

Crime Hot Spots: A Study of New York City Streets in 2010, 2015, and 2020

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Executive Summary

Recent data in New York City suggest that violent crime is on the rise. However, over the last three decades, there has been a more than 70% decline in index crimes as reported by the FBI. This led to a growing perception, especially among critics of policing, that crime in NYC had become a marginal problem, or at least that it had declined to levels such that there was no need to place too much emphasis on crime control. Combined with concerns about police abuses and claims of disparities in policing in minority and disadvantaged communities, this fueled calls for defunding the police.

In this report, we focus on the high-crime hot spots where 25% and 50% of NYC crimes were committed. The crime numbers on those streets suggest that, despite the encouraging overall crime decline over the past few decades, many city streets continue to have very high crime levels that need to be addressed by police and other agents of the city government.

Our report looks beyond general crime statistics to the hot spots of crime where much crime in a city is concentrated. Looking at NYPD crime reports for 2010, 2015, and 2020, we find that about 1% of streets in NYC produce about 25% of crime, and about 5% of streets produce about 50% of crime. This is consistent across the three years, showing that a very small proportion of streets in the city are responsible for a significant proportion of the crime problem.

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Mapping crime in NYC, we found that high-crime streets are spread throughout the city, though concentrated in Manhattan, the Bronx, and Brooklyn. In turn, we observed a good deal of street-by-street variability, with the highest-crime streets often adjacent to streets with little or no crime. This means that it is misleading to classify whole neighborhoods as crime hot spots, since the majority of streets—even in higher-crime areas—are not. This is an important lesson for police and ordinary citizens who mistakenly see very large areas as crime-ridden. We also found a good deal of stability in the locations of crime hot spots. Nearly all the streets that were hot spots as we have defined them in 2010 were also hot spots in 2020.

It is clear from our data that many city streets still have very high crime levels, requiring interventions by police and city government more generally.

Introduction

Researchers, policymakers, and the public ordinarily look at crime rates across cities to assess how safe citizens are in their daily lives. Accordingly, a “crime drop” focuses on declines in overall city crime trends, just as a “crime wave” refers to increasing crime across a city. But citywide trends in crime numbers mask a tremendous degree of diversity at the localized, micro-geographic level.

Over the past two decades, scholars have identified significant variability of crime within communities or neighborhoods (e.g., Groff, Weisburd, and Yang, 2010; Hipp, 2013; Tita and Radil, 2010; Weisburd, Groff, and Yang, 2012; Taylor, 2015; Steenbeek and Weisburd, 2016; Schnell, Braga, and Piza, 2017). By focusing on street segments (including both block faces of a street, intersection to intersection), they have shown that there is significant variability in urban crimes, street by street (Groff, Weisburd, and Yang, 2010; Schnell, Braga, and Piza, 2017; Steenbeek and Weisburd, 2016; Weisburd, Groff, and Yang, 2012).¹

Examining crime trends in Seattle between 1989 and 2002, Weisburd et al. (2004) reported an almost 25% decline in crime overall. But this decline was accounted for by just 14% of the street segments (see also Weisburd, Groff, and Yang, 2012). Most streets experienced little change in crime, and about 2% of the street segments—representing more than 500 streets—experienced crime waves, with average increases of almost 50%. In a period described by many as representing a “great American crime decline” (Zimring, 2006; Sharkey, 2018), localized crime trends at the street-segment level showed that crimes on many Seattle streets increased significantly.

These findings illustrate the importance of digging deeper into localized trends if we want to understand how people who live in a city experience crime. They are reinforced by another important observation about crime at street segments in the city. In the 2014 Sutherland Lecture to the American Society of Criminology, one of us (Weisburd, 2015) showed that there is tremendous consistency in the degree to which crime is concentrated at hot spots across cities (and across time in cities). This consistency was so strong that it suggested a “law of crime concentration at places,” where, in larger cities, about 50% of crime is concentrated at 5% of the street segment and 25% of crime at just 1% of street segments (see also Weisburd, Groff, and Yang, 2012).

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The strong concentration of crime at micro-geographic hot spots has become a key regularity of research on crime at place (Telep and Weisburd, 2018). It suggests that the crime problem is experienced with the greatest intensity at a very small number of places in a city and that, in addressing crime problems, city governments and law-enforcement agencies need to focus on the top 1% (and 5%) of streets that “produce” about one-quarter (and one-half) of the crime problem.

Our report focuses on “hot-spot” streets in New York City (NYC) in 2010, 2015, and 2020. In recent years, there has been a growing perception that crime in NYC has become a marginal problem, or at least that it has declined to levels such that there was no need to place too much emphasis on crime control. In the early 1990s, there were more than 700,000 index crimes reported in the city each year.² By 2010, that number had declined to fewer than 200,000 crimes. Between 2010 and 2019, NYC had an additional 11% decline in index crimes. Looking at these overall numbers provides a very encouraging view of the city’s crime problem (despite an unofficial uptick of 4.2% in index crimes in 2020, the pandemic year, as contrasted with 2019).³

In this report, we focus on the high-crime hot spots where 25% and 50% of NYC crimes were committed. The crime on those streets suggests that, despite the encouraging overall decline over the past few decades, many city streets continue to have very high crime levels that need to be addressed by police and other agents of the city government.

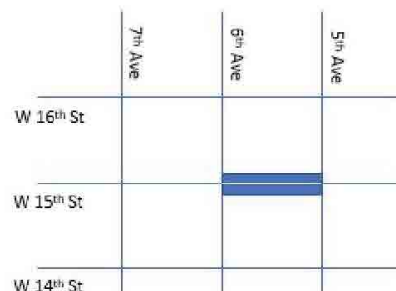
The Data

To develop our portrait of high-crime streets in the city, we use publicly available historical crime-report data⁴ containing XY coordinates. These crime reports represent all valid felony, misdemeanor, and violation crimes reported to the NYPD.⁵ For confidentiality, rape and sex crime reports are not attached to geographic identifiers and, accordingly, are not included in our examination of micro-level crime trends (though they are included in the crime totals for the city, provided below). Sex crime reports constitute about 1.48% of the crime data and therefore do not appreciably affect our analyses. To examine crime concentration over the past decade, we chose three years: 2010, 2015, and 2020.

Using these data, we implement a straightforward method in which crime counts are summed for each street segment in the city. In this analysis, there are 83,547⁶ street segments, according to NYC OpenData. It would not be possible to use a spatial unit smaller than the street segment because the crime report data are coded to the street-segment center line and do not provide address-level information. At the same time, street segments have become the most commonly used geographic unit for studies of crime concentration (Lee et al., 2017) because they can be seen as behavior settings (see Wicker, 1987; Weisburd, Groff, and Yang, 2012; Weisburd, Groff, and Yang, 2014) and have well-defined and objective boundaries. Moreover, the use of street segments minimizes the errors likely to develop from miscoding of addresses in official data (see Weisburd and Green, 1995; Klinger and Bridges, 1997; Weisburd, Groff, and Yang, 2014). FIGURE 1 illustrates what we mean by a street segment in reference to an array of streets in a street grid.

Figure 1

Illustration of a Street Segment



For our analyses, the cumulative percentage of crime is calculated, beginning with the highest-crime segment; then, percentages of street segments encompassing certain thresholds of crime are calculated. We follow earlier research in examining the proportion of streets that “produce” 25% and 50% of crime (e.g., Weisburd, 2015), focusing on city streets that would likely receive increased police attention. Crimes are joined to the nearest street segment, using the geographic information system software package ArcGIS 10.

