Why is the Controller looking into the impact of the Beverage Tax on Philadelphia’s grocery stores?

As Philadelphia’s fiscal watchdog, Controller Alan L. Butkovitz has made the impact of tax policy on the economic and fiscal health of the City a hallmark of his tenure in the office. In the interest of assessing the actual impact of the Philadelphia Beverage Tax on the grocery industry in its early stages, the Controller’s office performed this analysis.  

Data and Methodology

The Controller requested and received Q1 and Q2 sales data from both Brown’s Superstores and Fresh Grocer for 2016 and 2017. Together, Brown’s Superstores and Fresh Grocer represent approximately one-third of supermarket sales in Philadelphia.

The Controller’s Office used this data to perform a difference in differences (DID) analysis which is a statistical technique used in econometrics and quantitative research in the social sciences. The study analyzed the differential effect of the beverage tax on a treatment group (Stores located inside Philadelphia City) versus a control group (suburban stores).

Findings

- In the first six months of 2017, total Philadelphia supermarket sales at ShopRite and Fresh Grocer fell 13%.
- On a per-store basis, the average sales for the period decreased from $21.1M to $18.3M in Philadelphia stores, an average decrease of $2.75M.
- In contrast, during the same period, sales for suburban stores increased 2%. On a per store basis, that translates to a $364K increase.
- Prior to the tax, an average Philadelphia grocery store earned $330K more revenue each month, than an average suburban store. After the tax, an average Philadelphia store earned $191K less than its suburban peers.
- In the first six months of 2017, total Philadelphia sweetened beverage sales in ShopRite and Fresh Grocer fell 57%. On a per-store basis, the average sales for the period decreased from $1.2M to $0.5M, an average decrease of $0.6M.
- In suburban stores, sweetened beverage sales grew by 14% ($0.13M), from an average of $0.99M per store to $1.13M per store.
- In sum, based on the available data, the Controller finds that the Philadelphia Beverage Tax caused the City’s average grocery sales - which historically exceeded average sales in suburban stores - to fall behind.
- The tax also caused the customer count in City stores to fall behind suburban ones by 10,275 per store per month.
- Beyond that, the beverage tax caused SNAP sales in city stores to drop back by $171,766 - on average per store on a monthly basis.

1 Since certified tax returns for 2017 will not be filed until April 2018, there is no way to independently verify the veracity of the data set.
Recommendations

To ensure adequate oversight of the impact of the Philadelphia Beverage Tax on the vitally important grocery industry, the Controller recommends the following:

- Quarterly sampling of sales data from major supermarkets
- Annual analysis of Wage Tax and BIRT data for the grocery industry by the Controller’s Office
- Frequent vital engaging community focus groups, lead by community leaders and nonprofit organizations in coordination with the controller’s office, to ensure the public’s voice pertaining the tax impact is heard.
- Because improving the lives of impoverished citizens is crucial for a healthy growing society, a detailed study to illustrate the impact of the tax on SNAP sales, would be very useful. This study can account for the change in SNAP eligibility criteria along with other factors suspected to impact SNAP sales.
Overview

During the 2010 State of the Union Address, President Barack Obama recognized Philadelphia’s Jeff Brown, of Brown’s SuperStores, for his role in helping to bring healthy, fresh foods to former “food deserts” in low-income neighborhoods. The Fresh Food Financing Initiative developed by Brown and former PA State Rep (now Congressman) Dwight Evans became the template for Obama’s Healthy Food Financing Initiative, a $400 million federal program aimed at combating food deserts. Recommendations put forth in a 2004 report from the Food Trust were achieving fruition.

Though Brown and other socially conscious grocery owners like Pat Burns of Fresh Grocer have figured out how to ‘do well while doing good,’ as the saying goes, even in the best of times supermarkets are a relatively low-margin business. With the rapid growth of online shopping, grocery delivery services, and so forth, margins are even tighter.

