prices.

Some researchers believe that the increasing number of fast-food restaurants has contributed significantly to increasing obesity rates (Pereira et al. 2005; Prentice & Jebb 2003). With a menu of high-calorie, energy-dense foods, large inexpensive portions, and the frequency with which both adults and children consume such food, fast-food restaurants have significantly contributed to the amount of calories that the average individual consumes (Maier et al. 2005b; Prentice & Jebb 2003).

Consuming excess calories causes weight gain and leads to obesity. Moreover, adults and children, who regularly eat fast food, consume more calories, saturated fat and sodium. This in turn is associated with adverse health outcomes such as heart disease, hypertension, and diabetes (Maier et al. 2005b; Prentice & Jebb 2003).

Areas with higher concentrations of fast-food restaurants could negatively contribute to the local food environment. Some studies find that the density or proximity of fast-food restaurants is positively correlated with higher rates of

Adults and children, who regularly eat fast food, consume more calories, saturated fat and sodium.

obesity and overweight (Mellor et al. 2011; Currie et al. 2009; Mehta & Chang 2008), suggesting that increased availability of fast food may be a significant contributing factor to the obesity epidemic.

Of particular concern is that fast-food and formula type restaurants serving low-nutrient, energy-dense foods tend to be more concentrated in minority and low-income neighborhoods where residents already face unique challenges to obtaining healthy foods (Kwate et al. 2009; Block et al. 2004;). In many cases, these neighborhoods lack supermarkets and other establishments that sell fresh produce, whole grains, healthy beverages, and lean protein (Larson et al. 2009; Galvez et al. 2007; Powell et al. 2007). Supporters of restrictive zoning believe that restricting fast-food restaurants in certain locations will encourage purveyors of healthier foods to locate in these neighborhoods instead (Maier et al. 2005b).

The high correlation between fast food consumption and obesity as well as between fast-food restaurant density and obesity suggests that restrictive zoning may be an effective tool to limit the availability of unhealthy foods while promoting the establishment of healthier food vendors.

Restrictive Zoning

In the past, local governments have used restrictive zoning as a land use tool to limit or prohibit the establishment of certain businesses in particular locations. For example,

alcohol retailers commonly face restrictive zoning because of the stigma and undesirable behaviors associated with these enterprises and the belief that their availability is positively linked to crime and violence (Ashe et al. 2003). Limiting these types of establishments is rationally related to local government's interest in reducing crime and promoting the general welfare of the community. The U.S. Supreme Court has held that negative "secondary effects" resulting from the location of adult theatres is an appropriate reason to invoke a restrictive zoning ordinance (*see City of Renton v. Playtime Theatres* (1986)).

Similarly, local government has an interest in promoting public health. If zoning restrictions for fast-food restaurants can positively change the food environment and decrease excess calorie consumption amongst local residents, then there is a potential to significantly improve the community health and, thus, relate fast-food zoning restrictions to a legitimate government purpose.

At this point, a zoning ordinance that effectively prohibits new fast-food establishments in a community *based on public health concerns* is a relatively new and innovative city planning objective. Policymakers in Los Angeles, for example, recently experimented with restrictive zoning to improve the city's food environment. In July 2008, the City Council voted to place a one-year moratorium on new fast-food restaurants in South Los Angeles where the local media reported that

the density of fast-food restaurants was far higher than in the rest of the city (Sturm & Cohen 2009). The moratorium was the first of its kind based entirely on public health concerns. Other localities, such as Calistoga, California, certain districts in San Francisco, California, and Warner, New Hampshire, use restrictive zoning for non-health reasons, focusing instead on aesthetic or economic concerns. These communities restrict fast-food or formula restaurants as a way to preserve the unique qualities of the town and/or to encourage local business growth (Maier et al. 2005a).

Arguments against Restrictive Zoning

Limiting the supply of inexpensive food choices in a particular community could place a larger burden on low-income individuals and families. This would most certainly be the case if more expensive food vendors or no vendors at all replaced fast-food restaurants in a certain market.

Another argument against restrictive zoning is that fast-food consumption is not the only contributor to obesity and, thus, limiting one source of food may not have the intended effect of reducing obesity. The effectiveness of the one-year moratorium on new fast-food restaurants in South Los Angeles, for example, is still under scrutiny, particularly as some researchers argue that the moratorium was based on questionable premises (Sturm & Cohen 2009). While policymakers and the media argued that South Los Angeles had an “over

concentration” of fast-food restaurants, researchers found that fast-food restaurant density per capita in South Los Angeles was no greater than in other parts of the city. Moreover, interventions other than restricting fast-food restaurant entry into the market, such as menu calorie labeling have been suggested as better approaches to reducing obesity (Sturm & Cohen 2009).