A key problem in identifying the concentration of crime at micro-units of geography is that intersections are often connected to four specific street segments, making crime allocations to specific streets ambiguous. While there has been debate in the literature on crime concentration about how to handle crimes occurring on intersections, most studies exclude crimes at intersections because they differ from street-segment crime—particularly, in the numbers of traffic-related crime reports (Curman, Andresen, and Brantingham, 2015; Dario et al., 2015; Gill, Wooditch, and Weisburd, 2017; Telep, Mitchell, and Weisburd, 2014; Weisburd, 2015; Weisburd et al., 2006; Weisburd, Groff, and Yang, 2012). In 2020, 69% of NYC traffic and vehicle violations occurred at intersections, despite the fact that there are about twice as many street segments as intersections. Overall, 13%–19% of crime reports in the city are linked to intersections. This report excludes crimes occurring at intersections.⁷

Overall, as Table 1 shows, there were almost 510,000 official crime reports in NYC in 2010 (before crimes at intersections and sex crimes are excluded). By 2020, there were 413,412 crime reports. This suggests that, overall, the “miracle” of the NYC crime decline (Domanick, 2011) continued over the past decade, with an additional crime drop of almost 19%.⁸ New York had the lowest crime level of the 10 largest cities reporting index crimes to the Uniform Crime Reporting Program in 2010 and 2019 (the FBI has not yet reported data for 2020).

Table 1

Overall, Property, and Violent-Crime Reports by Year

Year	Total crime records	Property crime	Violent crime
2010	509,731	168,326	102,172
2015	478,590	166,639	96,419
2020	413,412	151,650	77,819

Source: FBI Uniform Crime Reporting (UCR) Program

Looking only at violent and property crime, there were also meaningful declines. There were 102,172 violent-crime reports in NYC in 2010 but fewer than 80,000 violent crimes in 2020, a drop of almost 25%. A smaller decline in crime was found for property crimes. While there were almost 170,000 property-crime reports in 2010, there were 151,650 in 2020, a drop of almost 10%.

Crime Concentrations

The first observation we make from these data is that they closely follow the bandwidths for the law of crime concentration observed in previous studies (e.g., Weisburd, 2015). Looking at the proportion of streets that produce 25% and 50% of crime in the three observation years, we

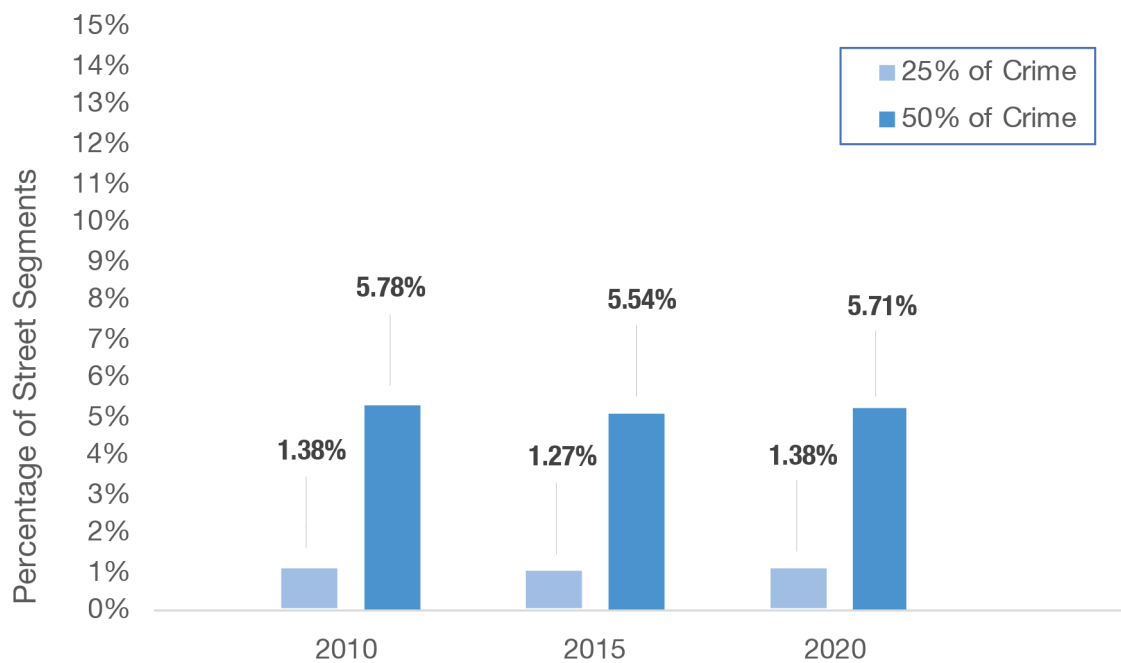
find a good deal of stability (FIGURE 2). Between 5.54% and 5.78% of streets produce 50% of crime over the three time periods. Between 1.27% and 1.38% of city streets produce 25% of crime. This illustrates that crime is highly concentrated in hot spots.⁹

Moreover, despite an almost 20% overall decline in crime reports, the concentration of crime remains fairly stable in NYC, as it does in other cities (see Weisburd et al., 2004; Weisburd, Groff, and Yang, 2012; Curman, Andresen, and Brantingham, 2015; Wheeler, Worden, and McLean, 2016). Indeed, there is little difference in crime concentrations between the highest-crime year (2010) and the lowest-crime year (2020): 5.78% and 5.71% of streets produce 50% of crime in those years, respectively, and 1.38% of streets produce 25% of crime in both years.

Interestingly, 15%–16% of streets produce 75% of crime on street segments, and 55%–58% of streets produce all crime (FIGURE 3). These results point to the overall concentration of crime on NYC streets; and they show that, in any given year, almost half the streets have no crime reports. Again, this follows observations that have been made in other cities (Zastrow, 2021).

