

***Calamari, Cocktails, and Cars: A Glimpse into
the District of Columbia's 10% Sales Tax***

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In the District of Columbia in 2015, a whopping \$361.46 million was generated by its 10% sales tax rate, which is one of five rates used to tax the retail sale of various goods and services in the city. This rate, commonly known as the “Restaurant Tax”, encompasses the sale of not only restaurant meals, but also other prepared foods, alcohol/liquor sales for on-premise consumption, and the renting of vehicles. With so much revenue generated by this tax rate (over 35% of total DC sales tax revenue), we set out to examine the business and economic trends affecting the city’s 10% sales tax collections.

To do so, we analyzed the annual sales tax receipts of all businesses in the city for all years from 2005 to 2015. Then, we isolated the top 100 taxpayers in the 10% tax rate during each year to conduct further analysis (further mention of the top 100 taxpayers refers to this group). In any year within the time frame studied, the top 100 taxpayers (out of approximately 15,000 total taxpaying businesses) accounted for between 36% and 49% of the total “Restaurant Tax” paid. Since such a small number of taxpayers accounted for nearly a majority of the 10% sales tax paid (between 36% and 49% in any given year), it is important to understand the underlying trends affecting this group due to their disproportionate impact on the tax as a whole.

Next, we assigned each of the top 100 taxpayers during each year to one of nine different industries: Fine Dining, Casual Dining, Fast-Casual, Fast Food, Food Service/Catering, Supermarket, Hotel, Transportation, and Other. Various restaurant taxpayers were sorted into the first four groups based on the cost of a meal and time needed for the meal to be served, with Fine Dining being the most expensive and time consuming, down to Fast Food, the least expensive and most rapidly served. The next two industries, “Food Service/Catering” corporations and “Supermarkets”, paid their share of the tax based off of their sales of prepared foods. Although “Hotels” have a separate 14.5% tax rate for their room bookings, the food served in their restaurants as well as food prepared for onsite events are taxed at the 10% rate, and therefore these sales compose the 7th category. Since the 10% tax rate also applies to the renting of vehicles and car sharing, “Transportation” companies constitute the 8th industry. Finally, although each corporation within the top 100 was thoroughly researched by our team, a few could not be placed into any of the eight aforementioned categories, and were relegated to the “Other” grouping. We then utilized these classifications to help draw general conclusions about the business outlook of the city as a whole. For example, we found that while there has been significant growth and development of the restaurant industry in the city, when we control for inflation for the top 100 taxpayers, many sectors actually see declining real revenues.

I. DC’s 10% Tax Rate: A Sector Analysis

First, we examined each of the top 100 taxpayers within the scope of their sectors in order to track the changes in each aggregate. Overall, we found that all but two of the sectors (excluding “Other”) increased their revenue from 2005 to 2015 (Table 1). Surprisingly, this growth was led by two of the more “unusual” sectors in the city’s “Restaurant Industry”: transportation and supermarkets. While comparatively small in 2005, these two sectors have grown tremendously, so that they outpace even Fast Food in sales tax revenue in 2015. While we aren’t too sure why car rental and car sharing services have done so well, especially since there are plenty of options to travel around DC, including taxis, the Metro, the Circulator bus, and many ridesharing options, this growth may suggest robust demand from 1) the city’s business sector; and 2) the city’s residents, who may rent vehicles for short

trips and excursions out of the city given the trend for a growing number of new residents to choose to forego car ownership.

The Top 100 10% Sales Taxpayers by Sector: 2005 & 2015			
Sector	Initial (2005)	Final (2015)	% Revenue Change
Transportation	\$2,017,209	\$9,124,661	352.34%
Supermarkets	\$1,297,512	\$4,332,546	233.91%
Fast-Casual	\$14,766,131	\$23,933,110	62.08%
Food Service/Catering	\$17,489,192	\$23,928,335	36.82%
Casual Dining	\$10,030,598	\$12,144,541	21.07%
Hotel	\$30,778,644	\$32,193,300	4.60%
Fine Dining	\$21,561,745	\$21,207,944	-1.64%
Other	\$8,280,369	\$2,402,024	-70.99%
Fast Food	\$18,591,613	\$4,236,807	-77.21%

Table 1

The two sectors that experienced negative revenue changes from 2005 to 2015 (again excluding “Other”) were Fine Dining and Fast Food. This finding may be the result of the growing number of city restaurant patrons becoming more health conscious and/or more price sensitive. Therefore, they are largely turning away from fast food, which is considered less healthy, and fine dining, which can cost up to hundreds of dollars per meal. These customers are likely then turning to restaurants in the middle of the “dining spectrum”, fueling growth in fast-casual and casual restaurants, which offer relatively healthy and cheap dining options.