Also, limiting access to fast food may not necessarily improve residents’ consumption choices in affected communities. Consumer demand may account for the variation in fast-food restaurant density across communities suggesting that consumer demand drives consumption choices and not the density of fast-food restaurants in a particular community (see Moreland et al. 2006). These concerns suggest that the effort to curb the availability of unhealthy foods by limiting fast-food establishments may not have a significant effect on consumption and the prevalence of obesity.

Implementing a restrictive zoning policy for fast-food restaurants could also be complicated by the fact that “[t]here is little consensus about the definition of fast food...” (Currie et al. 2009). Most Americans agree, for example, that recognizable chains like McDonald’s and Wendy’s serve fast food but no consensus exists about whether millions of locally-owned food vendors throughout the U.S. are fast-food establishments. The National Restaurant Association reports that 7 out of 10 eating and drinking establishments in the U.S. are single operation establishments

(National Restaurant Association 2012), many of which could potentially be categorized as fast-food restaurants depending on the definition of “fast food.”

In the end, the number of fast-food restaurant locations varies depending on the definition of fast food used as well as the organization doing the counting. An *American Journal of Public Health* study reported that there were over 280,000 U.S. fast food restaurant locations in 2004 (Austin et al. 2005). The U.S. Department of Agriculture reports that there were approximately 221,000 fast-food restaurants in 2008 and nearly 5,700 fast-food restaurants in Virginia (USDA 2012).

The U.S. Bureau of Labor Statistics reports that the food and beverage industry employed over 10 million people in 2010; many of whom worked at fast-food establishments (Austin et al. 2005; US BLS 2012). In Virginia, eating and drinking establishments employ over 340,000 people, representing 9% of the workforce in Virginia (National Restaurant Association 2012). As local policymakers consider restrictive zoning policies barring or limiting fast-food restaurants, they will need to carefully consider the definition of “fast food” and whether the zoning restrictions could have a negative impact on local entrepreneurship and job creation.

Restrictive Zoning in Virginia

Local governments in states that operate under Dillon’s Rule, like Virginia, potentially face difficult

legal challenges to zoning ordinances that restrict fast-food restaurants because these states can “exercise only expressly delegated zoning power” (Diller & Graff 2011).

The Virginia Code is unclear about restrictive zoning of fast-food restaurants based on public health concerns. On the one hand, the statute allows localities to zone but requires that “all zoning regulations shall be uniform for each class or kind of buildings and uses throughout each district” (§ 15.2-2282). This language implies that it may be difficult to single out fast-food restaurants for restrictive zoning. While local government officials can designate specific sections of their city or county as residential, commercial, industrial, or mixed-use areas, policymakers may have difficulty designating an area as commercial and allowing for some types of restaurants but disallowing restaurants that serve fast food.

On the other hand, the Virginia Code appears to allow zoning restrictions based on public health concerns. Specifically, the statute requires local planning commissions to adopt a comprehensive plan for the “physical development” of the community. This comprehensive plan is meant to guide development to “best promote the health, safety, morals, order, convenience, prosperity, and general welfare of the inhabitants” (§ 15.2-2223). At this point, no Virginia locality has a zoning ordinance based on the type of food sold at an establishment.

State and local governments can encourage healthy food vendors, such as grocery stores and farmers' markets, to locate in areas that lack access to healthy foods.

Healthy Food Enterprise Zones

In contrast to restricting vendors of unhealthy food in a given locality, state and local governments can encourage healthy food vendors, such as grocery stores and farmers' markets, to locate in areas that lack access to healthy foods. Specifically, policymakers could designate certain areas in a community "healthy food enterprise zones" that would benefit from an increase in healthy food vendors and provide vendors with incentives to locate in those areas. Incentives might include tax reductions or exemptions, providing capital to small grocery stores for healthier food purchases and better storage systems, or allowing more flexible zoning requirements (Bassford et al. 2010; Karpyn et al. 2010).