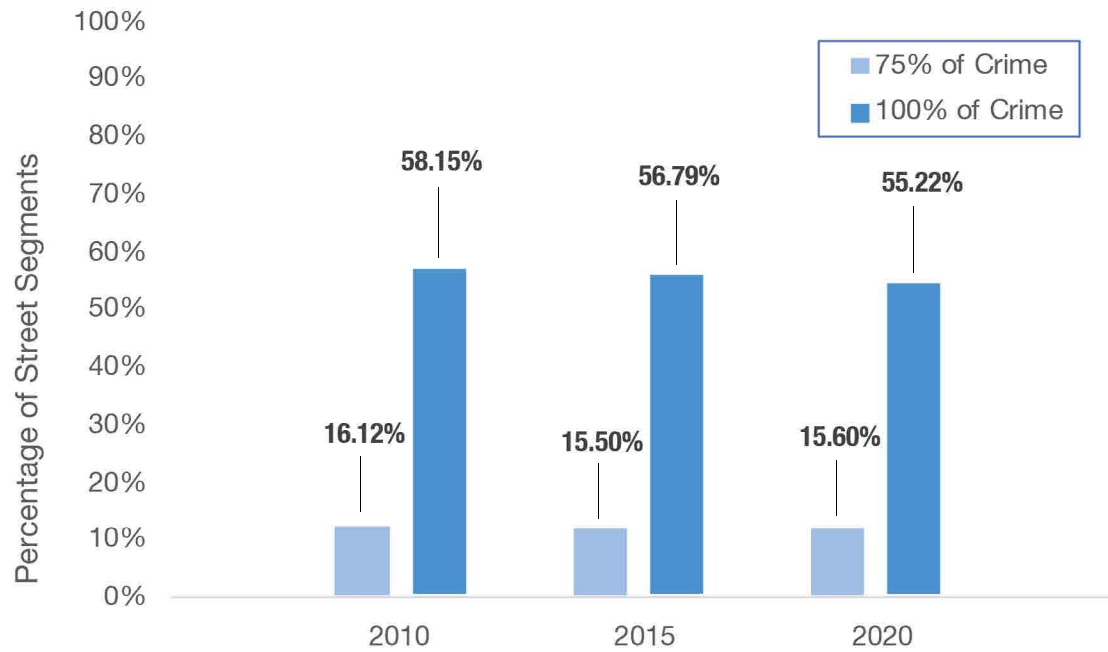
Figure 2

Crime Concentration: 25% and 50% of Crime



Source: Authors' calculations

Figure 3

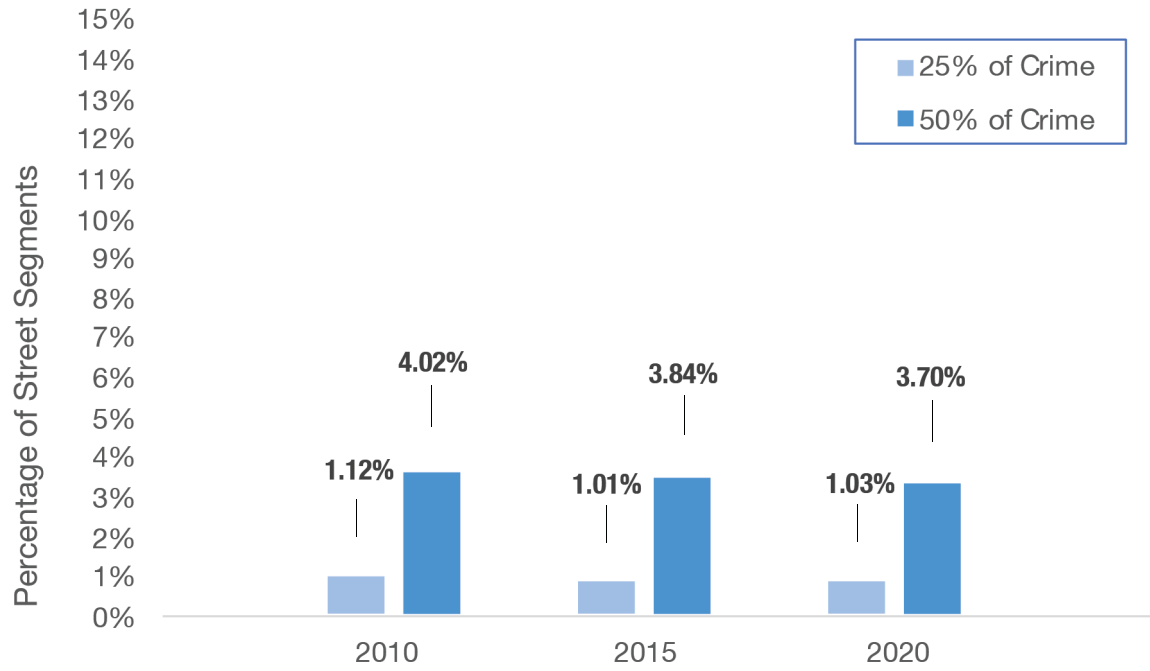
Crime Concentration: 75% and 100% of Crime

Source: Authors' calculations

Looking only at violent crime and property crime, there were similar, though slightly higher, levels of concentration (FIGURE 4 and FIGURE 5). For violent crime, 3.70%–4.02% of streets produced 50% of crime in each of the three years examined. Between 1.01% and 1.12% of streets produced 25% of violent crime. For property crime, 4.31%–4.71% of streets produced 50% of crime, and 0.69%–0.78% of streets produced 25% of crime. While the law of crime concentration was proposed for overall general crime levels, these concentration levels suggest that a somewhat similar law operates when looking at broad crime types.

Figure 4

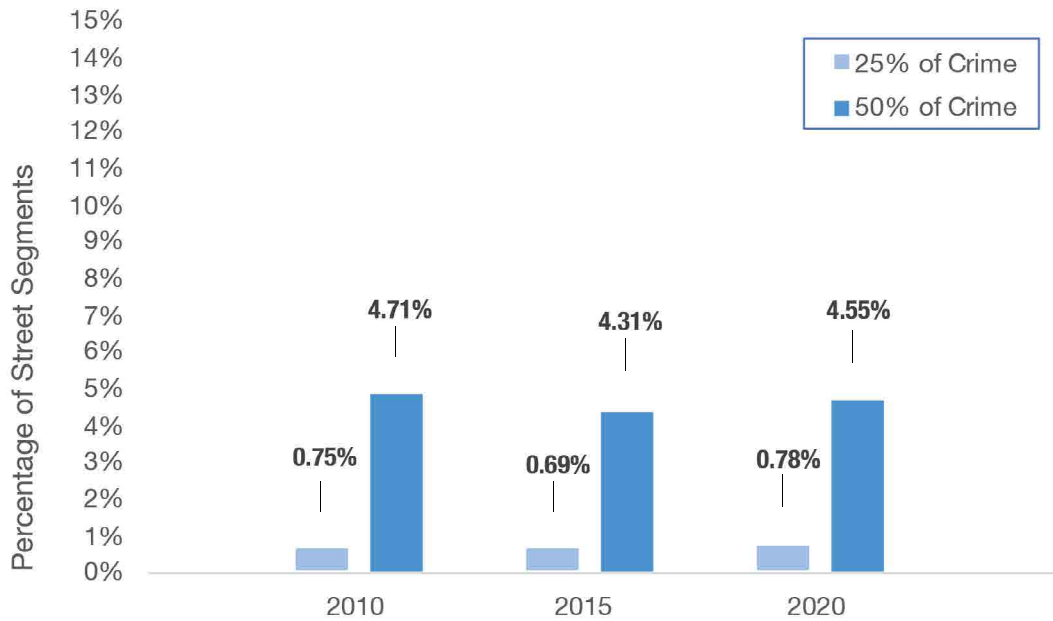
Concentration of Violent Crime: 25% and 50% of Crime



Source: Authors' calculations

Figure 5

Concentration of Property Crime: 25% and 50% of Crime

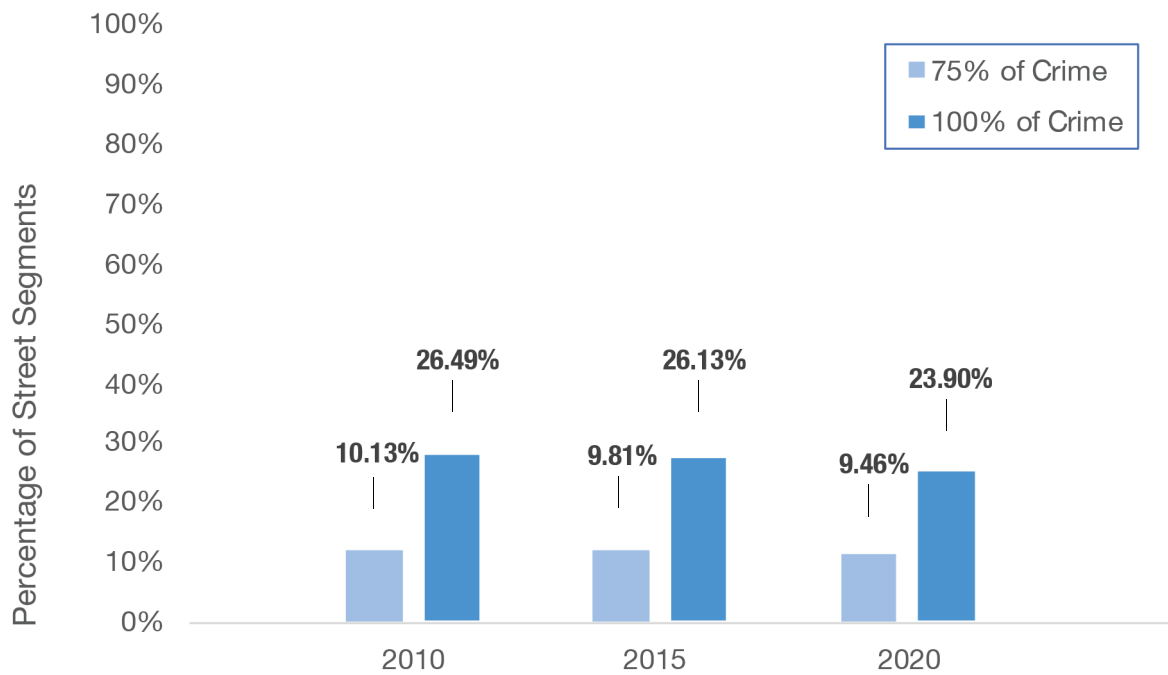


Source: Authors' calculations

Looking at the 75% and 100% concentrations, we found that 75% of the violent crime on street segments was committed on about 10% of city streets in the three years, and 100% on about 25% of city streets (FIGURE 6). For property crime, which is much more common in these data, the results are closer to those of general crime trends. About 14% of streets in the city produce 75% of property crime, and about 40% produce 100% of property crime (FIGURE 7).

