Assessing the Divide: Dissecting Property Tax Discrepancies in Brooklyn (2011-2019)

Alex Tsankov (ant2143@columbia.edu)

Summary: This report analyzes home sales price data from StreetEasy[1] for Brooklyn between 2011-2019 compared to the NYC Dept. of Finance tax data for Brooklyn[2] (over 630 MB of data) for the same period. We calculate the statistical differences between the city-assessed market values for taxation and the true market values. We then determine which regions of Brooklyn are the most under-valued by the city, and thus under-taxed, relative to their true market value and discuss implications.

Background: The New York City property tax system is the bedrock of the city's budget and comes from taxes levied on residential and commercial property. It is responsible for around a third of the budget and is critical because of its resilience compared to income taxes or federal grants. However, the property tax system is currently under intense scrutiny. A long-running lawsuit from 2017 which just received the go ahead for trial in 2024 asserts that "homes with equivalent values are currently assessed and taxed at different rates depending on where they are, and … the system disproportionately affects racial minorities and may even perpetuate segregation."[3] Based on publicly available data, is this claim true?

The NYC property tax system consists of three steps that determine how much a property owner is taxed each year. The first step is for the city to determine the (1) market value of each lot in the city. There are over 1 million taxable lots in the city, with many more subunits inside of them, and the city uses a variety of methods to determine how much each lot is worth. For

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[1] https://streeteasy.com/blog/data-dashboard/[object%20Object]

[2] https://data.cityofnewyork.us/City-Government/Property-Valuation-and-Assessment-Data/yjxr-fw8i/data

[3] Zaveri, Mihir. "Lawsuit over New York City's Property Tax System Can Proceed, Court Says" The New York Times, March 19, 2024. https://www.nytimes.com/2024/03/19/nyregion/property-tax-lawsuit-nyc.html.

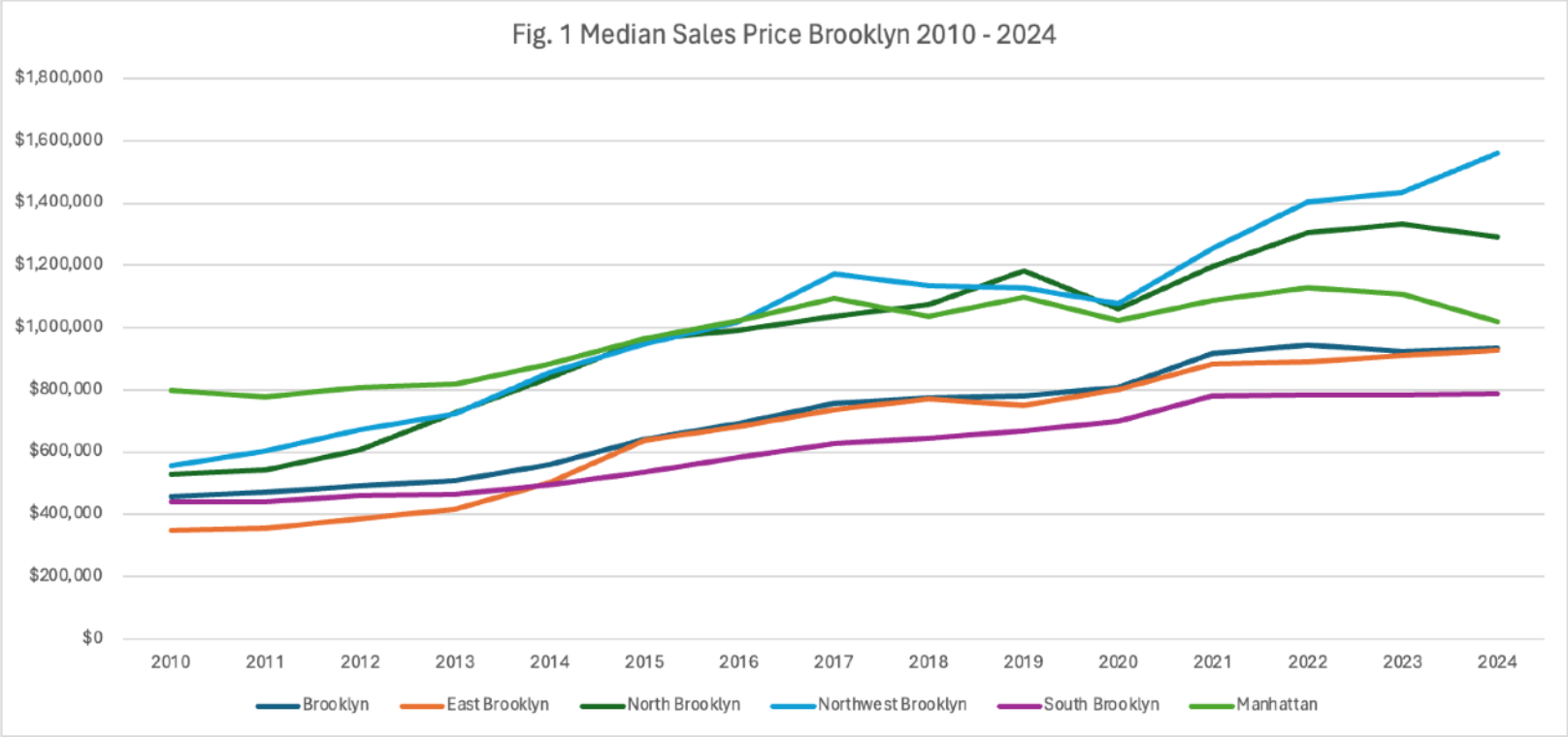
condos and apartment the Dept. of Finance uses comparable rental values to determine a lot's potential income and valuation. For single family homes, it looks at the sales price of similar units in the neighborhood. Next (2) it determines how much of the market value can actually be taxed (this is called assessable value) — "there is a state-mandated cap on how much the assessed value of one-to-three-family homes can go up every year. That limits the amount of tax that can be collected in neighborhoods where home values grow rapidly"[4]. For example, if a house increases in market value from $1mm to $1.1mm, it's assessable value can only increase from $1mm to $1.05mm. The savings from this capped value can compound over multiple years as the market value skyrockets, but the assessable value inches up slowly - leading to a much lower tax bill relative to the property value. Finally (3) every year the city council determines the unique tax rate per property class - single family homes, apartments and commercial each get a unique tax rate based on political dealmaking during city budgeting. This paper will primarily attempt to find discrepancies in (1) - the difference between true and city-determined market value for a taxable lot.

