The moratorium's violent paradox: assessing the eviction moratorium's impact on shootings in NYC

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Abstract

Common explanations for evictions are centered on analyzing its causes and effects using socioeconomic factors like poverty or unemployment. Yet, few studies have focused their attention on the disruptions imposed by the COVID-19 pandemic over communities. In this sense, using a unique policy change like the moratorium, this research is novel at assessing the causal relationship between two policy priorities in the US: gun violence and evictions. Findings suggest that the eviction moratorium significantly increased shootings in zip-codes with prevalent levels of higher evictions. These results are coherent with New York City's (NYC) official statistics about crime: gun violence increased dramatically even though other crimes were decreasing between 2019 and 2020. Primarily, this counterintuitive result illuminates the importance of analyzing crime as an interaction between communities' well-being and the goals of criminal organizations.

Introduction

The eviction moratorium implemented in NYC in March 2020 protected millions of renters from experiencing the rigors of not having a permanent shelter (Brenner, 2020). As a policy change, the eviction moratorium created a unique opportunity to understand how a variation in the number of evictions could influence phenomena attributed to poverty or inequality. Simultaneously, the implementation of NYC's lockdown almost at the same time as the eviction moratorium was a major social change that influenced the levels of crime across neighborhoods.

According to De Nadai (2020), common explanations for crime can be grouped into two categories. The first category is Routine Activity Theory (RAT), where crime tends to occur in small areas such as street segments or parks. These small areas are useful scenes for criminals to spot potential victims because of the setting that lacks public enforcement or community intervention.

The second category focuses its attention on understanding the attributes of the neighborhoods and their cultural context: according to Social Disorganization Theory (SDT), crime tends to happen in socioeconomically disadvantaged places where the "lack of social integration of its inhabitants, high residential turn-over, and high ethnic heterogeneity triggers group behaviors associated to crime" (Rengifo, 2017).

These two categories are useful because they give a perspective on how the experiences of poverty are connected from the level of the individual to the level of the neighborhood. Analyzing crime as a geographical phenomenon (RAT), helps to explain the type of experiences that people live on a daily basis. Imagine a mother who is a head of household that lives in The Bronx, who every morning wakes up and has to go to the train station and commute to work in a restaurant in Manhattan. Her routine, like so many others, shapes the way by which the public space is being used. The behavior of criminals and gangs changes with the behavior of people and communities in public spaces; when there are more people using public spaces, there are more potential victims or sensors of crime. Furthermore, a level of integration between this mother and her local community may raise the cost of crime when there is a mutual investment between community members. This means that when neighbors become interested in each other, they would be more compelled to care about the property and well-being of their neighbor through vigilantism (such as calling the police). This paper's research integrates both RAT and SDT frameworks: what happens to the neighborhoods and what happens to the individuals living in the neighborhood defines the capacity of the housing-stable community for reducing crime before even public enforcement is required.