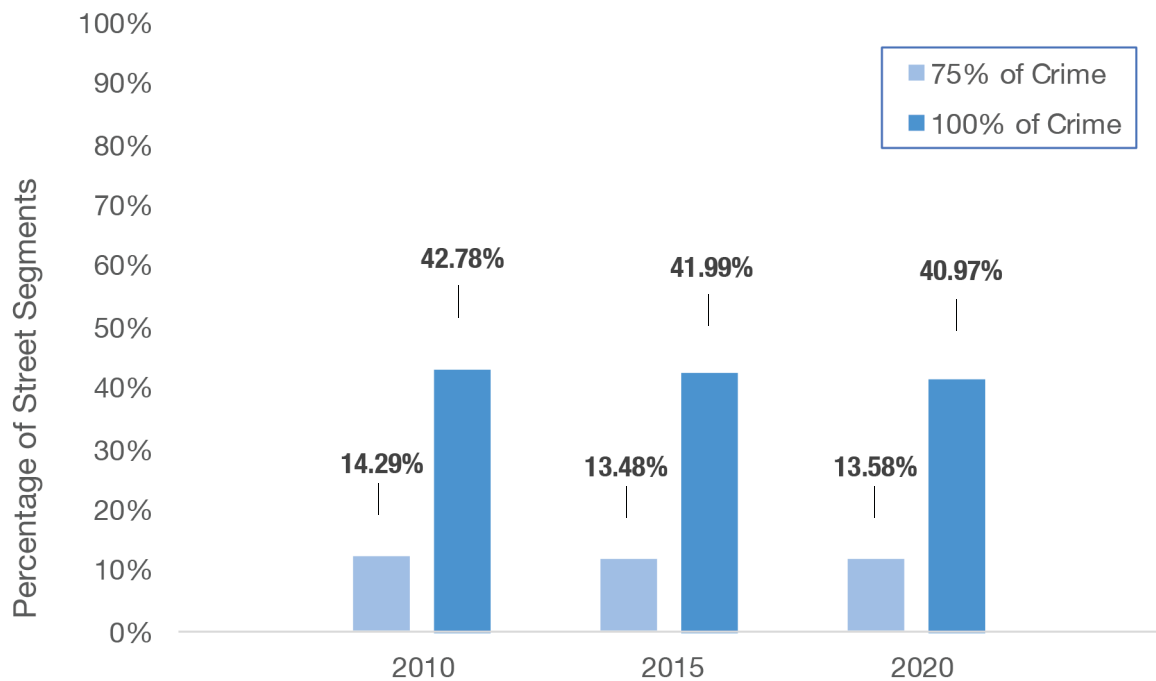
Figure 6

Concentration of Violent Crime: 75% and 100% of Crime



Source: Authors' calculations

Figure 7

Concentration of Property Crime: 75% and 100% of Crime

Source: Authors' calculations

Distributions of concentration may be affected by the relative proportion of crimes to the number of streets in a city (Bernasco and Steenbeek, 2017). A common metric for overcoming such distributional biases is to use the generalized Gini coefficient, which provides a metric between 0 and 1, whereby 1 suggests total concentration (in a single unit) and 0 suggests total spread across geographic units. Using this approach (Table 2) we again find evidence of very strong concentration, with violent and property crime marginally more concentrated than crime generally. For all crime, the generalized Gini coefficient varies between 0.77 and 0.79 across the three years studied, for violent crime between 0.81 and 0.84, and for property crime between 0.80 and 0.82. These data reinforce the conclusion that the concentration levels in the city remained stable despite the crime declines that are observed.

Table 2

Gini Coefficients of All, Violent, and Property Crimes

All Crime	Street Segments	Crime	Gini Coefficient
2020	83,547	340,916	0.7813
2015	83,547	377,165	0.7818
2010	83,547	383,689	0.7742

Violent Crime	Street Segments	Crime	Gini Coefficient
2020	83,547	57,746	0.8137
2015	83,547	68,249	0.8343
2010	83,547	67,455	0.8274

Property Crime	Street Segments	Crime	Gini Coefficient
2020	83,547	133,282	0.8164
2015	83,547	141,288	0.8172
2010	83,547	136,709	0.8079

Source: Authors' calculations

Overall Crime Levels for Crime Hot Spots

The data so far follow earlier studies in other larger cities: about 1% of streets produce 25% of crime overall, and about 5% of streets produce 50% of crime overall (see Weisburd, 2015; Telep and Weisburd, 2018). In this context, the number of street segments that can be defined as crime hot spots remained relatively stable across the years despite the overall crime decline observed in the city. But a key question—given the very large crime drop in NYC over the past few decades—is whether hot-spot streets remain hot. Put differently, do hot-spot streets have large numbers of crimes, or has the large crime decline in NYC brought crime on hot-spot streets to very low levels?

Table 3 shows the mean, median, and standard deviation of crime levels for the four quartiles of crime concentrations (up to 25% of crime, above 25%–50%, above 50%–75%, and above 75%–100%) for streets that have at least one crime in the observation year. We focused on the four quartiles so that we could observe the level of crime found in each of the four declining crime groupings. For example, the lowest percentage represents the 1.27%–1.38% of streets that produce 25% of crime. The next level of concentration examines only those streets that are not in that grouping but that are found in the next highest level of crime concentration adding up to 50% of crime. Importantly, about 45% of the streets each year do not have any crimes in a given year and are excluded.

Table 3

Average Number of Crimes for Street Segments by Quartile,* 2010, 2015, and 2020

2010 Quartiles for All Crime						
Quartile	N (number of street segments)	Mean (number of crimes)	Standard Deviation	Median (number of crimes)	Minimum (number of crimes)	Maximum (number of crimes)
1	1,154	81.50	84.73	60	43	2,000
2	3,672	26.11	6.73	24.5	18	43
3	8,643	11.10	2.84	10	7	18
4	35,112	2.79	1.80	2	1	7
2015 Quartiles for All Crime						
Quartile	N	Mean	Standard Deviation	Median	Minimum	Maximum
1	1,060	87.21	87.91	63	44	1442
2	3,571	26.40	6.97	25	18	44
3	8,320	11.33233	2.87	11	7	18
4	34,492	2.79	1.82	2	1	7
2020 Quartiles for All Crime						
Quartile	N	Mean	Standard Deviation	Median	Minimum	Maximum
1	1,151	72.59	54.75	55	39	946
2	3,616	23.57	6.09	22	16	39
3	8,268	10.31	2.56	10	7	16
4	33,096	2.63	1.67	2	1	7

*Quartiles: 1= 0–25%; 2= >25%–50%; 3= >50%–75%; 4= >75%–100%

Source: Authors' calculations

Focusing on the street segments that produced 25% of street-segment crime in NYC, it is clear that crime levels are very high on these streets. In 2010, these 1,154 street segments had average crime levels (the numerical average across streets) of more than 80 crime reports in a single year. The median crime level (or 50th percentile score) was 60 crimes, still suggesting a very large number of crime reports in a single year. In 2020, about the same number of street segments produced 25% of crime. The crime level is a bit lower but still very high for a single street segment, with a mean of 73 crimes and a median of 55 crimes. The overall trend across the three years analyzed is interesting since the mean number of crime incidents for the top 1% of street segments actually increases between 2010 and 2015, despite a decrease in overall crime in the city. This suggests that the overall number of crimes in the city is not necessarily the only impact on street-level crime.