As detailed in Figure 1, the largest taxpayers experienced very stagnant revenues. While in seven of the eleven years studied, Hotels, Food Service/Catering companies, and Fine Dining restaurants were the three largest sectors, these three classifications were largely stagnant, demonstrating very little growth or decline from 2005-2015.

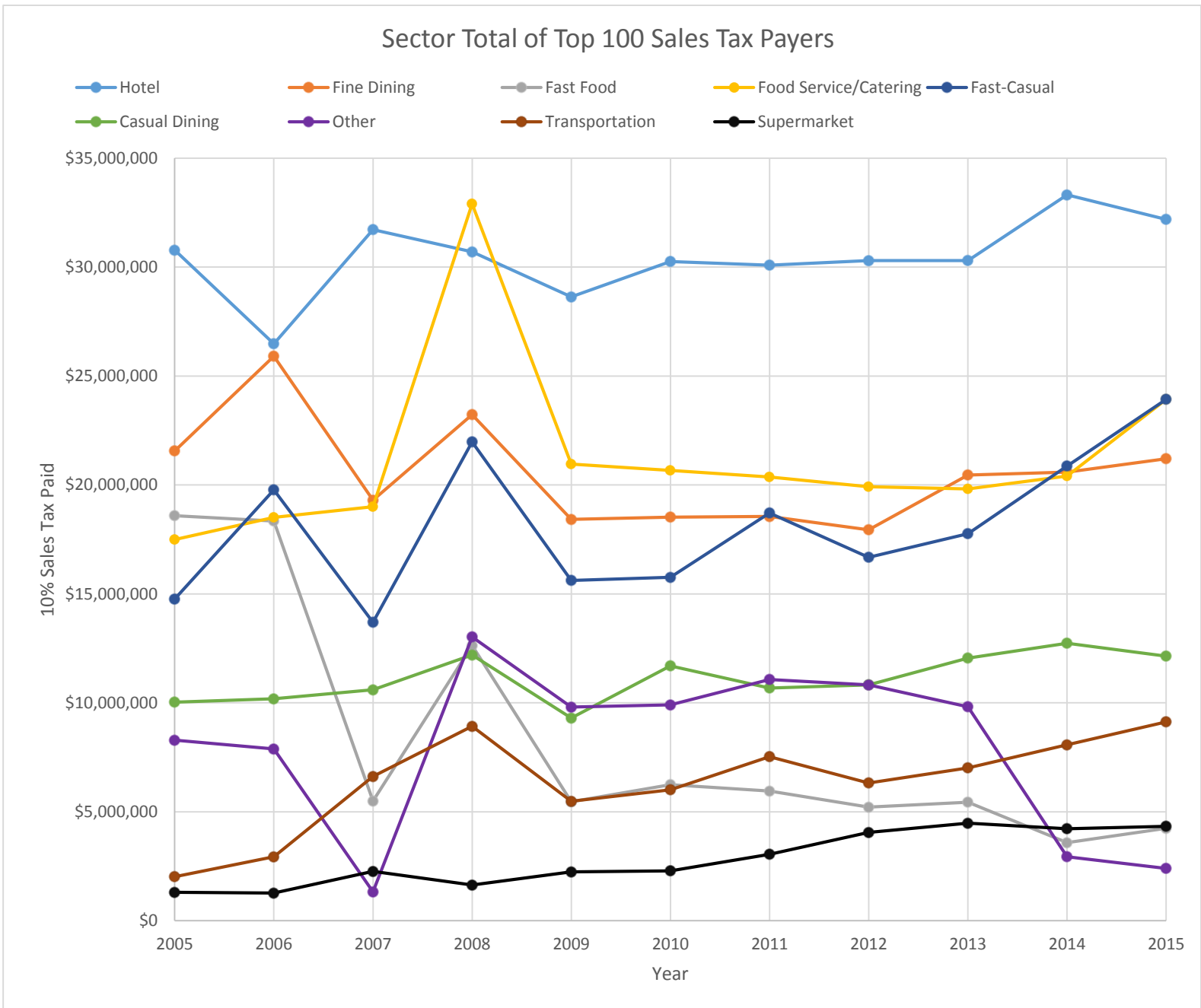


Figure 1

On the other hand, many of the smallest sectors are the fastest growing. As previously mentioned, two of the smallest sectors in 2005, transportation and supermarkets, lead the District in revenue growth. Moreover, casual dining has seen modest growth as it captures parts of the trickle down from fine dining restaurants as people seek less expensive eating options and fast food restaurants as people want more healthy food. Finally, although not a small sector, fast-casual restaurants have seen the greatest absolute growth of all industries, of close to \$10 million over the period studied. This sector features some of the most popular restaurants in DC, not only capturing a portion of the trickle down from other dining options and appealing to residents and commuters in the