Thus, when the Kenney Administration proposed the Philadelphia Beverage Tax – a 1.5-cent-per-ounce tax on all sweetened beverages – grocers warned of a severe negative impact to their business model. They warned that such a significant tax would not only change consumption of the product in question, sweetened beverages, but would have collateral impacts on all groceries. Consumers would change shopping patterns and shift their dollars to suburban stores, particularly those close to county boundaries.

According to the available data, the tax appears in fact to have had substantial impact, per the figure below:

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In the first six months of 2017, total Philadelphia supermarket sales at ShopRite and Fresh Grocer fell 13%. On a per-store basis, the average sales for the period decreased from $21.1M to $18.3M in Philadelphia stores, an average decrease of $2.75M. In contrast, during the same period, sales for suburban stores increased by 2%. On a per store basis, that translates to a $364K increase. Prior to the tax, an average Philadelphia grocery store earned $330K more revenue each month, than an average suburban store. After the tax, an average Philadelphia store earned $191K less than its suburban peers. Should these sharp decreases in revenues at Philadelphia stores continue, operators may have little choice but to cut staff or even consider closing stores.

**Sweetened Beverage Sales**

In the first six months of 2017, total sweetened beverage sales in Philadelphia ShopRites and Fresh Grocers fell 57%. On a per-store basis, the average sales for the period decreased from $1.2M to $0.5M, an average decrease of $0.6M. In suburban stores, sweetened beverage sales grew by 14% ($0.13M), from an average of $0.99M per store to $1.13M per store. This is consistent with findings reported by Catalina, a market research firm that based its findings on data from loyalty card programs; this report found a 55% decrease in sweetened beverage sales at franchised supermarkets and drug stores and a
significant increase in sales outside the City’s borders.⁴ A study by an economist at Saint Joseph’s University found that monthly sales in City stores decreased by about $300,000 due to the soda tax.⁵

Additional corroboration of changing consumption patterns is provided by survey data from a study done by the Community College of Philadelphia in April 2017, which found that 46% of sweetened beverage consumers changed their consumption habits after the tax, that is, they consumed fewer taxable beverages or switched to cheaper brands. About one-third (32%) reported changing their broader shopping patterns by going outside the City.⁶

SNAP Sales

A study conducted by the United States Department of Agriculture revealed interesting facts about the components of sales to participants in the federal government’s Supplemental Nutrition Assistance Program (SNAP). The findings showed that the No. 1 purchases by SNAP households are soft drinks, which accounted for 5 percent of the dollars they spent on food.⁷ Thus, a real concern that should be taken into consideration while studying the impact of beverage tax on SNAP sales is - will SNAP

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consumers change their purchasing behavior, i.e., buy less sugary drinks, or they will just shop at the closest suburban stores to avoid the tax?

A subsequent question might be to analyse the availability and affordability of transportation for SNAP customers to shop at suburban stores. If transportation is unavailable or unaffordable, then the Beverage Tax might exacerbate the food desert problem.

Another factor contributing to the decline in SNAP sales in City stores is the change in regulations of eligibility criteria. There is evidence of a 4% decline in SNAP sales from 2016 to 2017 due to new regulations promulgated by the Commonwealth of PA.

The figure below depicts the Impact of sweet beverage tax on SNAP sales. Yet, the change in regulation was not accounted for in this analysis.

Other Studies

Several studies have been completed on the soda tax since its implementation. Each of the studies draws on a different set of data, producing conclusions that diverge from the Controller’s findings to some degree. For example, the analysis of sweetened beverage sales performed by Catalina Marketing Group saw a decline of 55%, whereas the ShopRite and Fresh Grocer sales data showed a 57% decline. However, directionally, most studies concluded that some, though not all, customers have changed their behavior in response to the tax, resulting in decreased sales for supermarkets, convenience stores and other retailers selling sweetened beverages. The following is a detailed review of studies the studies,

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along with an explanation of how their conclusions differ from the City Controller, in chronological order.