This is reflected in the median number of crimes as well, which shows 60 crime reports in 2010, 63 in 2015, and 55 in 2020. The median is less affected by outliers, which drive the larger estimate for the mean number of crimes in the three years. But these outliers suggest that there are a number of streets in the city with extremely high crime levels. In 2010, there are 185 street segments with crime levels above 100 crime reports per year. In 2015, there are 210 street segments with more than 100 crime reports, and in 2020, there are 159 street segments with

more than 100 crime reports. There are a few streets with extraordinarily high crime numbers. Five streets have 500 or more crime reports in 2010 and two streets in 2020. These streets are generally shopping venues.

Intersections are excluded from these analyses, which means that the extent of the crime problem on high-crime streets is likely undercounted. Following the general percentages of crime at intersections, such undercounting would range, on average, between 13% (2020) and 19% (2010) over the three observation years.¹⁰

Looking at the street segments that accounted for the next quartile of crime in the city still suggests streets with significant crime problems that need to be addressed. In 2010, the average number of crimes for this group of streets was about 26 crimes (in this case, the median is similar, with 25 crimes). The number was similar in 2015, with a slight decline in 2020. However, in 2020, street segments in this group still included, on average, about 24 crime reports. The highest-crime street segments in this group had as many as 39 crime incidents in 2020, 44 in 2015, and 43 in 2010. In 2020, none of these streets had fewer than 16 crimes.

While many NYC streets had high crime levels during these years, the large majority of street segments had relatively low levels of crime. The lowest quartile, producing the remaining 25% of crime in the city, included 33,096–35,112 street segments over the three observation years. These streets averaged 2.6–2.8 crimes per year. If we add to this group the street segments with no crime, we gain a total of more than 68,000 streets in 2010 and more than 72,000 streets in 2020. The highest crime level for this group of street segments in a year is seven across the three observation years. This suggests that, overall, most streets in the city do not need intensive police interventions, though sporadic police attention for some streets that have as many as seven crimes in a year is likely warranted.

Violent Crime on Hot-Spot Streets

Violent crimes are particularly concerning for citizens; accordingly, assessing violent-crime levels on NYC streets is important (Table 4). About 20,000 street segments have at least one violent crime in each of the three observation years. In 2010, 934 street segments produced 25% of NYC's violent crimes. In that year, the average number of violent crimes found on these high-crime streets was 17.7 (median 15). In 2015, the mean number of violent crimes for streets in this top quartile (N=846) was 19.8 (median 16). In 2020, the mean number of violent crimes for streets in this quartile (N=858) was 16.5 (median 14). It's apparent that many streets have very high violent-crime levels across the three years, despite the strong crime decline citywide over the past few decades.

Table 4

Average Number of Violent Crimes for Street Segments by Quartile,* 2010, 2015, and 2020

2010 Quartiles for Violent Crime						
Quartile	N (number of street segments)	Mean (number of crimes)	Standard Deviation	Median (number of crimes)	Minimum (number of crimes)	Maximum (number of crimes)
1	934	17.70	9.46	15	11	102
2	2421	6.97	1.59	7	5	11
3	5110	3.30	0.83	3	2	5
4	13,667	1.26	0.44	1	1	2
2015 Quartiles for Violent Crime						
Quartile	N	Mean	Standard Deviation	Median	Minimum	Maximum
1	846	19.77	13.16	16	11	188
2	2360	7.23	1.66	7	5	11
3	4,994	3.42	0.86	3	2	5
4	13,634	1.28	0.45	1	1	2
2020 Quartiles for Violent Crime						
Quartile	N	Mean	Standard Deviation	Median	Minimum	Maximum
1	858	16.49	9.03	14	10	104
2	2,231	6.47	1.42	6	5	10
3	4,818	2.99	0.77	3	2	5
4	12,057	1.22	0.42	1	1	2

*Quartiles: 1= 0–25%; 2= >25%–50%; 3= >50%–75%; 4= >75%–100%

Source: Authors' calculations

Even in the second quartile of streets, there continue to be serious violent-crime levels. For each of the three years, the mean of violent-crime incidents for the second quartile of crime streets is 6.5–7.2 violent crimes (with a median between six and seven). More than 2,000 street segments fall into this category each year.

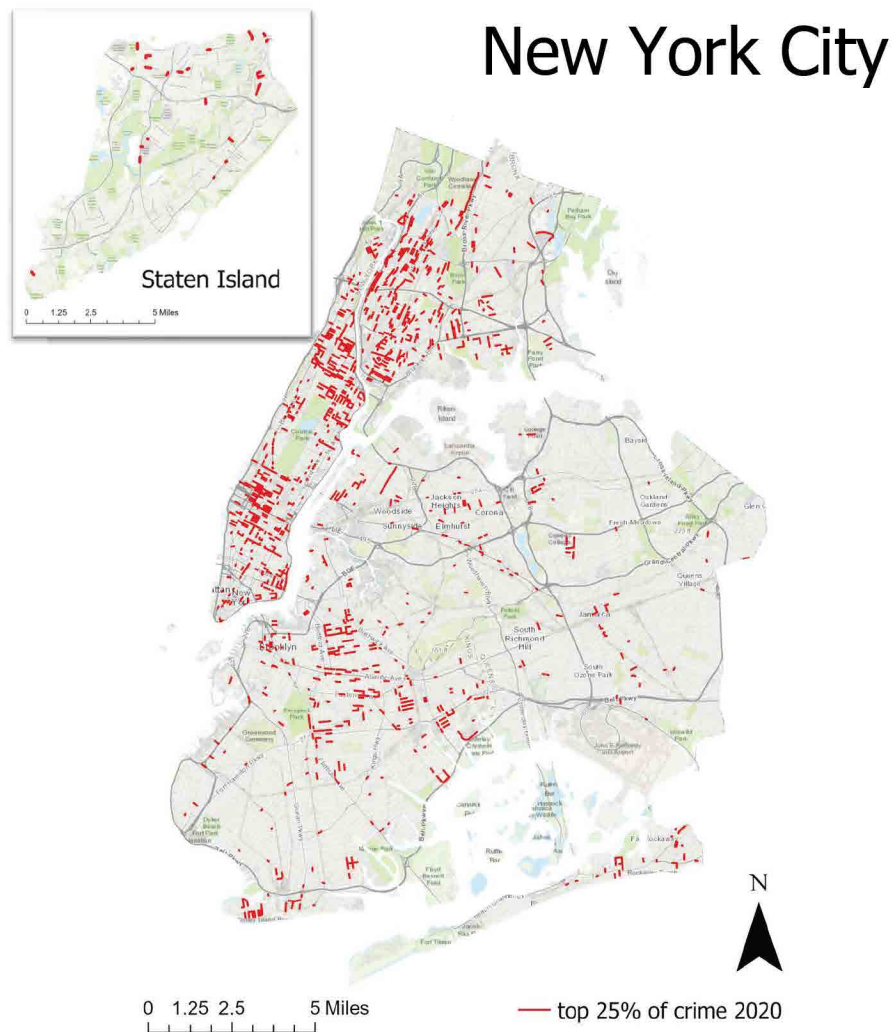
Where Are the Crime Hot Spots?

An important issue for assessing the spread of policing in a city is the geographic distribution of crime hot spots. Are they located only in a specific NYC borough or in very specific neighborhoods? Or are they spread across the city? Is there strong street-by-street variability, or are hot spots really “hot neighborhoods”? A map showing the hottest street segments in NYC (the top 1.4% of street segments producing 25% of crime) for 2020 is in FIGURE 8. It shows us that there are very high-crime hot spots in each of the city’s boroughs, though the number varies. The largest concentrations of hot spots are found in Manhattan, Brooklyn, and the Bronx, representing the most densely populated and urban parts of the city.