“lunch crowd”, but also being sought out to a greater degree as a relatively cheap, fast, and healthy dinner option.

While all classifications except fast food and fine dining have increased revenue from 2005-2015, as displayed in Figure 2, there has been great turnover in the identities of the top hundred taxpayers. Of the top 100 taxpayers in 2005, only 45 of them remain in the top 100 in 2015, and only 22 of them have increased their revenue. Overall, the most stable sectors in the top 100 have been hotels, catering, and fast casual, retaining over 50% of taxpayers from 2005 to 2015, with over 25% of them having increased revenue during the same period. Similarly, although the transportation and supermarket sectors were very small in 2005, the few that were in the top 100 have done very well, along with the many other taxpayers in those categories that have entered into the top hundred more recently. The final three sectors, fine dining, fast food, and casual dining have experienced large amounts of turnover, with many taxpayers either shrinking operations or even shutting down completely. Even though casual dining has seen increased revenue overall, this increase is due largely to the newer, more successful restaurants that have entered the top hundred rather than those that were already present in 2005.



Figure 2

As previously noted, many sectors have experienced revenue growth, which should signal increased business and consumer activity in the city. However, the vast majority of the overall tax revenue increase instead came in the form of inflation.

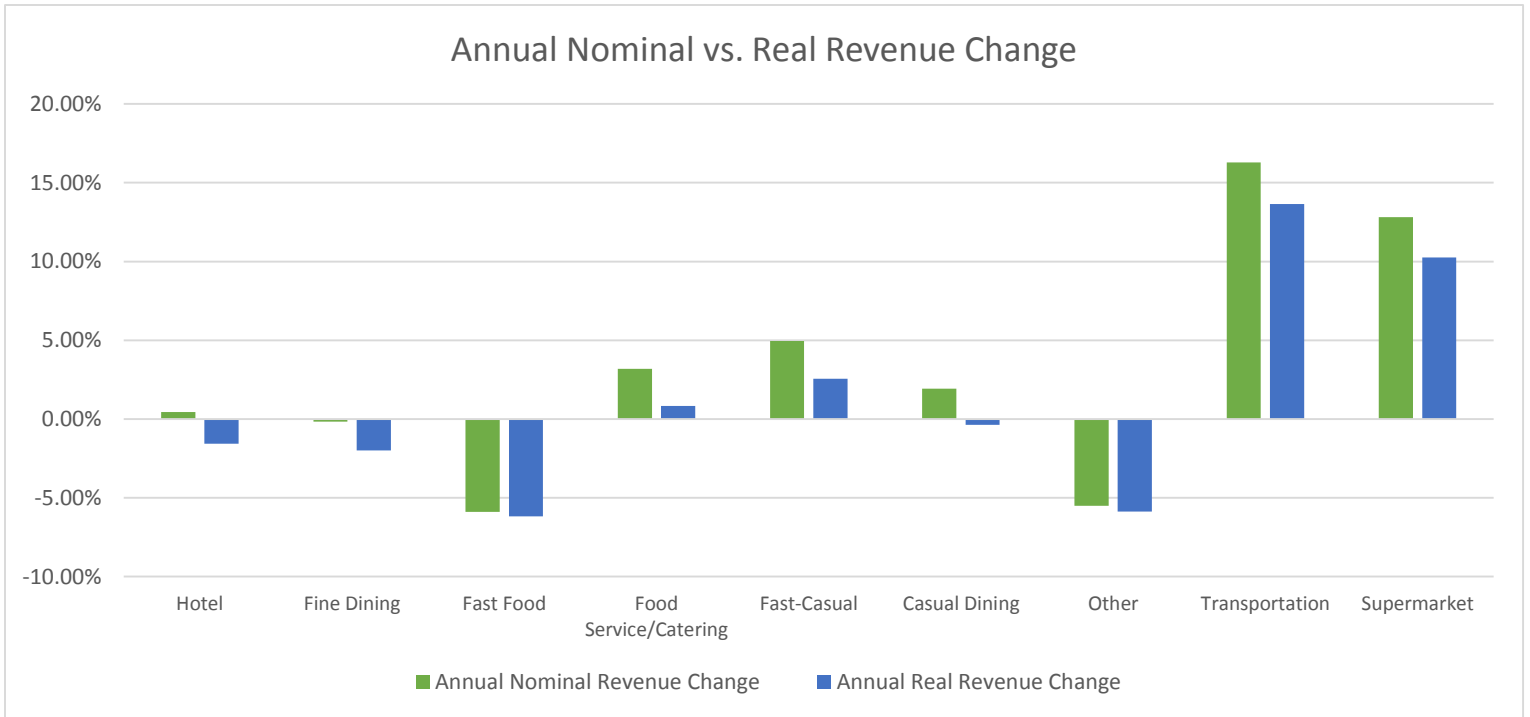


Figure 3

We see that when controlling figures for the DC Consumer Price Index, most sectors are not able to keep pace with inflation, with only four sectors able to do so (Figure 3). Of these four, only two (transportation and supermarkets) were able to increase revenue at a rate more than 3% faster than inflation, showing the difficulty most companies face while trying to achieve growth.

II. Business Size vs. Tax Impact

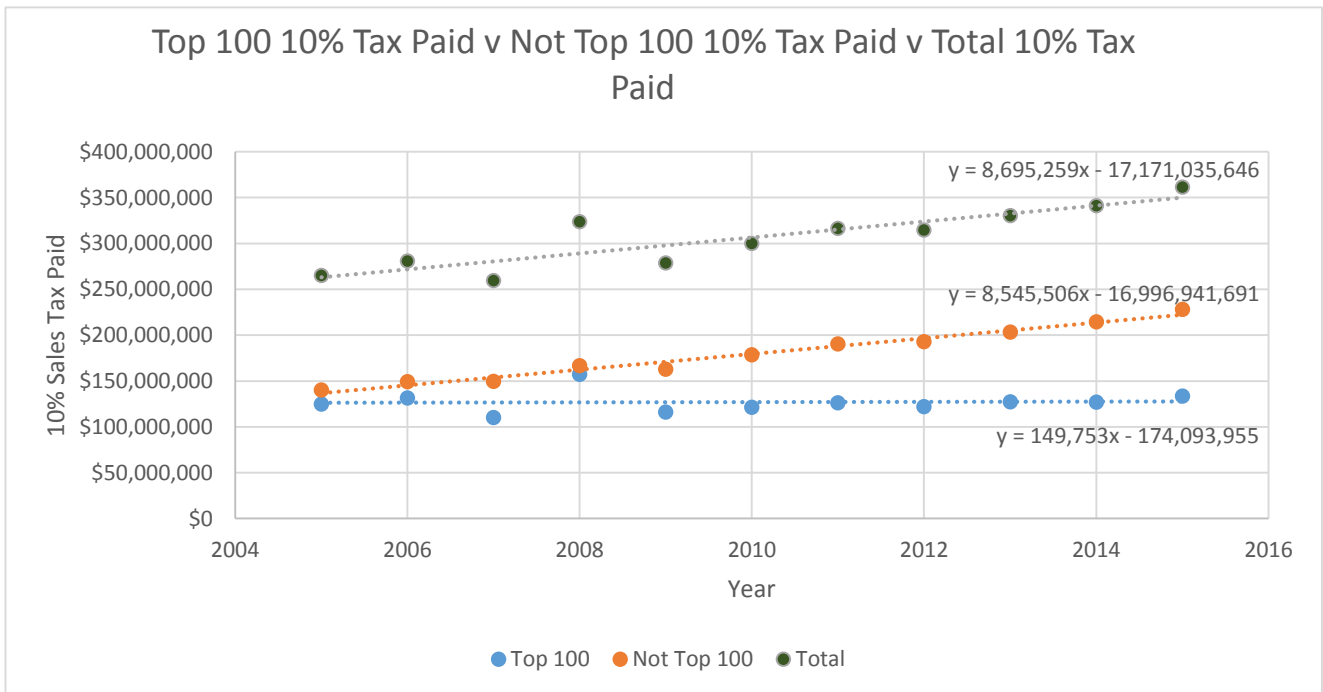


Figure 4

As seen in Figure 4, the total tax revenue collected from the top 100 taxpayers (Top 100) has essentially stayed the same over the past ten years. However, the total tax revenue collected from all the businesses in the District (Total) has been steadily increasing, along with the tax paid by companies outside of the top 100 (Not Top 100). A Regression Slope Hypothesis Test ($\alpha=.05$) finds that both the increase in total collections from the 10% tax rate and the increase in collections from taxpayers outside of the top 100 to be statistically significant ($p<.001$), and the relatively slight increase in collections from the top 100 taxpayers in the 10% sales tax rate to be statistically insignificant ($p=.904$) over the time period studied (2005-2015). Therefore, the overall increase in the tax paid, of almost \$9 million a year, is solely being fueled by increased payments outside the top 100.