**The Sweetened Beverage Tax: A Citywide Survey of Attitudes and Behavior (Community College of Philadelphia, April 17, 2017)**

Students at the Community College of Philadelphia, under the direction of professor Richard Frei, completed a survey of 1,320 people (ages 14 or older), in an effort to understand the impact of the tax on consumer behavior. The survey was distributed online via SurveyMonkey, as well as using face-to-face administration. Approximately half of the results came from online responses, and the other half. The demographics varied somewhat from Philadelphia’s population; 65% of those surveyed were female, and were younger and more educated than Philadelphia’s average.

According to the study, “32 percent said they have left the city to buy sweetened beverages. Most of those who made more than $50,000 a year or lived closer to the edges of the city.” Additionally, 46% of those surveyed reduced their consumption of taxed drinks. The study also found that respondents making over $50,000 and respondents living in zip codes on the Philadelphia border were likely to purchase sweetened beverages outside of the city. On the other hand, respondents making less than $50,000, were more likely to reduce their beverage purchases.

This data was collected ten weeks after the soda tax went into effect, so it should be noted that consumer behavior may shift over time. For example, some individuals may return to established patterns of behavior.

As a study of consumer behavior, not spending, these findings cannot be used directly to verify the Controller’s findings. However, the finding that consumers are spending less on soda overall, and, in many cases, less in Philadelphia stores specifically, mirrors the findings from the supermarkets’ sales data.

**Wage Tax Study (City of Philadelphia, June 12, 2017)**

In June, City officials reported that despite the soda tax, “wage taxes paid by restaurant and beverage industry employers were up a total of 14 percent, to $23.4 million, compared with $20.5 million in first-quarter 2016.” City officials concluded that increasing wage tax receipts implied that the job losses reported by store and restaurant owners were inaccurate, or at least not representative of the entire industry.

However, it is important to note that wage taxes are paid by all Philadelphia residents, even if they work outside of the City. Additionally, chain stores report wage taxes for all of their locations as a lump sum,

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without separating out suburban locations that employ Philadelphia residents. Thus, wage tax revenues can increase both because Philadelphia jobs are growing, and because more Philadelphians are working at higher wage jobs in suburban areas. Because wage tax data lacks necessary detail to distinguish between these scenarios, one cannot conclude that a growing wage tax means there are no job losses within Philadelphia retailers.

Another obvious shortcoming of this study is the inability to distinguish between new and existing stores in the wage tax data. A higher-than-usual number of openings could artificially inflate wage tax numbers by adding new employees to the rolls. In other words, a large number of new openings could disguise jobs losses at existing stores.

Lastly, the Philadelphia Department of Revenue reports wage tax receipts on a monthly basis, by NAICS sector. According to their reports, while the wage tax for affected sectors did grow in Q1 of 2017, the growth was significantly slower than it was in Q1 of 2016.12

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<tr>
<th>Wage Tax Revenue by NAICS Sector (3rd Qtr. Wage Tax/1st Qtr. Calendar)</th>
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<tbody>
<tr>
<td>CYTD 2017</td>
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<tr>
<td>Food &amp; Beverage Products Manufacturing</td>
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<tr>
<td>Wholesale Trade</td>
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<tr>
<td>Retail Trade</td>
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<td>Restaurants</td>
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<td>Total</td>
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| Year-to-Year Percent Change | 1% | 13% | 5% |

Simply put, there is not enough data to discount the reported job losses. In order to conclusively establish the accuracy of the reports, one would need to review wage tax data for Philadelphia stores that have been opened prior to Q1 2016.

Although the City Controller did not analyze staffing levels and supermarkets, rapidly growing wage tax revenues would belie the claims that stores are experiencing a negative financial impact from the

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sweetened beverage tax. However, the wage tax does not provide sufficiently detailed information in order to effectively confirm or contradict the Controller’s findings.