While we did not have access to data on the characteristics of these streets, previous research points to a number of factors that lead to high crime levels on streets (Jones and Pridemore, 2019; Weisburd, Groff, and Yang, 2012; Weisburd et al., 2021). Some of these factors follow opportunity models for explaining crime, such as population density and commercial activity. This is suggested in our map by the relatively larger number of hot spots in Manhattan. Interestingly, the highest overall crime street in NYC is next to Macy’s department store. Social characteristics of street segments have also been identified as related to crime levels. Concentrated disadvantage (which sociologists characterize as the percentage of individuals who are living below the poverty line, on public assistance, unemployed, under age 18, and in female-headed households) and low collective efficacy (trust in one’s neighbors and willingness to intervene in problems) have also been identified as key variables in understanding high-crime streets.

Figure 8

Crime Hot-Spot Street Segments, 2020



Source: ArcGIS 10 (additional information available upon request)

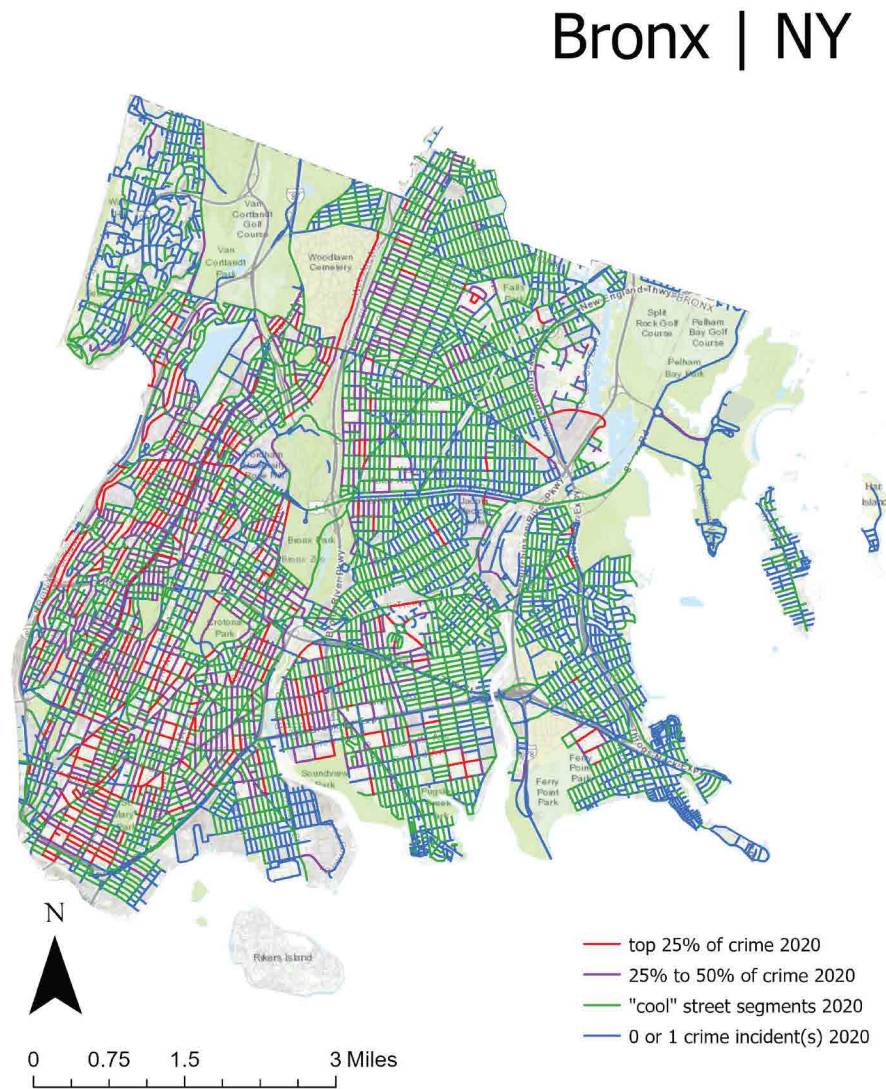
FIGURE 9 zooms in on the geography of the Bronx, one of the higher-crime boroughs in 2020. It shows four crime-level patterns. The hottest hot spots (the 1.4% of streets in the city producing 25% of crime) are in red; the next level of hot spots (the additional 4.3% of street segments producing 25%–50% of crime) are in purple; the streets with little or no crime (zero or one crime report in a year) are blue; and others (which might be termed “cool spots”) are in green. The first conclusion to be drawn: the majority of Bronx streets have little or no crime or relatively low crime levels. Blue and green are the dominant colors on this map. Second, the hot-spot streets are spread across communities in the borough, though there are far fewer in its northeastern sections. Even in the southwestern areas, which have many more hot spots, blue and green streets are the majority.

Throughout the map, there is a great deal of street-by-street variability, with the highest-crime streets often adjacent to streets with little or no crime. This means that it is misleading to classify whole neighborhoods as crime hot spots, since the majority of streets—even in higher-crime areas—are not. This is an important lesson for police and ordinary citizens who mistakenly see very large areas as crime-ridden.

This point is reinforced when we look specifically at violent-crime hot spots (FIGURE 10). In this map, we follow the approach in the general crime map but define cold streets as those with no violent crime. Street-by-street variability is even more pronounced; even in larger areas with relatively high violent-crime levels, most streets are not hot spots. Indeed, cold and cool spots are the dominant street-segment types throughout the various communities in the Bronx. Again, it is a mistake for the police or the public to characterize entire communities as violent-crime hot spots.

Figure 9

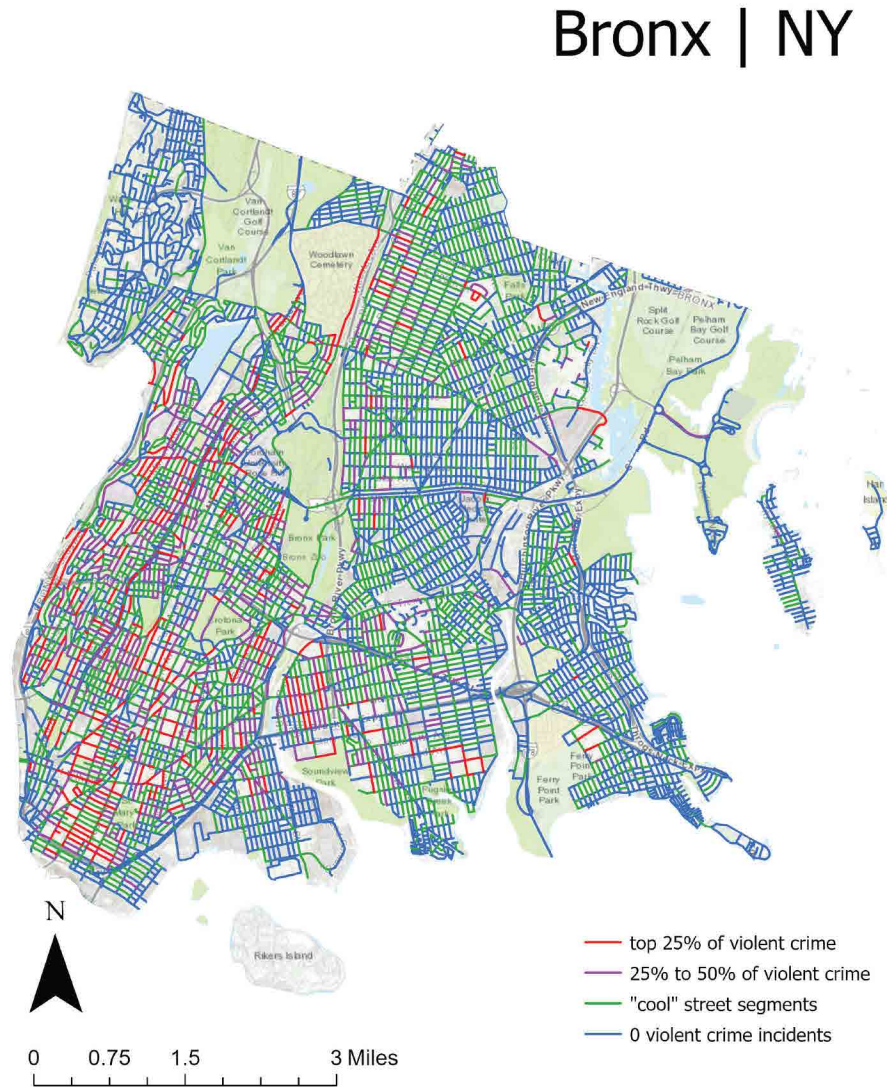
Street-to-Street Variability of Crime in the Bronx, 2020