A useful approximation to understand what types of communities in NYC are affected by crime and evictions is represented in the following graphs. Graph 1 helps to narrow down the geographies where crime and shootings happen in New York City. In particular, shootings have been historically higher in disadvantaged neighborhoods of The Bronx and Brooklyn as can be observed in Graph 1– Kernel density graph for shootings (right side). Furthermore, the Kernel density for evictions helps to visualize that crime and evictions are happening in the same socioeconomically disadvantaged areas of Brownsville, Flatbush, and East York in Brooklyn and University Heights, Belmont, Morris Height, and Harlem between upper Manhattan and The Bronx.
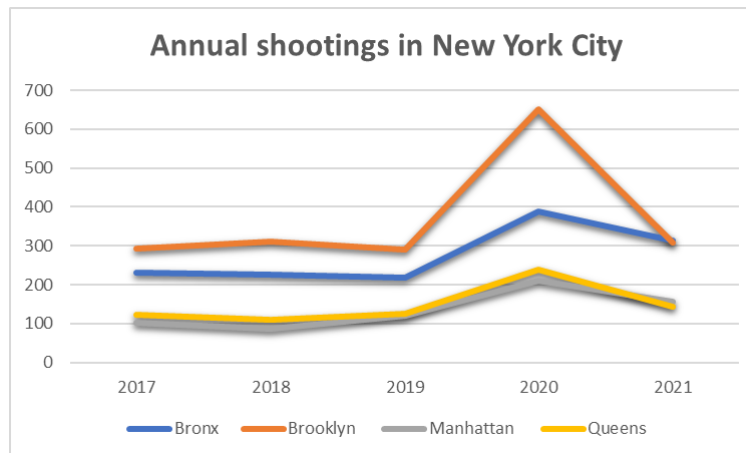
Graph 1
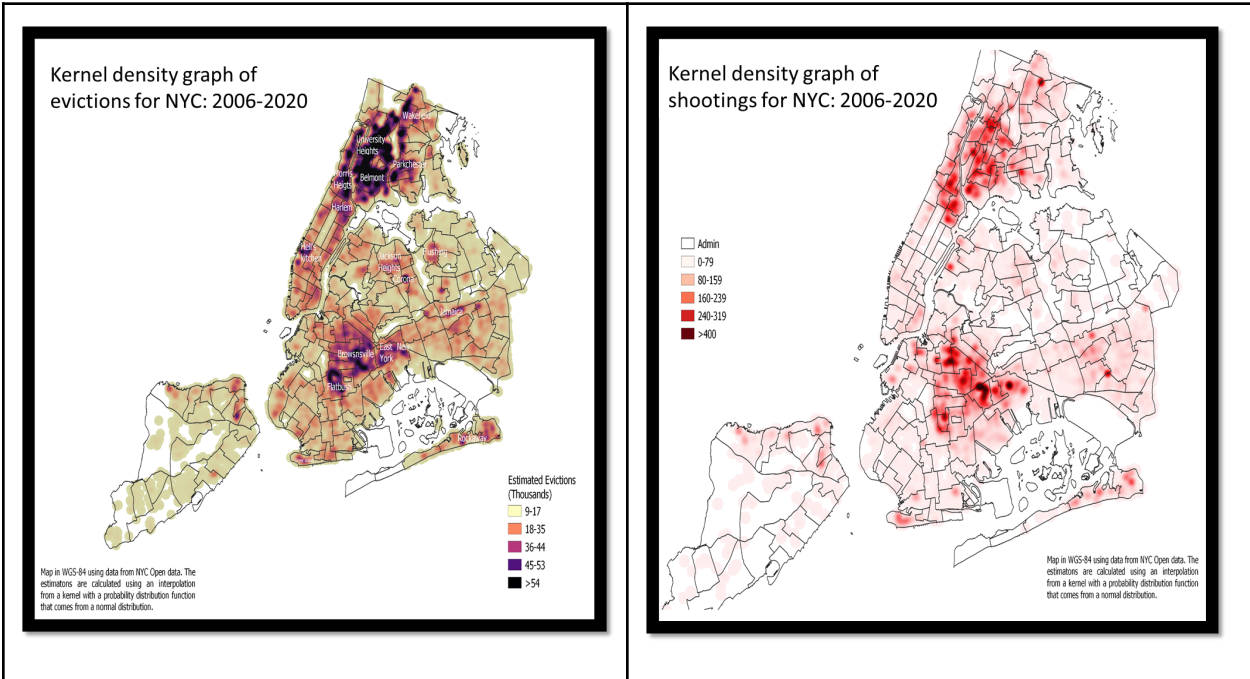
Source: NYC Open Data (2022)

In addition to the geographical insight provided by the previous maps, Graph 2 specifically shows that trends in evictions that particularly increased during 2020, relative to previous years:

Graph 2

Source: Own elaboration using John Jay (2021) data

Both Social Disorganization Theory and Routine Activity Theory are plausible explanations to understanding the concentrations of crime in Upper Manhattan, The Bronx, and Brooklyn: victims and attackers were abundant given the concentration of gangs in The Bronx and Brooklyn, where most of the socioeconomic indicators show a disadvantaged population relative to other neighborhoods. A notorious example of these types of neighborhoods is Belmont in The Bronx, located within both clusters of shootings and evictions, where only 5.1% of the population are homeowners and where the poverty rate is 40.1%, 2.5 greater that citywide average of 16% (Furman, 2019).

Crime in times of the COVID-19 pandemic

The pandemic increased the importance of urban crime to policymakers considering the recent statistics showing a dramatic increase of certain felonies from 2019-2020. Furthermore, this level of importance can be observed when President Biden's State of the Union highlighted gun violence as one of the most urgent policy challenges (White House, 2022).