**The Philadelphia Sugar Rush (Catalina, August 21, 2017)**

In August, Catalina, a marketing firm, looked at over 1,000 stores in order to assess the impact of the soda tax on local retail. The stores in the analysis included 45 stores in the center of Philadelphia, 76 stores immediately inside Philadelphia’s boundary; 66 stores outside of the city and 789 stores far removed from the city, to provide a baseline. Similar to the Controller, Catalina looked at franchised grocery stores, but it also added drug stores to the analysis. The firm found that carbonated soft drink sales fell by 55% in Philadelphia, but rose by 38% immediate outside of the border.

Catalina’s findings are very similar to the Controller’s conclusions. The differences are likely explained, first, by a different store mix. Catalina includes pharmacies, along with supermarkets. Second, while the Controller looked at every single sale within ShopRite and Fresh Grocer, the sales data collected by Catalina comes from loyalty cards, a program managed by the firm. In other words, every time someone uses a loyalty card, these sales are aggregated beyond the individual level and analyzed by the company. Since not all clients use loyalty cards, this could account for the discrepancy as well.

**Effect of the “Soda Tax” On Grocery Store Sales in Philadelphia (Saint Joseph’s University, September 5, 2017)**

Dr. John Stanton (Professor of Food Marketing) at Saint Joseph’s University published a study, of the effect of the soda tax, based on one supermarket chain with five stores in the city, and four stores outside. The study looked at four different time periods (November 2015, February 2016, November 2016 and February 2017) in order to control for seasonality and additional explanatory factors, such as the national trend of declining soda consumption.

The study found that while sales of artificially sweetened beverages between February 2016 and November 2015 fell an average of $11,797 per store, sales fell $93,657 per store one year later (November 2016 to February 2017), a difference of $81,860. Outside of Philadelphia, sweetened beverage sales increased, countering the national trend of falling soda sales. Between November 2015 and February 2016, sweetened beverage sales fell by $24,739 per store. The following year (November 2016 to February 2017), the trend was reversed and sweetened beverage sales grew by $27,843.14

In terms of total sales, Philadelphia saw a decrease as well. During the pre-tax period (November 2015 to February 2016), Philadelphia stores lost $340,333 per store, and non-Philadelphia stores lost $503,597 on average per store. In other words, while both sets of supermarkets were struggling, Philadelphia stores were faring slightly better. During the after-tax period (November 2016 to February 2017), non-Philadelphia stores lost $420,683, whereas Philadelphia stores lost $329,649.

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2017), Philadelphia store losses grew to an average of $644,655 per store, while outside of Philadelphia stores’ average losses were decreased to $216,775.\textsuperscript{15}

Dr. Stanton’s study analyzed a different time period, and only one supermarket chain. However, the conclusions are similar to those of the Controller. Not only did sales of sweetened beverages in Philadelphia stores fall, which was expected, overall sales declined as well, as some consumers opted to shop outside of the city.

**Conclusions**

Based on the available data, the Controller finds that the Philadelphia Beverage Tax caused the City’s average grocery sales – which historically exceeded average sales in suburban stores – to fall behind. The majority of studies completed concurrently support these findings. If these losses continue, the tax could pose a real threat to the viability of grocery stores like Brown’s Super Stores, which play a vital role in the provision of healthy, fresh foods in underserved neighborhoods.

**Disclaimer**

The Controller considered verifying the results of the model for legitimacy, since it only used grocery stores data. One method of validation would have entailed looking at Business Income and Receipts Tax (BIRT) filings submitted by those grocery stores for the months January to June, 2017. According to the data provided by the two grocery chains, their BIRT for the first six months in 2017 should show a decline compared to 2016 figures. Unfortunately, BIRT returns are filed only annually, so the earliest verification will be in April 2018.

Additionally, the Controller considered validating the results using wage tax data. Assuming this data is accurate, the beverage tax would lower Philadelphia wage tax for Q1 and Q2 of 2017. Unfortunately, this was infeasible because the data to associate the work location - of an individual worker at the grocery stores - with where he/she is living, was unavailable, per the discussion on pp. 8 and 9 above.

\textsuperscript{15} \textit{Ibid.}