Source: ArcGIS 10 (additional information available upon request)

Figure 10

Street-to-Street Variability of Violent Crime in the Bronx, 2020



Source: ArcGIS 10 (additional information available upon request)

An important question is whether the crime hot spots stay relatively stable geographically. We map the hottest crime streets in the Bronx to illustrate this pattern for 2010 and 2020 (FIGURE 11a and FIGURE 11b). It is apparent that the geographic patterns of the maps are similar. This does not mean that streets do not change in terms of their crime levels, but it does suggest a good deal of stability across time. This is reinforced by looking at the streets in the Bronx that were in the highest hot-spot group (which produced 25% of crime in the city) in 2010 and asking whether they continued to be so in 2020. Of streets that were high-crime hot spots in 2010 (top 25% of crime), almost half (50%) were high-crime hot spots in 2020. An additional 45% of streets moved from the highest hot-spot category to the second category (which produced 25%–50% of crime). This suggests that nearly all the streets that were hot spots as we have defined them in 2010 were also hot spots in 2020.

These findings are not surprising and follow earlier studies about crime stability over time at micro-geographic units (e.g., Weisburd et al., 2004). There are many reasons for crime remaining relatively high at hot spots, including environmental factors such as population density or shopping areas that are strongly correlated with crime at place (Weisburd, Groff, and Yang, 2014). These findings point to the importance of maintaining crime-prevention efforts at places with characteristics that make them continually vulnerable to crime.

Figure 11a

Bronx Crime Hot Spots, 2010

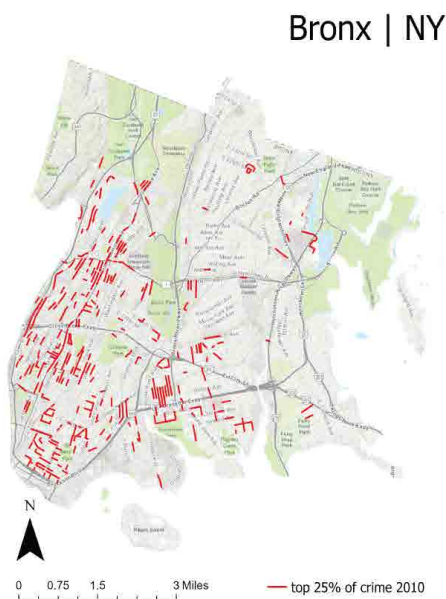
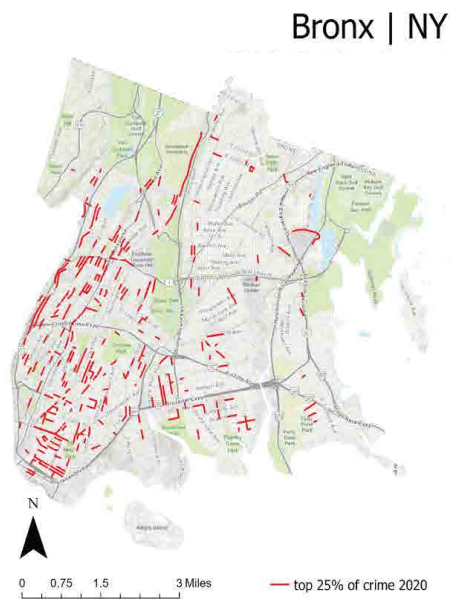


Figure 11b

Bronx Crime Hot Spots, 2020



Source: ArcGIS 10 (additional information available upon request)

Discussion

While New York in the 1990s was perceived as one of America's most dangerous cities, today it is regarded as one of America's safest. Crime levels support these perceptions. In 1990, there were more than 2,000 murders; in 2020, there were 463. The index crime level declined from 711,556 crimes in 1990 to 170,120 in 2019. The number of crime reports declined by about 19% between 2010 and 2020. Despite recent upticks in violent crime, there is no question that the city's success in achieving declining crime levels is a major achievement.

There are likely many reasons for this success. Improving economic conditions, changes in the youth population, and increased employment are all possible causes (Rosenfeld and Weisburd, 2016), but policing strategies are also high on the list. New York was one of the first major U.S. cities to develop more focused geographic responses to crime problems, capitalizing on the idea of crime hot spots and hot-spot policing (Zimring, 2012; Weisburd, Telep, and Lawton, 2014). Beginning in the 1990s, the NYPD also reformed its management systems in policing through its CompStat program (Weisburd et al., 2003), which enabled more efficient usage of what is the country's largest police agency.

Unfortunately, the NYPD did not look to rigorous research to assess the impacts of its innovations, so it is impossible to tell to what degree its new policing strategies contributed to the crime drop. Nonetheless, there is substantial scientific evidence that focusing police resources on hot spots can provide meaningful crime-prevention benefits. Two National Academy of Sciences reports on policing have concluded that such strategies are effective in reducing crime (Skogan and Frydl, 2004; Weisburd and Majmundar, 2018), as has a Campbell Collaboration systematic review (Braga et al., 2019b; Braga and Weisburd, 2020). It is reasonable to conclude that policing provides an important tool for reducing crime on high-crime streets.

Nevertheless, events in recent years across the U.S. and NYC have led to demands that cities defund or reduce the imprint of their policing (Stockman and Eligon, 2020; Hawkins, Mettler, and Stein, 2020; Levin, 2020; see also Vitale, 2017). In New York, these demands gained greater momentum with the controversy over the NYPD's Stop, Question, and Frisk (SQF) programs.

During 2003–10, the number of SQFs increased threefold, from about 200,000 to about 600,000. This growth was the result of a direct policy decision of the NYPD, which sought to compensate for a decline in police strength with an increase of aggressive policing strategies in specific areas (Weisburd, Telep, and Lawton, 2014; Baker, 2007). A series of studies showed that the application of SQFs led to substantial racial disparities that could not be fully explained by the circumstances or locations of the stops (Fagan and Davies, 2000; Gelman, Fagan, and Kiss, 2017; Meares, 2014; Ridgeway, 2007; Stoudt, Fine, and Fox, 2012). There was also growing evidence of negative social and health outcomes for the many young minority men who were the primary subjects of the police tactic (Brunson, 2007; Brunson and Weitzer, 2009; Anderson, 2013; Geller et al., 2014; Geller, Fagan, and Tyler, 2018; Levine and Small, 2008; Link and Phelan, 2001; Sawyer et al., 2012; Sewell and Jefferson, 2016). The finding by a federal judge that the city's SQF program violated constitutional requirements led to the practice being sharply curtailed (*Floyd v. City of New York*, 2013) and to the ongoing monitoring of the NYPD's operations (see Center for Constitutional Rights, 2015; Goldstein, 2013).