According to the New York City Police Department, serious crimes are composed by seven major felonies: murder, rape, robbery, felony assault, burglary, grand larceny and

grand larceny of motor vehicles (Crime Stats, 2022). Particularly within felony assault, murder, guns and shootings experienced an increment during the pandemic that indicated, *a-priori,* how criminal structures were benefited by the conditions derived from the pandemic. An initial work performed analyzing the intersection between crime in times of COVID-19 showed that in Los Angeles, San Francisco, Detroit, and NYC, minor crimes were declining whereas the more serious crimes category were rising in their occurrence rates (Boman and Gallupe, 2020; Abrams, 2020; as cited in Esposito, 2020). These increasing trends in more serious crimes happened after shelter-in-place policies were applied between March and April of 2020. Complementary to these findings, Sutherland (cited in Esposito, 2020) showed in a cross-sectional analysis between NYC, LA, Baltimore, and Chicago that significant increments of shooting incidents occurred above the average rates compared to other crimes across these major cities. Shooting incidents rose by 11.7% relative to 2019 in NYC, by 23% in Chicago, and by 2% in Baltimore.

The rise of more serious crimes at the beginning of the pandemic in 2020, in comparison to minor crimes, indicates that criminal organizations were benefiting from the lockdown and moratorium. An emerging explanation provided by several studies links how COVID-19 disrupted people's daily activities and seemed to have also impacted the frequency of certain crimes. According to Chen *et al.* (2021), the disruption of COVID-19 constituted an opportunity to test environmental crime theories as it is the case of the Routine Activity Theory (RAT) created by Cohen and Felson (1979). Under the lens of RAT, a plausible way to explain a drop in non-serious crimes, such as drug possession or forgery, can be explained by a reduction in the geographical convergence of offenders, victims, and guardians. As a result, in NYC, "burglary declined in residential blocks due to the increased presence of guardians; homes were no longer left unattended at predictable hours. [Conversely,] in mixed land use blocks where businesses were left closed and unguarded, burglary increased significantly" (Esposito, 2020). The RAT framework is suitable to explain the rise of gun violence in NYC. Once NYC's citizens were concentrated in their homes, public spaces normally transited by

crime victims and also supervised by authorities remained desolated and propitious for illegal organizations to commit crimes.

After shelter-in-place policies were implemented, the expansion of gang operations within disadvantaged neighborhoods implied an intensification of their criminal activities (Abrams, 2021). Even before the pandemic, gangs, as opposed to individual criminals, have a greater capacity to fund their crime. Braga (2021), provides evidence suggesting that criminal organizations have more capacity to acquire guns because of their increased resources, allowing them to acquire more sophisticated tools to support their modus operandi. Also, because of their connections with gang members, even individual criminals are more able to acquire guns in Brooklyn and The Bronx. The results provided by Braga are likely to be applicable to the period of the pandemic because of the higher demand in the illicit drugs market. This demand was boosted by the toll of mental health on many New Yorkers suffering from the different burdens of the pandemic. According to the U.S. Drug Enforcement Administration (DEA): "[in 2020,] there was a 214% increase in methamphetamine and 59% rise in fentanyl seized in New York, in comparison to 2019" (DEA, 2021). Furthemore, the conclusions of DEA show that: "there leaves little doubt that drug trafficking and violence go hand in hand. There was a significant increase of 137% of guns seized as part of our investigations from 2019 to 2020" (DEA, 2021). Therefore, we can see gangs receiving more income by commercializing drugs in places where, before the lockdown, there was more surveillance and more difficulty in dealing drugs.

The research of Brantingham *et al* (2021), showed that Los Angeles' violence was largely attributed to gang activities because their illegal activities remained uncompromised by the changes imposed by pandemic in 2020, and increased over time particularly when streets remained empty at the quarantine's onset. In addition, Bratingham (2021), showed that gang crime level remained unchanged relative to non-gang crimes once shelter-in-place mandates were enacted. Moreover, gang spatial activity seemed to be clustered at the neighborhood level and not expanding outside the gang's influence area, corroborating the description provided by De Nadai (2020) in

relation with crime happening in reduced geographical areas. Furthermore,the previous evidence suggests gang activity as a plausible differential factor explaining why gun violence was prevalent and increasing after shelter-in-place policies started on March 20th of 2020.

Gangs are more likely to use the public space for their operations due to the nature of their drug trafficking business which demands a territorial control of the public space (Bratingham, 2021). Decker (1996) depicts these gang's territorial control as motivated due to the economy of gang reputation--the utility of one gang being feared by other gangs from their illegal activities or routines: targeting victims, committing homicides and executing aggravated assaults with greater frequency specifically to build or defend reputation.