An area or community where residents lack sufficient access to healthy food is described as a "food desert." While policymakers and researchers may use different criteria to identify food deserts, they generally acknowledge that certain communities, typically low-income, minority neighborhoods in the U.S., may suffer from diminished access to affordable, healthy food (Azuma et al. 2010; Walker et al. 2010; USDA 2009; Block et al. 2004). The economic literature generally supports the notion that the food environment can have an effect on obesity and BMI scores. A 2006 study, for example, found that a distance greater than 1¾ miles to a grocery store "was an independent predictor for a BMI increase of approximately 0.775 units (4.6 lbs.

for a 140-lb, 5'5" person)" (Inagami et al. 2006). Another study found that the "presence of supermarkets was associated with a lower prevalence of overweight, obesity, and hypertension" (Morland et al. 2006).

Research on the prevalence, causes, and consequences of food deserts has grown in recent years. The 2008 Food, Conservation, and Energy Act directed the U.S. Secretary of Health and Human Services to conduct a study on the incidence and characteristics of food deserts in the U.S. The statute also provided that the study include recommendations "for addressing the causes and effects of food deserts through measures that include (a) community and economic development initiatives; [and] (b) incentives for retail food market development, including supermarkets, small grocery stores, and farmers' markets" (7 U.S.C.A. 8701).

The 2009 U.S. Department of Agriculture report, "Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences," found that 2.3 million households "live more than a mile from a supermarket and do not have access to a vehicle." Nearly 12 million low-income Americans live in low-income areas more than one mile from a supermarket. The USDA report notes that supermarkets offer a greater variety of fresh and healthy foods at lower prices than the more common convenience stores present in low-income neighborhoods.

The purpose of a healthy food enterprise zone would be to attract larger supermarkets to areas with limited access to nutritious food and to provide incentives to smaller grocery and convenience stores to provide more fresh produce, vegetables, lean meat, and whole wheat products (Rudd Center 2008). The hope is that healthy food enterprise zones will increase access to healthy foods, thereby improving nutrition while also stimulating the local economy.

Examples and Potential Effectiveness of Healthy Food Enterprise Zones

In 2004, the Commonwealth of Pennsylvania in collaboration with The Reinvestment Fund (TRF), The Food Trust, and the Urban Affairs Coalition (UAC) launched the Pennsylvania Fresh Food Financing Initiative (FFFI) in response to two initial concerns: 1) access to supermarkets in low-income, minority neighborhoods in Philadelphia, which had the second lowest number of supermarkets per capita of major cities in the U.S., and 2) “growing rates of obesity, heart disease, cancer, and other diet-related diseases” including diabetes (The Food Trust 2012a; Karpyn et al. 2010; TRF 2010). One goal of FFFI was to “remove financing obstacles and lower operating barriers for supermarkets in poor communities” (TRF 2010). The Reinvestment Fund, a community development investment group specializing in neighborhood revitalization, provided over \$120 million in funds for, among other things, loans and grants for fresh-

food retailers who chose to relocate or improve their fresh food offerings (TRF 2010).

FFFI succeeded in opening 88 fresh food retailers in distressed communities in Pennsylvania. These food retailers supplied or preserved more than 5,000 jobs and improved access to a variety of fresh foods at lower cost to over 500,000 Pennsylvania residents (The Food Trust 2012a).

The success of FFFI inspired other state and city-level initiatives in New York, Illinois, and New Orleans (Karpyn et al. 2010). In addition, the Food Trust is beginning to conduct similar efforts in New Jersey, Colorado, Massachusetts, Maryland, Mississippi, Georgia, Tennessee, Texas, Arizona, and Minnesota (The Food Trust 2012b).

Like the Pennsylvania FFFI, the New York Healthy Food and Healthy Communities Fund (HFHC) is a statewide program that offers financial assistance to healthy food retailers in underserved markets defined as a “low- or moderate-income census tract” and “a census tract with below average food market density” (LIIF 2012). HFHC provides loans and grants to retailers to open, improve, and/or expand their stores.

The New York HFHC’s program manager, Katie Scallon, reports that the program is still in its early stages but to date has provided financing for eight healthy food retail projects throughout the state and has increased access to healthy food for an estimated 36,000 people and

provided over 250 permanent jobs (Scallon 2012).

In New Orleans, residents faced particular hurdles regarding access to healthy foods following the destruction left behind by Hurricanes Katrina and Rita. Orleans Parish, in partnership with HOPE Enterprise Corporation and the Food Trust, created the Fresh Food Retailers Initiative program to provide loans and financial assistance to healthy food retailers wanting to open, renovate, or expand in low-income, underserved neighborhoods (Hope Enterprise Corporation 2012; City of New Orleans 2011). The City of New Orleans contributed \$7 million from a federal block grant for community rebuilding which was matched by HOPE Enterprise Corporation. These funds were used to provide financial incentive for healthy food retailers to locate in distressed communities.