The history of SQF and protests against policing in NYC and across the country over putative racial biases and abuse by police, as well as very large reductions in crime, led to a \$1 billion reduction of the NYPD budget in June 2020—a sum that was criticized as too low by many politicians and activists (Rubinstein and Mays, 2020). While demands for defunding have declined (Mays and Fitzsimmons, 2021), there is still a strong movement to “reduce the NYPD's footprint in the city” (Robbins and Khan, 2021).

Recent upticks in violent crime, as well as surveys suggesting that citizens are more afraid of crime, have put crime control back in the headlines and at the center of the election of NYC's next mayor in September.¹¹ While there is wide agreement on the need for reform that would reduce unwarranted disparities in policing in disadvantaged minority communities, it is abundantly clear from our data that many city streets still have very high crime levels, requiring a police presence.

In 2020, the NYPD reported more than 39 crime events on each of 1,151 street segments in NYC. These 1,151 streets had average crime levels of more than 70 crime reports. Many NYC streets suffer from crime levels that need efficient, effective, and fast responses by the police. Such streets are spread across the city's five boroughs, and many have a history of serious crime problems.

NYC's declining crime level over the past decade, in short, has not reduced the need for policing. The crime levels on the 1% and 5% of streets that produce about 25% and 50% of the crime problem are still at very high levels.

Over the past four decades, the police have become much more proficient at fighting crime. This is indicated not only by declining crime levels but also by a large number of rigorous evaluations of proactive policing. A recent National Academy of Sciences report (Weisburd and Majmundar, 2018) concludes that a series of innovative policing interventions developed over the past few decades are effective in reducing crime. These include programs that increase police patrol at crime hot spots (hot-spot policing—Sherman and Weisburd, 1995; Braga and Weisburd, 2020); programs that seek to identify and deter serious violent offenders often operating on high-crime streets (focused deterrence policing—Braga and Kennedy, 2021; Braga, Weisburd, and Turchan, 2018); programs that seek to gain the support of landowners and business owners to control crime at place (third-party policing—Mazerolle and Ransley, 2005); and programs that seek to identify and respond to the underlying causes of crime problems at places (problem-oriented policing—Goldstein, 1990; Weisburd et al., 2008; Weisburd et al., 2010; Hinkle et al., 2020). These are all evidence-based tools that can be used to fight crime.

Nevertheless, it is important to caution policymakers, and particularly police executives, that evidence-based strategies to address crime do not in themselves lead to public support for the police. This lesson is particularly relevant to NYC and the NYPD. While there is some evidence of the crime reduction effects of SQFs, especially at high-crime hot spots (Weisburd et al., 2016; Sherman, 1990), its impacts on public attitudes toward the police in minority communities have been very negative (Evans and Williams, 2017; Solis, Portillos, and Brunson, 2009; Gau and Brunson, 2010). In the minds of many police executives, being successful in reducing crime should be enough for them to gain the trust and support of the public. Research suggests that it isn't.

In democracies, the police must be agents of the community, who operate with the support and ascent of that community. Addressing high-crime streets needs to go hand in hand with efforts to improve the NYPD's relationships with communities.

We want to emphasize that there are opportunities for addressing crime on very high-crime streets that do not involve policing directly. For example, in a recent study supported by the National Institutes of Health (NIH), trust in one's neighbors and willingness to intervene in problems on a street were found to be among the strongest predictors of crime at street segments (Weisburd et al., 2021). When residents were asked whether people on their block could be trusted, 84% of people living on low- or no-crime streets said yes (Weisburd, White, and Wooditch, 2020). This was true of less than 50% of residents of the highest-crime streets.

A focus on areas with high crime has been the key to successful prevention programs, such as hot-spot policing. The NIH study suggests that it also provides promise for programs that seek to increase the willingness and ability of residents themselves to control crime. We think that, in developing crime-prevention programs for high-crime streets, it is important to consider how informal social controls—not merely the formal control mechanisms of policing—can be harnessed to reduce crime. This would take an investment not only in policing but in other city agencies and resources. Social workers, community organizers, and community psychologists would be the best agents to work with people who live on hot-spot streets to help them become activists in preventing and responding to problems. We think that adding such nonpolice approaches to prevention will not only create greater crime control; it would likely reduce friction between the police and public—the police would have to intervene less, and residents would be better organized to enlist police support in ways that reflect community norms.

Conclusion

Our analyses suggest that it is simply rhetoric to imagine that crime is so low on New York City streets that there is no need for policing. Despite a large crime decline over the last few decades, hot-spot streets continue to be “hot,” and a very large number of streets are faced with high crime levels. Looking at overall crime rates in NYC masks the very serious crime problems that face many New Yorkers who live or work on hot-spot streets. While police reform and efforts to identify social and community-based solutions to crime problems should be a central part of the city agenda in NYC, policing continues to be a critical service needed by large numbers of streets in the city.

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Endnotes

- ¹ As we explain later in this paper, street segments form a natural building block for understanding crime in cities, but we follow most scholars by excluding intersections from analyses of street crimes. For this paper, we use the terms “streets” and “street segments” interchangeably for readability. A visual representation of a street segment is shown in FIGURE 1. Importantly, the concentration of crime at intersections in NYC follows closely that of street segments (Weisburd, Telep, and Lawton, 2014).
- ² Index crime data include federally defined violent crime (murder, rape, robbery, and aggravated assault) and property crime (burglary, larceny, and motor vehicle theft) submitted to the New York State Division of Criminal Justice Services and the Federal Bureau of Investigation. See New York State, [Data.NY.gov](https://data.ny.gov/), Index Crimes by County and Agency, Beginning 1990.
- ³ This is based on preliminary index crime data from the police, as reported by the NYS Division of Criminal Justice Services, Criminal Justice Statistics.
- ⁴ NYC OpenData, “NYPD Complaint Data Historic.” Crime reports as defined here are similar to crime incidents as defined in many other jurisdictions. Crime incidents differ from “crime calls,” in that the police have defined the event as a crime.
- ⁵ Reports involving multiple offenses are classified according to the most serious offense. Only valid reports are included in this data set—reports deemed to be unfounded are excluded.
- ⁶ This number represents the street segments included for the current analysis. Pedestrian walking paths, highways, freeways, train tracks, ramps, shorelines, private drives, and airport roads are removed.
- ⁷ In 2010, 2015, and 2020, crime reports occurring at intersections made up 19%, 17%, and 13%, respectively, of the data.
- ⁸ As noted, preliminary data suggest a rise in index crimes in 2020, as contrasted with 2019. At the same time, the NYPD reports that in “calendar 2020, overall crime was lower than in 2019.” See NYPD, “Overall Crime in New York City Reaches Record Low in 2020,” Jan. 6, 2021.
- ⁹ The high level of concentration raises the issue of what characterizes the hot spots of NYC crime; e.g., are crime hot spots likely to be located in urban centers or near housing projects? Identifying characteristics of the hot spots is beyond the scope of this report, though the maps we produce later suggest that concentrated urban populations, commercial areas, and areas with high levels of disadvantage are all correlated with being a hot spot. For research that delves more deeply into why crime hot spots are hot, see Jones and Pridemore, 2019; Weisburd, Groff, and Yang, 2012; and Weisburd et al., 2021.
- ¹⁰ We draw these numbers from the proportion of crime found at intersections; see n. 7 above.

- ¹¹ E.g., see Nicole Gelinas, “How to Increase Public Safety on NYC Subways,” Manhattan Institute, July 2021. The Metropolitan Transit Authority, she notes, reported that “in April 2021, just 26% of riders feel safe from crime and harassment on the trains, down from 65% in the final quarter of 2019, pre-pandemic. In stations, only 34% of riders feel safe, down from 70%.” Index crimes over 2019–20 in NYC rose 4.2%; murder rose 46.7%, aggravated assault 2.3% and burglary 41.2%: FBI, Uniform Crime Reporting File, “Index Crimes Reported to Police by Region: 2011–2020.”