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# The long-run impact of the 1968 Washington, DC civil disturbance

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Working Paper

## **The Long-Run Impact of the 1968 Washington, DC Civil Disturbance**

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### **Abstract**

This paper studies the urban development impacts of the civil disturbances that took place in Washington, DC following the assassination of Martin Luther King Jr. in 1968. We collect novel archival data that allow us to compare lots destroyed during the disturbances to neighboring properties on the same block. Though these lots exhibit no *ex ante* differences, destruction in 1968 led to large and persistent disinvestment. Destroyed properties were more likely to remain empty for 30 years and remain 20 percent less capital dense today. This finding, which contrasts with rapid rebuilding that has occurred after urban destruction in other historic episodes, highlights the stigmatization that resulted and the challenges that city leaders faced in taking on the redevelopment effort themselves.

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“In time, you’re going to have a renaissance in those riot areas, simply because there will be no land left elsewhere. It will be inviting and profitable”

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Walter Washington, 1983

Mayor/Commissioner of Washington, DC

1967 to 1979

## 1 Introduction

In 1968 the United States experienced “the greatest wave of social unrest since the Civil War” in an already tumultuous decade (Levy, 2018). The nationwide civil disturbances that followed the assassination of Martin Luther King, Jr. have been unmatched in scale until the protests and unrest of 2020 following the police killing of George Floyd. The 1968 disturbances, however, resulted in far more destruction to urban cores, which were already in the midst of a years-long wave of disinvestment in the postwar period. This disinvestment was caused by a variety of forces, including suburbanization, white flight, redlining, school desegregation, and more fundamentally systemic racism in American society (Baum-Snow, 2007; Baum-Snow and Lutz, 2011; Rothstein, 2017b).

In this paper we examine the extent to which the events of 1968 catalyzed changes in urban form. Our overarching goal is to understand the role disinvestment plays in an urban area’s long-run trajectory. The 1968 civil disturbances created a pattern of destruction that is essentially a form of disinvestment unrelated to property characteristics, conditional on neighborhood. The chaotic and concentrated nature of the civil disturbances resulted in destruction that was widespread but largely random. We use this episode to understand the long-term impacts of disinvestment on urban form and value. In addition, we probe the determinants of the extent and pace of the reinvestment that followed.

We focus on the disturbances in Washington, DC. The capital suffered some of the most severe unrest and destruction among cities in 1968, comparable to that of the 1965 Watts disturbances in Los Angeles or the 1967 disturbances in Detroit (Collins and Margo, 2007; Risen, 2009). Washington in particular suffered roughly 1,000 fires that burned down hundreds of buildings in a concentrated geographic area.

To identify the causal impact of disinvestment via destruction on long-run outcomes, we analyze the development paths of destroyed properties—those reduced to piles of bricks and ash—compared to undestroyed ones. Specifically, we compare individual lots whose structures were destroyed to other lots on the same block, including lots with structures that were damaged but not completely destroyed. In other words, we rely on the quasi-random path of destruction within a block, such as whether a fire simply damaged a building or compromised its structural integrity.

Using this intra-block comparison, we establish three stylized facts. First, lots with structures that were destroyed were not on differential pre-trends prior to the civil disturbance compared to other lots on the same block, and are statistically indistinguishable from those other lots in 1967, conditional on a parsimonious set of covariates. Second, reinvestment was very slow when measured by the most basic outcome of development, the presence of a structure on a lot. Many structures destroyed during the civil disturbances were not replaced for decades, becoming the site of surface parking lots or just weeds. This divergence with neighboring properties persisted for about 30 to 40 years. Third, the structural capital in place per square foot of lot size on lots with structures totally destroyed during the disturbance has failed to catch up, even today. Lots with structures destroyed in 1968 are today roughly 20 percent less capital dense than other properties on the same block.<sup>2</sup>

These findings contrast with two other historic episodes examined recently by other scholars. Hornbeck and Keniston (2017) and Siodla (2015) find that the Boston and San Francisco fires of 1872 and 1906 were followed by rapid rebuilding at higher capital intensity than the prior construc-

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<sup>2</sup>These results are largely in line with Collins and Margo (2007), who look across municipalities and find that the 1968 civil disturbances lowered property values particularly in black-owned residential neighborhoods up to at least 1980, using weather as a source of randomness in the occurrence of disturbances.

tion. Those scholars explain the higher intensity through two mechanisms: (i) that simultaneous rebuilding allowed property owners to capture the positive externalities of their own development, and (ii) that existing buildings had posed frictions to higher-intensity redevelopment. Our findings are more in line with Redding and Sturm (2016), who find that areas bombed during the London Blitz have lower property values today, and who emphasize the frictions to redevelopment that came about after Blitz-bombed sites were used for government subsidized housing.