Programs like those in New York and New Orleans were established to increase residents' access to affordable, nutritious food. Two studies lend support to initiatives aimed at incentivizing fresh-food retailers to locate in food deserts or other areas lacking supermarkets (Larsen & Gilliland 2009; Morland et al. 2002). Larsen and Gilliland (2009) found that the opening of a farmers' market in the Old East "food desert" in London, England had a substantial effect on food prices. Three years after the opening of the farmers' market, the price of a healthy food basket² in Old East was 12% less than before the opening of the market and residents had better

access to healthy food items, such as broccoli, green grapes, and celery.

² Items in a healthy food basket included fresh and canned fruits and vegetable, bread, cheese, and various proteins.

Lower prices for healthy foods mean that consumers have a greater ability to purchase healthy food items.

In another study, Morland et al. (2002) found that the presence of a supermarket in a census tract was highly correlated with healthier food consumption among residents. For each additional supermarket located in a census tract, black residents reported a 32% increase in fruit and vegetable consumption. For white residents, "the presence of at least one supermarket was associated with an 11% increase in meeting dietary requirements for fruits and vegetables." If incentive programs can encourage healthy food retailers to open or expand into food-depressed areas, then healthy food enterprise zones can improve consumption choices in the affected population and improve public health.

Arguments Against Healthy Food Enterprise Zones

The main disadvantages of a healthy food enterprise zone are the costs required to offer incentives and the not yet proven link to the reduction of obesity. Tax breaks and rebates can substantially reduce tax revenue with little return on investment.

The Pennsylvania Fresh Food Financing Initiative was started with a \$120 million grant from The

Creating healthy food enterprise zones may be a first step to improve food environments and change the trend in nationwide obesity rates.

Reinvestment Fund and \$30 million in taxpayer funds from the state. FFFI has created or preserved over 5,000 jobs which translates into approximately \$30,000 per job. While the FFFI has also increased access to healthy food for over 500,000 Pennsylvanians (The Food Trust 2012a), more research is needed to determine whether increased access has made a significant impact on obesity rates in Pennsylvania.

Similarly, New Orleans contributed over \$7 million to finance its Fresh Food Retail Incentive Program (City of New Orleans 2011), and there is little evidence to indicate its success in improving health outcomes among New Orleans residents. Of course for both initiatives, evidence of success may be difficult to measure and may occur years into the future.

Costs of offering healthy food retailer incentives may be offset by private donations from organizations like The Reinvestment Fund or Hope Enterprise Corporation or from federal grants, but any economic development program will require a loss in tax revenue to provide financial incentives.

Creating healthy food enterprise zones may be a first step or part of an integrated effort to improve food environments and reverse the trend in nationwide obesity rates. However, improving access to healthy food may not directly lead to better consumption choices, and strategies to improve the local food environment will most likely need to be coupled with health education

and physical activity initiatives (CDC 2011b).

Enterprise Zones in Virginia

Many state and local governments, Virginia included, engage in commercial or enterprise development initiatives aimed at attracting businesses to their states or communities. These initiatives can include tax incentives, improvement rebates, or simply rezoning to allow for greater commercial or mixed-use development.

Williamsburg, Virginia, for example, provides for an Arts and Cultural District in its municipal code. The city manager can grant a qualified arts business³ financial incentives to locate in the Williamsburg Arts District. Incentives include a professional and occupational tax rebate, sales tax benefit, and a zoning and building fee exemption (City of Williamsburg 2012).

³A qualified arts business is defined as:

“(1) A business for profit or not-for-profit organization that presents live performances of theatre, dance, music, or other imaginative work and/or produces or exhibits physical works created by, or under the direction of one or more artists, which are intended for unique production or limited reproduction. Museums or historic sites, the primary mission of which is education, history, or historic preservation, shall also qualify as arts and culture organizations.

(2) A creative economy business” (City of Williamsburg 2012).

As one of its incentive programs, Richmond’s Economic and Community Development Department encourages revitalization and a return to economic viability in economically depressed districts through the Commercial Area Revitalization Effort (CARE).

Research suggests that obesity has a more substantial effect on the prevalence of chronic illness and individual medical expenditures than does heavy smoking and problem drinking.