To further investigate this phenomenon, we divided all taxpayers from 2005-2015 into quintiles to study the share of the total 10% tax generated by each quintile of taxpayers.

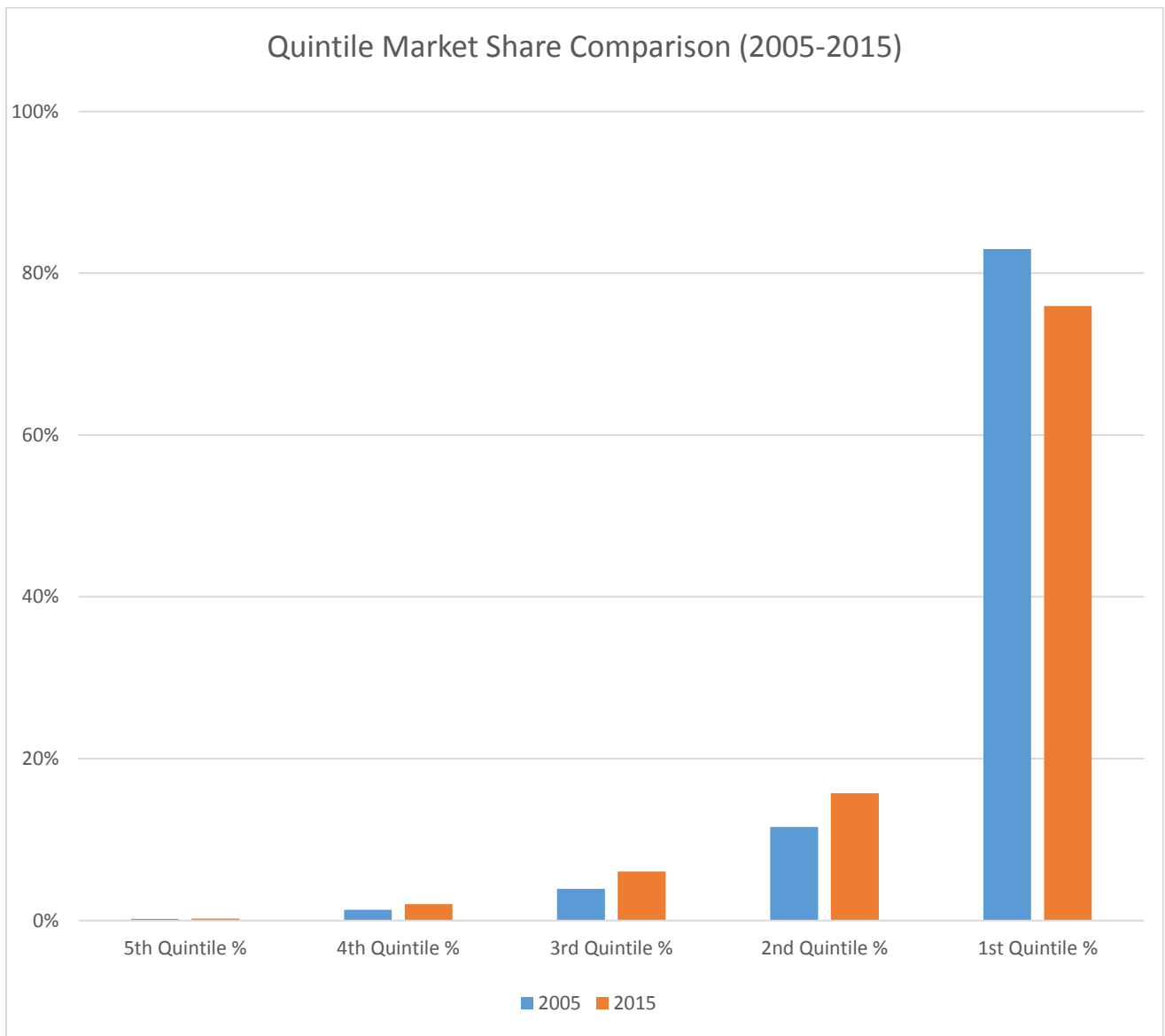


Figure 5

As displayed in Figure 5, the top quintile accounted for over 80% of the market share in 2005, while the lowest quintile accounted for a meager 0.2%. Even though in 2015 the top quintile still accounted for the lion’s share of the overall market share (76%), revenue is slowly being redistributed towards the lower quintiles over time, with the share of all four lower quintiles increasing from 2005 to 2015, suggesting an increasingly diverse and competitive marketplace in the city.