Rapid rebuilding was the hope of many Washingtonians and city leaders after the 1968 civil disturbances, but instead these areas ended up being “left to rot” despite efforts by the city to spearhead redevelopment (Washington Post, 1973). To understand why, we begin by observing that the 1968 destruction took place in a very different economic and social context than these other historic episodes. The context of declining prices largely renders inoperative the mechanisms that led to rapid rebuilding. Both the Boston and San Francisco fires occurred in thriving downtown business areas and were not the product of ongoing racial tension, especially since both episodes predate the large migration of Black Americans north and west. In contrast, core areas of American cities were already the subject of ongoing disinvestment and considerable racial tension at the time of the 1968 civil disturbances. The underlying economic fundamentals are closer to the setting of urban decline described by Glaeser and Gyourko (2005).

What mechanisms caused slow and limited redevelopment? We review a survey of property owners taken after the destruction that suggests development was impeded by stigmatization from ongoing racism and racial tension, public safety concerns, and systemic inequities in the availability of insurance and financial services. We also note that most contemporaries likely expected low or negative expected price growth. In this context, the DC government acquired enormous amounts of property in the affected parts of the city by the early 1970s, including nearly all of the most destroyed properties and almost half all the properties on the three corridors we study.

## 2 The Washington, DC Civil Disturbance and Its Context

Martin Luther King, Jr. was assassinated April 4, 1968 in Memphis, Tennessee. While the 1960s were marked by civil disturbances across the country, those that followed the King assassination marked the apex of this unrest. In studying the aftermath of these disturbances, we highlight three key facts about the unrest in Washington, DC and the historical context in which the civil disturbance occurred.

First, even among the large civil disturbances of the 1960s, Washington, DC's civil disturbance was among the most destructive. Roughly 20,000 individuals participated in the unrest. More than 7,000 were arrested, 1,300 were charged with felonies and serious misdemeanors, and about 1,000 people were injured. By the end, 13,600 soldiers patrolled the streets. Hundreds of businesses and residences were damaged. Property destruction was the result of buildings being broken into and their contents damaged and stolen, but more acutely was the result of over 1,000 fires. At peak, arsonists set thirty new fires an hour. Fire departments from the suburbs and as far away as Lebanon, Pennsylvania, sent trucks. Despite the severe destruction, this episode involved smaller loss of life compared to other major civil disturbances of the 1960s. Twelve people died in the DC civil disturbances, many in fires set by arsonists, while 34 died in Los Angeles in 1965, and 43 in Detroit in 1967. (Jaffe and Sherwood, 1994; Gilbert, Ben W. and the Staff of the Washington Post, 1968; Asch and Musgrove, 2017a; Collins and Margo, 2007; Risen, 2009).

Newspaper reports in the following years contain heartbreaking stories about neighborhoods “left to rot” with vacant lots left unbuilt for years given the lack of interest from potential developers and investors. In 1970, reporters saw, on one street, “more than a dozen vacant lots, charred hulks of buildings, vast shells of apartment houses, with doors ajar and their twisted remains exactly as they were the day after they burned—fossils of Washington’s riot.”<sup>3</sup> These descriptions continued for years. In 1974, a headline stated the “city’s core is still in ruins.” On one block, reporters noted “the entire west side of the block is empty, long since leveled, and most of the east side has been abandoned.” In 1978 the sidewalk of one street “was littered with hypodermic

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<sup>3</sup>“Scars in People Point Up Riot Areas’ Needs,” *Washington Post*, April 6, 1970, p. A1.

needles and condoms. Buildings boarded up for 10 years slumped between weedy vacant lots.”<sup>4</sup>