How has the property market fared in Brooklyn between 2011-2019?

Coming out of the *Great Financial Crisis* (GFC) in 2011, the entire Brooklyn property market started at a comparatively lower price - a far cry from what it would eventually bifurcate to by the end of the decade. Between 2011 and 2019, all property owners in Brooklyn benefited (and renters suffered) from this growth - some much more than others however. In 2010, the median home price was $468,656 in the borough. As the decade progressed and the housing market rebounded, by 2019 the borough had a median sales price of $907,168(1.93x).

[4] Ibid.

Blockbuster neighborhoods in North and Northwest Brooklyn near Manhattan such as Greenpoint (2.67x), Cobble Hill (2.14x), and DUMBO (3.07x) grew enormously in value. Other winners were neighborhoods that started with depressed valuations in 2011 and had enormous growth by the end of 2019. These neighborhoods still had modest prices relative to Manhattan and North Brooklyn by 2019, but experienced enormous growth such as Flastbush (2.19x), Bushwick (2.36x), Bedford Stuyvesant (2.39x). The home price laggards were clustered in South Brooklyn neighborhoods such as Canarsie (1.44x), Sheepshead Bay (1.48x), and Marine Park (1.42x). Part of the reason, is that they entered 2011 with prices higher than many other neighborhoods in Brooklyn, but were not able to grow as fast during the decade while other neighborhoods grew rapidly. As the prices diverged throughout the decade the standard deviation in housing prices in the borough grew from $92,773 in 2011 to over $236,069 in 2019.



Going beyond COVID-19 into 2024 we see that the divergence has become even more pronounced. Northwest Brooklyn (Williamsburg, Greenpoint, etc.) has outpaced all other neighborhoods, including the Manhattan median. We also see that while South Brooklyn benefited from the COVID-19 "rush to suburbs" trend more than North Brooklyn, however it has plateaued on the post-COVID rebound that has pushed areas close to Manhattan to new all time highs.