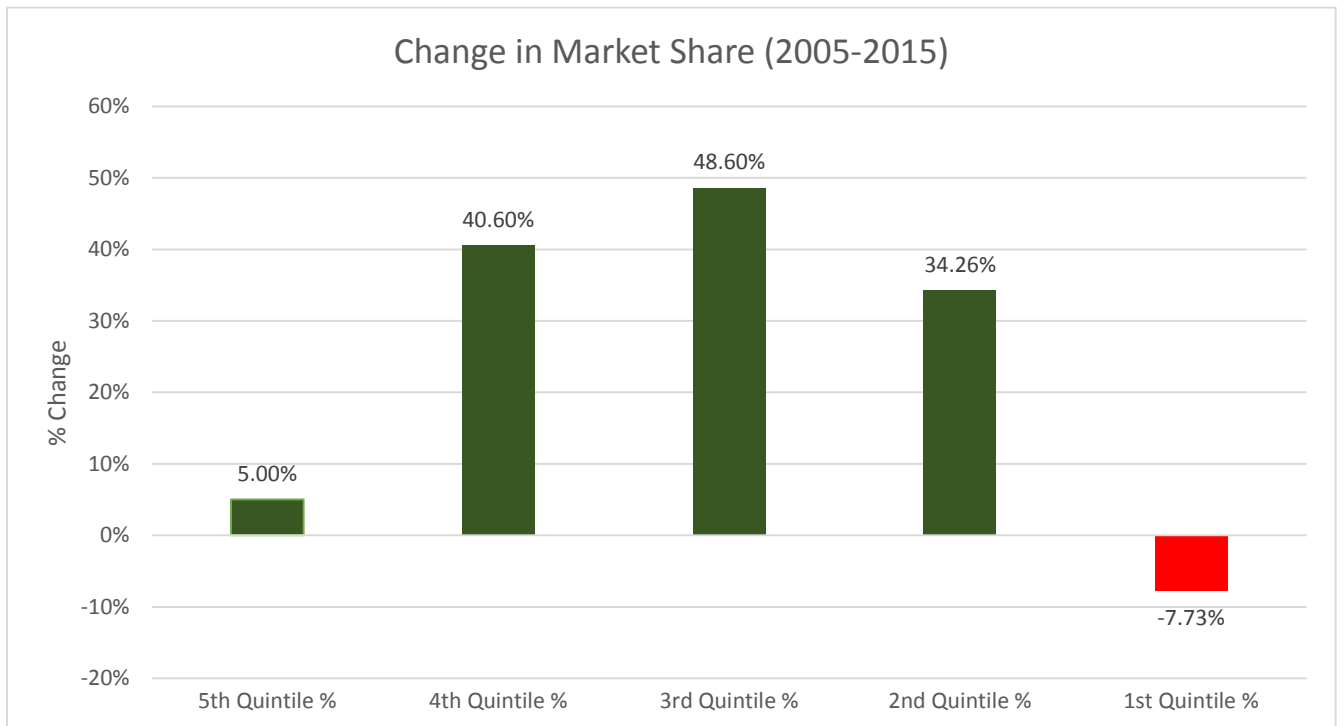


Figure 6

More clearly displayed in Figure 6, the vast majority of growth in sales tax receipts is visible in the middle three quintiles, which include taxpayers with liabilities that range from \$4,500 to \$150,000 in 10% sales tax in 2015. Each of these middle quintiles grew over 30% from their original market share, equating to \$80 million in total tax payment growth. Additionally, we see an 18.5% growth in the number of businesses filing a 10% sales tax within the city from 2005 to 2015, signaling a positive environment for small/mid-sized business development and growth.