Second, by 1968, the District—like many other American cities—was already experiencing population decline and changes in racial composition. As shown in Figure 1, the city’s population peaked around 800,000 in 1950, and declined to a low of slightly under 600,000 in 2000. The share of Black Washingtonians peaked at 71 percent in the District in 1970, up from 35 percent in 1950. Washington, D.C. had become a majority-black city in the late 1950s, in line with a nationwide pattern of white flight toward suburban areas, facilitated by the rise of the auto and discriminatory public policy, and fueled by the Great Migration of Black Americans from the rural South. Amidst these changes, the District’s prominence in the metropolitan region was declining, as the District accounted for almost 1 in 2 metropolitan area residents in 1950 but only about 1 in 3 in 1970. (Boustan, 2010; Asch and Musgrove, 2017b; Rothstein, 2017a; Schertzer and Walsh, 2012)

These trends were part and parcel with disinvestment in the urban core. Reports from the mid-1960s describe slumlords doing as little as possible to maintain buildings around the 7th street corridor in the Shaw neighborhood, knowing that their tenants had few other options. Indeed, the city was already developing urban renewal plans for the neighborhood even before the civil disturbances.<sup>5</sup>

Finally, the corridors destroyed during the civil disturbances have been the site of intense reinvestment over at least the past two decades. The damage to real property was concentrated along three predominantly commercial corridors: 14th Street Northwest, 7th Street Northwest (Shaw), and H Street Northeast. These commercial corridors were popular with Black Washingtonians, located in primarily black neighborhoods, and are the sort of inner core urban neighborhoods subject to disinvestment in the early postwar period. Figure 2 shows the location in the city. A half-century after King’s assassination, District neighborhoods – many of them adjacent to the corridors devastated in 1968 – top lists of “most gentrified” areas in the country (Brummet and Reed, 2019; Richardson and Mitchell, 2019). Or, in layperson terms, each of the three corridors we study now has an outlet of the high-end Whole Foods grocery chain, either directly in the corridor or within a

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<sup>4</sup>“City’s Core Still in Ruins,” *Washington Post*, April 4, 1974, p. C1.

<sup>5</sup>“Shaw Landlords Have Poor Repair Records,” *Washington Post*, March 25, 1968, p. A1.



few blocks. At the same time, the Black population share of the city has fallen. By 2010, the share of Black people in the District had fallen to about 50 percent from a high of 70 percent in 1970. This investment in American urban cores, and the rise in the population of those areas, was led in particular by college-educated whites (Baum-Snow and Hartley, 2020).

### 3 Data

We now describe how our data collection helps us to quantify the long-run impact of the 1968 civil disturbance. We analyze 76 blocks that cover three of the Washington’s pre-civil disturbance major business thoroughfares: stretches of 7th St NW, 14th St NW, and H St NE. These were not the only blocks damaged but they were the site of the most intense and concentrated destruction (Gilbert, Ben W. and the Staff of the Washington Post, 1968; Jaffe and Sherwood, 1994). At the time of the civil disturbances, these 76 blocks contained 919 lots that faced these three corridors.<sup>6</sup> To identify the official numbers for the lots on these corridors, we consulted historic real estate atlases made by the Baist company as of 1959-1967.

The 1967 lot is our unit of observation. Figure 3 shows what this unit of analysis looks like on the ground. The polygons shaded in red and gray are lots, which are situated within six distinct blocks in this figure. We only include lots that face the commercial corridors under study, which is 7th St NW in the figure. Thus, by “block” we technically mean block face.

Throughout our period of study, from 1960 to 2019, we use the 1967 lot as our unit of observation, in order to be able to understand changes relative to this baseline. As we show, substantial changes in lot delineation occurred after 1967, almost all cases in which lots were combined into larger lots, some even spanning an entire block face. Such large lots were rare in 1967, as most of these properties had been platted and developed historically with dimensions that were narrow but

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<sup>6</sup>The raw number of lots is 955, as defined by tax assessment lots. Functionally, though, the number of lots is 919. This difference is caused by an oddity in tax records, in which some lots were de facto combined but still recorded as separate lots. As an illustration, consider six contiguous lots with the same owner that have one building spanning all of them. There are some cases in which, out of a tax mitigation strategy, the improvements for lots such as these are assigned to only one lot in the tax data, while the others are listed as with no structure on them. Cases of this kind account for 54 lots that are functionally only 17 lots. To deal with this in the data, we assign the same average improvement data value within each cluster of lots in order to measure the actual state of improvements on those lots.

deep.