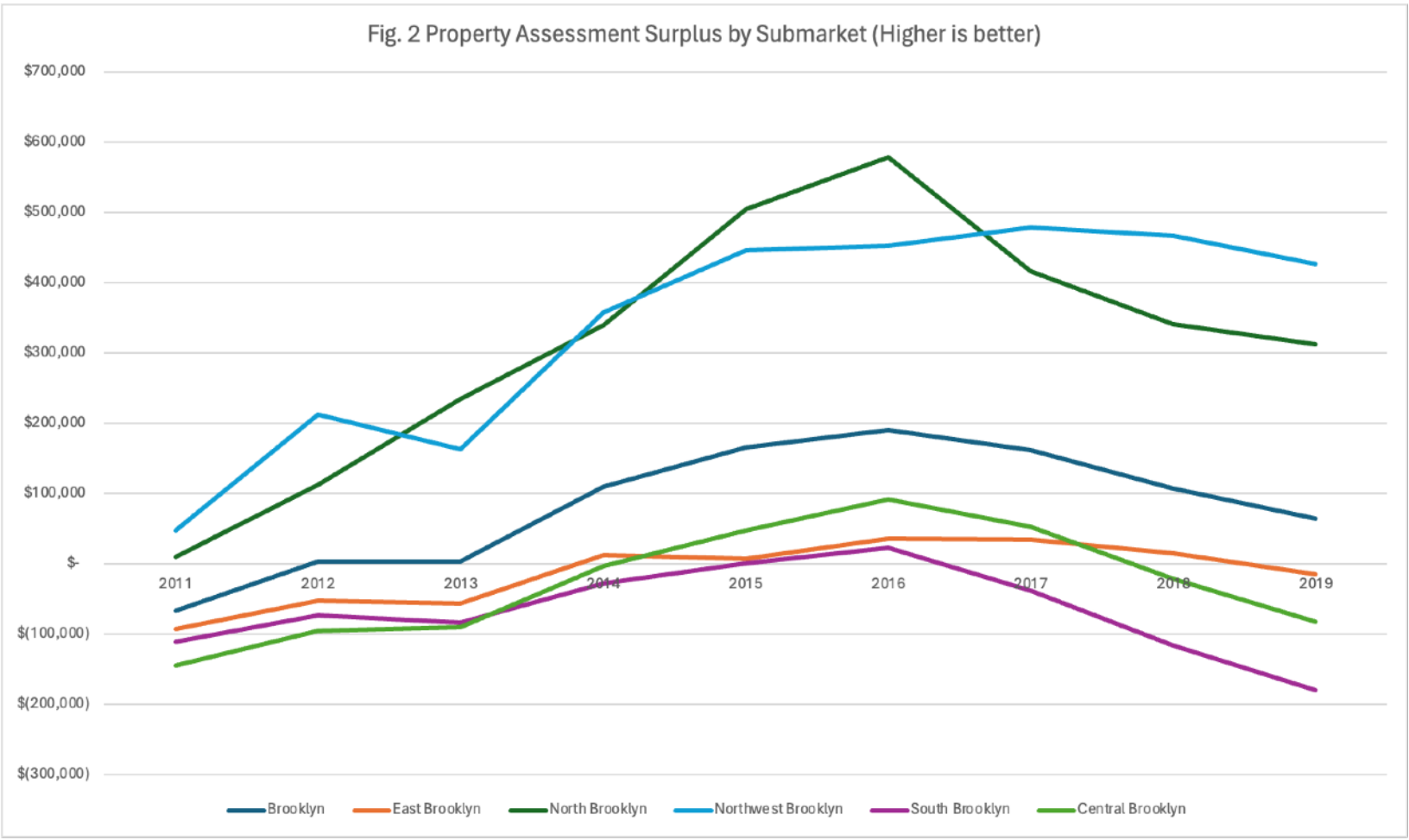
Analysis of Brooklyn Median Sales Prices Distribution 2011 & 2019		
	2011	*2019*
Mean	$468,656	$907,168
Standard Error	$46,387	$118,034
Median	$484,518	$923,236
Standard Deviation	$92,773	$236,069
Kurtosis	-1.5571567	-4.3068532
Skewness	-0.6824355	-0.183183
Range	$204,918	$491,064
Minimum	$350,335	$645,568
Maximum	$555,253	$1,136,632

How divergent is the city-assessed market value of units from the true market value?