Communities and gangs compete for public space in corners, parks or streets. The study of Buonanno et al., (2009) provides an approximation of how communities reduced the level of gang's influence in a determined area: "both civic norms and associational networks have a negative and significant effect on property crimes across Italian provinces". Therefore, the social capital of communities might contribute to reducing the amount of criminal activity in the public space. The opposite to the previous statement is true; weaker community networks produce weaker civic norms and more available spaces to be conquered by gang networks. As a result, evictions reduce the level of connection among neighbors because it cuts the social processes that enable trust and cooperation. Both, trust and cooperation, are essential for gangs and the communities because it facilitates collective action: active or trusted members of a community or a gang might increase their individual level of earnings through sharing knowledge, capital or exerting social control over public institutions (Putnam, 1994). As a result, neighborhoods with high levels of evictions, or where social capital formation processes have been constantly disrupted, are likely to have low collective action (a scarcity of civic norms). Whereas, for gangs, this low communitary collective action represents more available public spaces for crime.

In synthesis, the pandemic, particularly after the lockdown and moratorium period were enacted, induced variation not only in the level of evictions, but also accelerated the erosion of the social capital in NYC neighborhoods where the eviction rates were higher. Highly evicted neighborhoods whose inhabitants possibly were low-wage workers lost their employment in the collapsed service economy like bars or restaurants (Porter, 2020). With less expected income as a result of the lockdown, low wage workers were likely to reduce their geographical displacements to their job or buy food. Meanwhile, the displacements of the illegal organizations increased in absence of communities who call the police and businesses that attract public enforcement action.

With the main conceptual framework of the present study explained, the remaining is structured as follows. In the following section, I present the literature review where I discuss the most prominent research works explaining how a variation in the number of evictions affects the levels of crime. Afterwards, the data, identification strategy, and the results are described. Finally, results are discussed emphasizing the implications and remaining questions derived from the described findings.

Literature Review

Recent research related to eviction and shootings is scarce and, particularly, the research on evictions and shootings in times of the COVID-19 pandemic. Due to this scarcity, the present chapter discusses the most recent and relevant contributions in the intersection between the main variables of the present study: shootings and evictions.

Semenza's (2021) research work in Philadelphia during 2006-2010 is pertinent because it demonstrated that evictions increased burglaries and robberies, but also that also their causal strength was higher in more serious crimes, as it is the case in homicides. Later, Semenza and Stansfield (2022) demonstrate how housing unaffordability and eviction filings were drivers of higher rates of violence in neighborhoods with higher proportions of Black inhabitants. In the case of Semenza (2021), the employed analysis method was Generalized Estimated Equations (GEE). GEE is useful because it

primarily allows us to account for the variation between eviction and gun violence within and across neighborhoods. In the case of Semenza and Steinfield (2022), fixed effects are used because of their interest in evaluating the change effect at the neighborhood level and, at the same time, controlling for time-invariant unobserved characteristics.

Despite the importance of the previous results--that eviction, indeed, has an impact on crime and that socioeconomic factors aggravate the effect of evictions on crime--both studies ignore the variation created by the moratorium and the lockdown. Furthermore, those studies were centered on the socioeconomic factors already described by previous research studies affiliated with the theories of social disorganization. In addition, Semenza (2021), and Semenza and Stansfield (2022), did not provide an explanation to account for the role of criminal organizations as a direct factor in producing crime. For these reasons, the contribution of my paper's research is pertinent because it incorporates sources of variation derived from the pandemic and the moratorium for a particular crime that exhibited an anomalous trend: shootings. Shootings are a very different type of crime than burglary or a theft -- which are less likely to be performed by a gang -- a shooting is likely to be performed by a criminal organization (Bradingham, 2021; Braga, 2021).

Data

NYC Open Data (NYCOD) portal was the main source of information for the collected data. The main deterrent was the availability of geographical information pertaining to the mentioned variables at the unit of study: zip-code month level. Having in mind the previous constraint on data availability, the eviction data was obtained from the NYC Department of Investigation. This data set contains a historic geolocalized record of "pending, scheduled and executed evictions within the five boroughs" (NYC Open Data, 2022). For shootings, the data source is the NYPD and it contains geolocalized records representing "a shooting incident in NYC and includes information about the event, the location and time of occurrence" (NYC Open Data, 2022). Finally, in relation to gangs, there was not a database measuring the level of gang incidence per zip-code in NYC.