III. Business vs. Household Tax Impact

Every day, hundreds of thousands of people commute into the nation’s capital, and many more are in the city on business trips, for leisure, and for other reasons. Therefore, unlike most taxes, such as the individual income tax and property tax, the 10% sales tax is not drawn entirely from District of Columbia residents. Rather, it stems from the entire District population at any given time, which during working hours is approximately 79% larger than the number of DC residents, according to the US Census Bureau as of 2015. Thus, we wanted to estimate the proportion of the tax falling upon business consumers compared to DC households.

To do so, we grouped four of the aforementioned categorizations as “Business”: Fine Dining, Hotels, Food Service/Catering, and Transportation, while we grouped another four as “Household”: Casual Dining, Fast-Casual, Fast Food, and Supermarkets. We defined the Business industry as sectors

where a majority of sales would likely stem from businesses and/or governmental organizations, while we defined the Household industry as sectors where the majority of sales would likely stem from individuals' retail purchases.

Business vs. Household Industry Comparison

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average
Business %	57.56%	56.24%	69.68%	60.91%	63.40%	62.18%	60.75%	61.02%	61.03%	65.02%	64.75%	62.05 %
Business #	58	54	70	59	68	65	65	64	62	66	66	63.36
Household %	35.80%	37.76%	29.12%	30.81%	28.14%	29.66%	30.47%	30.12%	31.25%	32.67%	33.45%	31.75%
Household #	34	37	28	33	27	31	31	31	32	30	31	31.36

N.B. - The business and household industry shares do not sum to 100% due to the presence of the "Other" sector

Figure 7

We found that among the top 100 taxpayers, on average, sales tax revenue generated by the business sector represented 62% of total sales, while the household sector only generated 32% of total sales. Since such a large proportion of the tax burden falls upon the business sector, it is clear that rather than individual purchases accounting for the majority of 10% tax revenue, the revenue is largely generated from business purchases of catering, hotel, car, and fine dining services. Since the 10% tax disproportionately affects the nonresidential population, the tax is successful in that it is able to generate revenue for the city while drawing a significant amount of money from non-residents.

Interestingly enough, in years where business sector shares increase and household sector shares decrease, total sales decrease, and vice versa (Figure 8). This is evident as the household sector share follows the same trend as the total 10% tax revenue, while the business sector share is a mirror image of the total 10% tax revenue. We believe this to be so as while the business sector has a relatively income inelastic demand, and can more easily weather recessions, the household sector is greatly dependent on economic expansion, as this enables citizens to have a greater disposable income to spend on dining rather than eating at home. For example, in 2007 and 2009, when the overall 10% tax revenue collected from the top 100 taxpayers decreased dramatically, the household sector share also greatly decreased. Since the Great Recession ended in 2009, however, the household sector has been bouncing back, pushing the overall 10% tax revenue upwards. Therefore, to sustain growth in tax revenue, the household sector needs to continue to develop, fueled by economic growth, and therefore increased disposable personal income.