As Brooklyn market rebounded between 2011-2019, the city was also able to reap an enormous bump in property tax revenue. However if you read the city's annual Property tax reports they consistently underestimate the strength of NYC property market's recovery post-GFC. The 2011 report struck a pessimistic tone "Market value declined slightly in FY 2011—for the second consecutive year. The total City-wide market value of fully and partially taxable

property fell…"[5] This statement is in direct contradiction to the true data from Streeteasy (Fig. 1) that showed a housing market recovery. This pessimistic outlook continued even into the FY 2014, which is when some of the strongest property growth in the city was occurring (Fig. 1) - the city described the property market with a tepid "Market value grew slightly in FY 2014, for the third straight year"[6] — the truth is that the property market was exploding at the time. Nobody was in a rush to correct the Dept. of Finance either, since that would have led to higher

Fig. 2 Property Assessment Surplus by Submarket (Higher is better)



tax bills for residents. What the city's conservatism translated into was low market value

[5] *Annual Report on the NYC Property Tax Fiscal Year 2011*. Office of Tax Policy. City of New York Department of Finance, Aug. 2011.

[6] *Annual Report on the NYC Property Tax Fiscal Year 2014*. Office of Tax Policy. City of New York Department of Finance, June. 2014.

assessments and an enormous divergence between the city's taxed market value and the true market value. This divergence is referred to in this paper as the *Property Assessment Surplus* and the greater surplus a market has, the less it is taxed relative to its market value. The divergence between the city's conservative market assessments and the home-price bonanza reached a peak in 2016 (Fig. 2). Only after 2016 did the city begin to better reflect the market value in their assessed value. Between 2016 and 2019, City fiscal reports finally began to strike an upbeat tone in their reports - their FY2017 report exclaiming that the "The total City-wide market value of fully and partially taxable property exceeded one trillion dollars and was about 9.8 percent higher than FY 2016."[7] This change in attitude is directly seen in the *property assessment surplus* which begins to decline in 2016 (Fig. 2).

Using Brooklyn as a case study - the discrepancy between true and city-assessed market value reflects tremendous inequity. While the tax rate is shaped by politics, the market value is entirely up to the Dept. of Finance and should theoretically be disconnected from political interference. By giving a household a far lower market value assessment than a home is truly worth represents an enormous tax break. The opposite is also true - a household given a city-assessed tax rate higher than the property is worth is an enormous disadvantage - they are paying more taxes on property than they should. Starting in 2011, we saw minor inequities. However as the market prices increased, the city did not reflect this increase and certain neighborhoods were able to get away with paying taxes on far lower property values than they should have. The neighborhoods that benefited the most from this by 2019 are those like Greenpoint, Williamsburg, and Cobble Hill that had light taxation throughout the decade and an enormous

[7] *Annual Report on the NYC Property Tax Fiscal Year 2017*. Office of Tax Policy. City of New York Department of Finance, April. 2017.

surplus. Other beneficiaries were neighborhoods like Bedford Stuyvesant, East New York, and East Flatbush that started out at low valuations that the city never increased. The losers in the system were neighborhoods in South and Central Brooklyn such as Bay Ridge, Brighton Beach, and Gravesend, who had to pay consistently higher taxes than their property were worth through the decade.

Analysis of Brooklyn Property Assessment Surplus 2011 & 2019		
	2011	*2019*
Mean	-$58,096	$92,291
Standard Error	$37,036	$117,454
Median	-$92,424	-$14,944
Standard Deviation	$82,815	$262,635
Kurtosis	-2.331268466	-2.397180943
Skewness	0.480739942	0.488820085
Range	$192,612	$605,992
Minimum	-$145,076	-$179,564
Maximum	$47,536	$426,428

Conclusion: Property owners in the wealthiest and poorest neighborhoods benefited at the expense of those in the middle-valued ones. There are a few possible reasons for this divergence. It is possible that the city may have viewed the heightened prices of the blockbuster neighborhoods as being transitory, which would mean that assessing them with a high market value would have led to overtaxation when the price reverted. They may have also worried about legal challenges from the property owners. Its also possible that the constituency in these high-growth neighborhoods used their political clout to lower their tax bill, by encouraging a conservative Dept. of Finance stance. Further research will be necessary to determine if there is

racial component to this *property assessment surplus* — however it is clear from the data that their was indeed large discrepancy between 2010 and 2019.