For this reason, it was necessary to use a proxy variable. The NYPD Arrest Data (Year to Date) contains "each record represent[ing] an arrest affected in NYC by the NYPD and includes information about the type of crime, the location and time of enforcement" (NYC Open Data, 2022). In addition, data related to gang's influence was obtained by filtering NYPD historic arrest data to only show "conspiracy" crimes, which refers to a group of individuals who were arrested and confessed to be part of the same criminal organization.

Using the previous data sources, an unique database was obtained by merging the three datasets at the zip-code month level. Given the limitations of availability, the period where the three databases (shootings, gang arrests, and evictions) was available comprehended from 2019 to 2020. The result is an unbalanced panel-dataset containing 3,545 observations at the zip-code month level.

Research Design

To understand the relationship between evictions and shootings, the main consideration at the moment of finding the correct identification strategy was to avoid the endogeneity coming from a third covariate (like poverty or unemployment); this endogeneity could potentially be related to both shootings and evictions. Secondly, based on the explained previous research studies, it is plausible that after a household gets evicted, the likelihood of a shooting could increase due to gang activities. Gangs and communities compete for public spaces that allow them to perform their daily activities. Therefore, before the moratorium, evictions reduced the capacity of the communities to protect the public space because of how evictions destabilize a communities' trust and cooperation among neighbors: the continuous rotation of different residents in and out of a neighborhood stops the social processes of people getting to know each other by creating bonds and civic norms like vigilantism over property or protecting children. After the moratorium, it is expected that evictions were reduced in a specific period of time which could potentially contribute to isolating their causal effect over shootings.

Therefore, the first model is a difference-in difference identification designed to avoid the potential bias from a third factor influencing both evictions and shootings:

$$(1) \; Shootings_{it} = B_0 + B_1(High\;Evictions_i \times Moratorium_t) + \delta Zip + \gamma month + \epsilon_{it}$$

Where the subscripts "i" represents the zip-code and "t" is the month expressed using a numeric scale from 1 to 24, starting in January. Shootings per zip-code month is a continuous variable measuring the number of shootings per zip-code month.

In the case of "evictions" per zip-code (Evictions sub i), the variable represents a binary variable classifying areas with high and low number of evictions per zip-code month in the pre-moratorium period. Treated units were coded with one and represent the areas with higher levels of evictions using the median as a measure of central tendency.

The variable "moratorium" is a binary variable identifying the periods after the eviction moratorium happened. According to NYU Furman Center, the eviction moratorium was declared by Governor Cuomo on March 20 of 2020.

The interaction between "evictions sub i" or evictions per zip-code and the moratorium per month produces the difference-in-difference estimator which is the main variable of analysis comparing the impacts of the eviction moratorium by comparing the pre and post moratorium levels of evictions and their impact over shootings.

Finally, "gamma ZIP" and "delta month" represent zip-code and month fixed effects.

Using the previous identification strategy, it was expected a reduction of evictions as a direct result of the moratorium. This specific negative variation in the number of evictions due to the moratorium should, in principle, contribute to identifying the variation over the number of shootings.

A second model was estimated in order to understand what was the differential impact of gangs over zones with higher levels of evictions; in these zones, it is expected that

the moratorium had higher levels of impact over shootings. It is expected that those zones with higher levels of gangs, with higher levels of evictions, and within the moratorium will have a differentiated impact derived from the eviction moratorium. The specification for model 2 goes as follows:

$$(2)\ Shootings_{it} = B_0 + B_1(HighEvictions_i \times Moratorium_t) + B_2(Evictions_i \times Moratorium_t \times HighGangs_i) + \delta Zip + \gamma month + \epsilon_{it}$$

Where:

The variable "highGangs sub i" is a binary variable that classified the zip-codes into those with above median gang activity in the pre-moratorium period. The interaction of highGangs with the diff-in-diff estimator (Evictions) allows us to understand whether the level of gangs created a differentiated impact over shootings.

Results

Based on the result of Table 1, after the eviction moratorium, there was a moderate increment in shootings particularly in zip-codes with above median evictions in the pre moratorium period. The magnitude indicates that one eviction produces 0.28 shootings; in other words, roughly every four evictions cause one shooting. This result presents a counterintuitive direction of the expected effect derived from the moratorium.