CARE offers exterior and interior rehabilitation rebates, security improvement rebates, sprinkler system rebates, and low-rate leasehold improvement loans (Richmond 2012).

Similarly, the Economic Development Department in Virginia Beach offers financial incentives, through its Economic Development Investment Program, to businesses that are locating or expanding in the city which will create new jobs and investment opportunities in Virginia Beach (Virginia Beach 2011).

The Commonwealth of Virginia also offers a multitude of statewide incentive programs to attract new businesses or expand existing enterprises for the purpose of creating jobs, increasing capital investment, and encouraging commercial growth in technology and clean energy sectors (Virginia Economic Development Partnership 2011). Incentives include, among other things, tax credits, tax exemptions, and road and rail access programs. Virginia also makes use of the following designated zones: enterprise, technology, foreign trade, and defense production.

A healthy food enterprise zone would employ similar incentives to attract supermarkets, grocery stores, and farmers' markets to designated areas where access to affordable, healthy food is limited. Incentive programs like the ones used in Williamsburg, Richmond, and Virginia Beach can be used as models for establishing healthy food enterprise zones in

Virginia's food distressed communities.

Conclusions

Research suggests that obesity has a more substantial effect on the prevalence of chronic illness and increased individual medical expenditures than does heavy smoking and problem drinking (Sturm 2002), which have been regularly addressed by federal, state, and local laws. Furthermore, obesity threatens a larger percentage of the adult population (36%) (CDC 2012a) than does smoking (19%) (CDC 2012c) or abusive alcohol consumption (15% adults reportedly binge drink) (CDC 2012e). Obesity rates have also risen drastically over the past 30 years compared to decreasing rates of smoking. Given the severe burden obesity places on government healthcare funding and the associated adverse impact on the health of a large percentage of Americans, policymakers continue to search for solutions.

To address obesity adequately, policymakers should most likely consider an integrated response that addresses consumption patterns, food accessibility, and physical activity (Baker 2008; Ashe et al. 2007). The CDC recommends that "for maximum population impact, the focus should be on strategies that alter the food and physical activity environments in places where persons live, learn, work, play, and pray" (CDC 2011b).

This brief offers an analysis of three methods by which state and local

governments could influence their local food environment: soda taxes and two zoning options (restrictive zoning and healthy food enterprise zones). Soda taxes are meant to reduce consumption of high-calorie beverages. In Virginia, significant legal challenges exist to implementing a soda tax at the local level because of limited state delegated authority to tax. Virginia has a statewide excise tax on soda which could be increased or expanded to more effectively target consumers and change consumption choices. However, many researchers question the effectiveness of a soda tax to reduce overall calorie consumption. If consumers reduce calorie consumption from soda then they may increase calorie consumption from other sources.

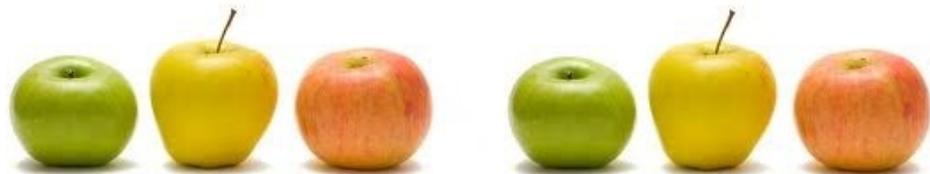
Some researchers have found that fast food consumption and restaurant density is positively correlated with higher rates of overweight and obesity. However, significant legal challenges may exist to prevent zoning restrictions against fast-food restaurants because the Virginia Code requires uniformity for “each class or kind of building” which leaves little room to disallow a

particular type of restaurant while allowing for others. Currently, no locality in Virginia restricts fast-food restaurants based on public health concerns. Also, economic arguments against restrictive zoning are compelling. Restrictive zoning specifically aimed at fast-food establishments could hinder economic growth and reduce inexpensive food choices for low-income communities — important considerations in times of economic distress.

Healthy food enterprise zones offer an alternative to restrictive zoning that incentivizes healthy food retailers to open or expand their operations in communities that lack access to healthy food. Local and state governments can implement incentive programs, similar to current economic incentive programs, to attract healthy food vendors to their communities. Healthy food enterprise zones may require significant costs in the form of tax incentives and rebates. However, policymakers should assess whether these costs will be offset by improvements in the local food environment and improvements in public health.

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Taxes and Zoning to Address Obesity

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