Appendix

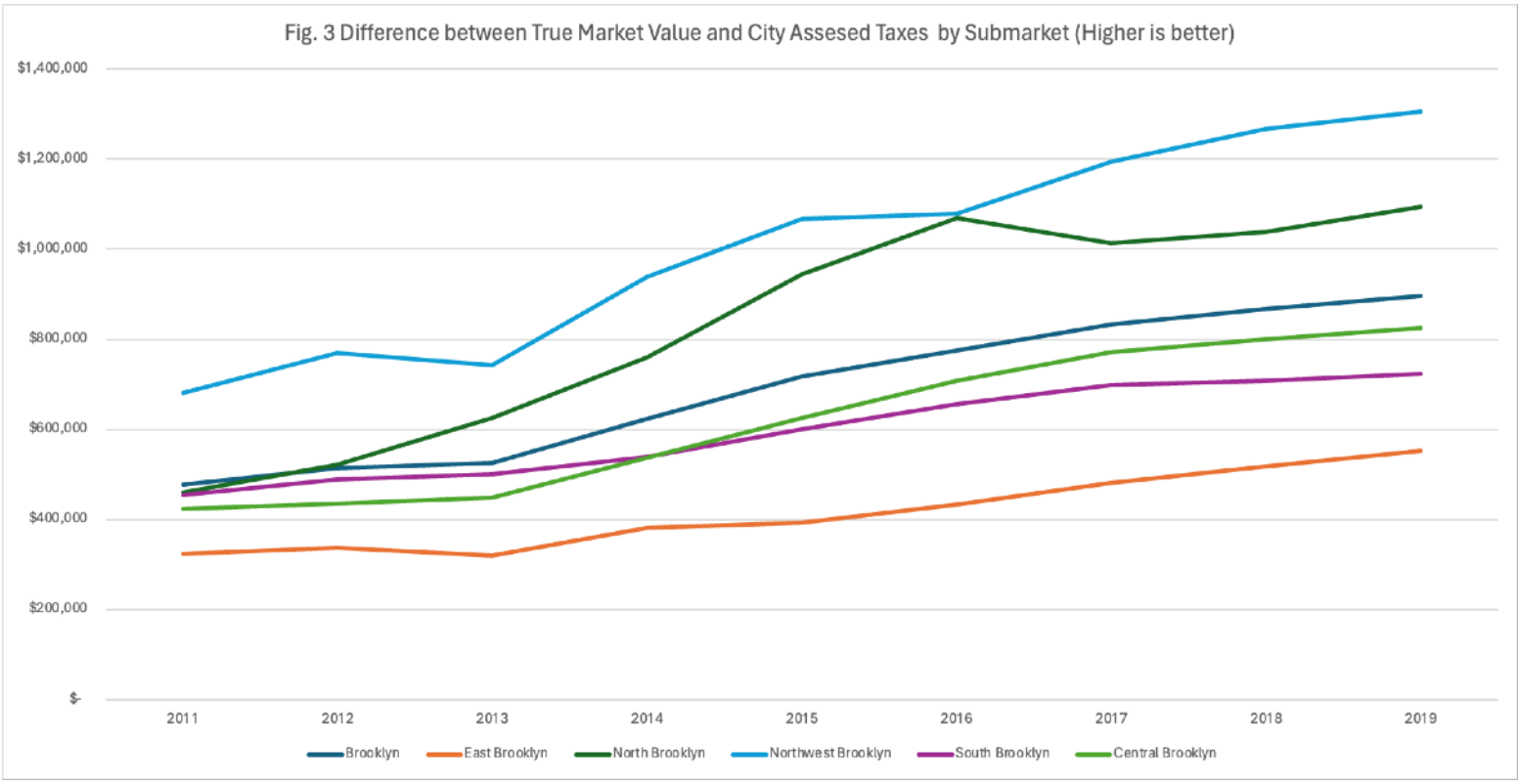


Figure 3 shows the actual divergence between the true market value and the tax rate. The higher the line, the less the property was taxed relative to what it was worth. This shows the affect of (2) the state of New York cap on how much assessments can go up. This report only focuses on the market-value assessment (1) of the tax process because that is entirely under the control of the Dept. of Finance and should have the least political interference.

Further data including the datasets used (SteetEasy & City of New York), Python scripts, and the archived fiscal reports can be found in https://github.com/antsankov/nyc-property-tax-analysis