In the second model in Table 1, the coefficient of the variable High Eviction x Moratorium x Gangs shows that zones with high gang influence have a greater impact over the number shootings: each eviction increases in a shooting in 0.23; in other words, roughly five evictions produce one shooting.

Table 1

| Table 1: Eviction Moratorium Effect on Shootings		
Shootings	1	2
High Eviction x Moratorium	0.28***	0.22**
High Eviction x Moratorium x Gangs		0.23*
Gangs		0.042
Constant	0.07	0.07
Number of Observations	3545	3545
R-squared	0.0466	0.0466
Mean	0.25	0.25
Standard deviation	0.8	0.8
Zip code Fixed effects	Y	Y
Month Fixed effects	Y	Y

Statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: own elaboration

Certainly, the moratorium diminished the number of evictions. This was proven by regressing the binary variable of shootings as the dependent variable and moratorium: the policy change or the moratorium reduced on average 8.5 evictions per zip code month with results significant at 95% CI. However, it is important to notice that the collected information for evictions corresponds with formal renters who had a lease contract. It is plausible that undocumented immigrants who were treated differently were not reflected in the official data because they did not have formal contracts. As a result, while the moratorium was effective in places with formal lease contracts, in places with high concentration of undocumented immigrants like those zip codes marked with economic disadvantage, landlords could have continued evicting regardless of the moratorium--which explains the positive coefficient for the variable "HighEviction x Moratorium."

In addition to the previous results, graph 3 presents an important check for the difference-in difference identification.

Graph 3
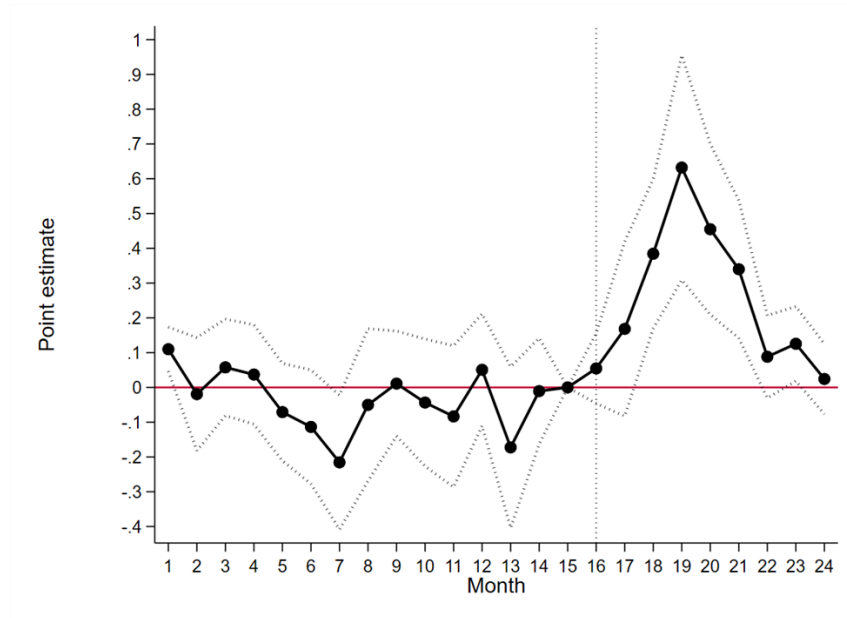
Source: own elaboration

Graph 3 presents the parallel trends assumption test using the regression coefficient pre and post moratorium. Based on the regression coefficients before the moratorium, it is credible to assume that the parallel trend assumption holds or that the pre-trends shootings for treated (above median evictions) zip-codes are parallel in comparison to the non-treated group

Discussion

Isolating the social cost from evictions constitutes an important milestone in the efforts for fighting poverty and inequality. From a holistic perspective, eviction has multiple costs beyond those individual burdens experienced by its victims in the US: evictions had strong relationship with homelessness (Farver, 2019), evicted people during the pandemic were more likely to be infected by COVID-19 (Nande et al, 2021), and forced displacement away from home seems to induce depression in single mothers head of household (Desmond & Kimbro, 2015). As a result, preventing the pernicious effects of evictions represents attacking a source of multidimensional social challenges.

Classic theories to explain how crime behaves at the neighborhood level indicate two possible explanations: the first one, Routine Active Theory (RAT), indicates that crime happens due to the convergence of suitable victims, absence of guardians, and willing offenders. The second one, Social Disorganization Theory (SDT) prescribes crime as the result of ecological urban factors related to the context of crime: socioeconomic disadvantage or disorganization reduces the communities' capacity to create natural mechanisms of crime control: shame, active intervention, or, in more extreme cases, self-defense.