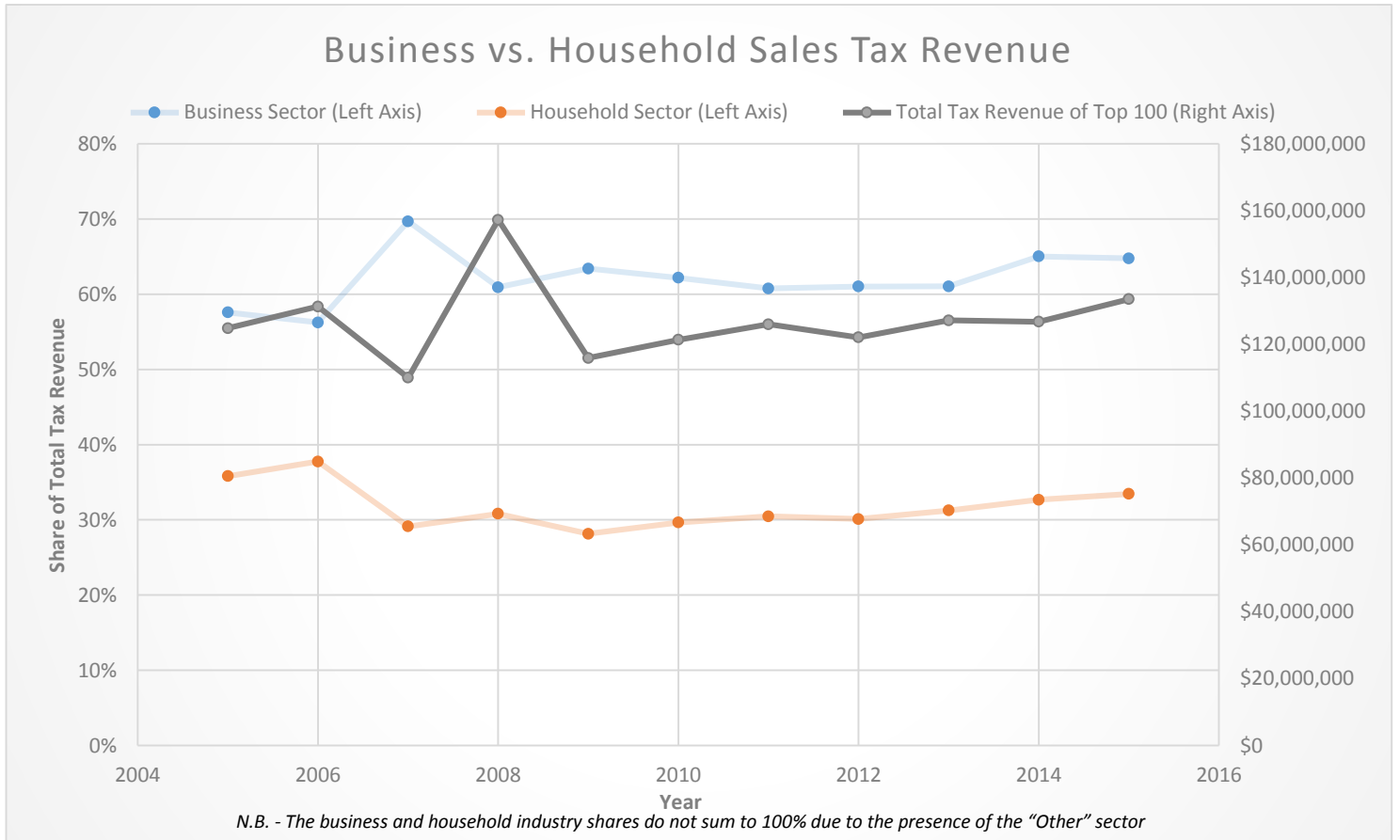


Figure 8

IV. Conclusions:

By way of our sector analysis of the top 100 taxpayers from 2005 to 2015, we first found that although all but two of the classifications (excluding "Other") saw nominal revenue increases over the time period studied, this has largely been due to inflation: after an inflation adjustment, only four sectors saw real revenue increases, while only two saw increases significantly above the inflation benchmark. We also see that the development of the household industry is integral to growing tax collections. Even though these sales are more volatile, as they are largely dependent on consumer tastes and incomes, in good economic times, they provide a significant boost to tax revenue in addition to the relatively stable sales of the business industry taxpayers.

Next, although we observed the top quintile of businesses in the city accounted for over 75% of 10% tax revenue during all times between 2005-2015, we have noticed a gradual redistribution of restaurant retail activity towards the lower quintiles, with the vast majority of growth concentrating in the middle three quintiles. A further indicator that big businesses are as a whole in decline is the fact that less than a quarter of the top hundred 10% sales tax payers in 2005 were able to increase revenues by 2015. However, the growth in the lower quintiles is largely able to offset this decline, and are the reason why nominal collections have increased and real collections have been stable even when the top 100 pay millions less in real terms every year.

Finally, even though the city is experiencing steady population growth, gentrification, and other factors that should increase the tax payments of the household sector, the majority of the 10% tax burden still falls on the business sector, with their overall market share actually increasing during the time period studied. This can actually be viewed as a positive, as many businesses from regions outside the District are contributing hundreds of millions of dollars every year towards DC tax revenue, instead of the tax burden entirely falling upon city households and residents.

About this data: Sales tax data are from confidential DC monthly tax filings, compiled by the Office of the Chief Financial Officer, Office of Tax and Revenue. Inflation adjustment data are from the DC Fiscal Policy Institute. Population adjustment data are from the Office of the Chief Financial Officer. Commuter data are from the United States Census Bureau.

Notes:

- 1) The 2011 data contained only nine months since tax reporting switched from the calendar year to the fiscal year, therefore we inflated the 2011 figures to simulate a full year of data. Data before 2011 are for the calendar year, while data after 2011 are for the fiscal year.
- 2) Two companies had impossibly large revenue data for the years 2005, 2006, and 2008, most likely ten times the correct value due to the misplacement of an extra digit. To correct for this error, we divided their taxes paid by ten to make the data more consistent and reasonable.