The results for NYC during 2019-2020 indicate that both theories RAT and SDT offer complementary explanations. Based on Graph 1, evictions are geographically concentrated in areas with higher socioeconomic disadvantages. Particularly, highly evicted neighborhoods present a higher concentration of immigrants and residents whose yearly incomes are below the city average and who were potentially employed by the service economy that collapsed with the city lockdown and with the reduction in spending from richer New Yorkers (Badger, E., Parlapiano, 2020). Without employment and anticipating having future cash flows, there is evidence to affirm that an average New Yorker living in the highly evicted neighborhoods of Belmont or Brownsville radically changed their displacement routines by buying less food, not commuting to a job, and significantly reducing their social contact. Rajput's (2020), results show a significant reduction of human mobility in NYC after the local emergency was declared on March 13: "We see that in March, inter- and intra-borough movement of population declines, and towards the end of March, it reduces to a 60–90% lower value that continues until the end of April".

The reduction of economic activities due to the pandemic implied a reduction in communities' normal routines as well— both reductions, according to the RAT theory and the NYPD criminal statistics, reduced the amount of non-serious felonies as a direct consequence of less available victims on the street. As a response to this scenario, criminals expanded their operations along public spaces to offset income losses which eventually increased the friction amongst competing gangs through shootings or other

kinds of retaliatory actions. Braga, (2021) and Bratingham, (2020) support the previous claim by providing evidence that gangs did not reduce their criminal activities during March 2020, and opposite to their *modus operandi,* increased their criminal activity after in-shelter policies were implemented.

Conclusion

The present results show an increase in the levels of shootings in the zip-codes associated with prevalent higher evictions before the moratorium. A wrong conclusion would be to say that the moratorium solely created a pernicious effect by increasing the levels of shootings; this interpretation would be wrong because, firstly, it ignores the accumulated effect of evictions over the community's capacity to regulate crime through civic norms, and, secondly, this interpretation would ignore the effect of community routines. These results must be interpreted in a context of gangs directly affecting this phenomena: the drug market and increasing shootings. Research studies like Putnam (1993) show that healthy communities–where neighbors care about each other because of their level of trust and cooperation–reduce crime through civic norms. As a result, when communities are continuously disrupted by evictions (a rotation of neighbors), the social capital processes that produce civic norms and potentially regulated crimes get interrupted and the community by itself is not able to reduce crime. In these neighborhoods where communities' social capital is weak, evidence suggests that criminogenic behaviors tend to happen.

Furthermore, the neighborhoods where crime tends to concentrate are the same that exhibit high socioeconomic disadvantage given the concentration of immigrants and ethnic minorities. In this sense, the official information for evictions only collects records of renters with formal contracts while informal evictions; those evictions which are possibly experienced by undocumented immigrants remain without official measurement. As a result, the effect of the moratorium was innocuous in places with higher evictions before March 2020 because immigrants and historically discriminated ethnic minorities were still likely to be subjected to evictions.

Secondly, it would be wrong to affirm that the moratorium increased the number of shootings because this interpretation would ignore NYC's lockdown. Evidence suggests that communities and gangs compete for public space; when the economic activity is intense, communities are likely to use the public space. This raises the cost of crime considering the amount of people who could call the police or simply be witnesses of a crime. The lockdown shut many of the reasons for which an immigrant would go out of the home: to work in Manhattan where there is an important proportion of the low-wage opportunities in the service sector or just to simply buy food in the local bodega. As a result, when many of the vulnerable communities remained with more time at home because of the moratorium or the lockdown, evidence suggests that gangs continued expanding their particular modus operandi in public spaces previously shared with the community. Furthermore, secondary information regarding the gang's operations suggest that these organizations are more likely to bring more guns to NYC streets. This expansion created an intensified friction among other competing gangs trying to expand or protect their geographical influence--friction that created an elevated number of shootings at the onset of social isolation with the implementation of in-shelter policies.

The previous results should inform policymakers about the social cost of evictions. Understanding that highly unstable communities create a beneficial environment for criminals and particularly for armed criminal organizations should increase the urgency to produce more affordable housing and promote beneficial spaces for highly marginalized communities to develop the kind of bonds that would cut crime from its root.

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