We measure treatment—in our case, destruction—with a lot-specific damage measurement taken by city officials shortly after the disturbances, available at the National Archives. Our baseline measure of damage is whether a lot’s improvements were “totally destroyed” as denoted by these officials. While this official document does not elaborate on the definition of “totally destroyed,” it appears to be buildings whose destruction was measured as 100% according to the metric developed by the city officials, in practice reduced to piles of bricks and ash after severe fires. Overall, almost 20 percent, or 179 of the 919 lots, were totally destroyed. As an alternative, we also use a finer measure with four levels of damage: none, minor, significant, and irreparable.<sup>7</sup>

Figure 3 gives an example of the coding of “total destruction.” Red shaded lots are those totally destroyed during the civil disturbances. This figure also highlights the intra-block variation in damage on which we rely in our empirical approach. Some blocks have both destroyed and undestroyed lots, while others remained completely undamaged.

To measure property development outcomes, we collect lot-level property tax assessment data roughly every ten years from 1960 to 2019. (As we could not locate data from 1980, we use 1979 instead.) We also include 1967, just before the damage, and 1971 and 1972 in addition to 1970, in order to understand the dynamics in the years immediately after 1968. These data separately report assessed land and assessed improvement values.<sup>8</sup>

We also add information on which businesses were owned by Black people in 1967.<sup>9</sup> We manually match these businesses to 1967 lots.

Table 1 shows some summary statistics resulting from this data assembly. In our three com-

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<sup>7</sup>National Archives, Pennsylvania Ave, Washington DC, Record Group 328. The list of totally destroyed lots comes from Entry A1-14, Box 2, folder “Addresses of Damaged Buildings.” For this measure of damage, the source of the information is a field survey specifically of destroyed buildings taken on April 11-12 and supplemented late in the week of April 15. This folder lists several additional sources that may have been drawn upon: an initial field survey done by city officials on April 7 and 8; a followup “special task force” on April 9-12; a field resurvey beginning April 30; and Emergency Housing Service Register recorded April 8-25; Police Department Survey of Precincts April 12-14; Fire Department list of fire damage; and a Dun and Bradstreet report on damaged businesses.

<sup>8</sup>Tax assessment data for the years up to 2010 came from from the DC Public Library’s Washingtoniana collection on microfilm, while the 2019 tax assessment data are available online.

<sup>9</sup>This information comes from the *Directory of Negro-Owned and Operated Businesses* published by Howard University (Jones, 1967)

mercial corridors, slightly over 70 percent of the 919 unique lots were in retail use as of 1967, and just under 10 percent of lots had no structure. By 2019, the number of unique lots had fallen to 410 given extensive lot assembly for large buildings. A comparison of the ratio of the log of improvements per lot square foot and the log of land value per lot square foot shows the pattern of disinvestment and reinvestment. In 1967, the value of improvements per square foot is roughly equal to the value of land per square foot, and 8 percent of lots had no structure. By 1979, improvements were three-quarters of land value and 27 percent of lots had no structure. Finally, in 2019, after a couple decades of substantial reinvestment, improvements exceeded the value of the land, on average, and only six percent of lots had no structure. While this pattern holds for both destroyed and non-destroyed lots, the rise and fall are substantially steeper for destroyed lots.

#### **4 Identification Strategy: The Impact of Destruction on Structures and Value**

The goal of this paper is to examine how destroyed lots fared over time compared to other lots. Before we outline our identification strategy, it is useful to look at the raw variation in outcomes that we are trying to analyze. For now we focus on one outcome variable, whether a lot has a structure on it. Figure 4 (a) presents the percent of lots with structures on them, across two groups: destroyed lots and other lots. Of the lots that were totally destroyed, nearly 80 percent had no structure on them in 1970. This vacancy rate declined slowly over time, approaching zero only around 2010. Interestingly, even lots with structures that were not totally destroyed during the civil disturbance (the gray line) showed a slight increase in the absence of structures following the disturbance, suggesting some structures were razed in the subsequent decade.

Our identification strategy rests on within-block variation over time, while this figure showed raw comparisons across all lots. In Figure 4(b) we show the average intra-block difference in the presence of a structure over time between lots whose structures were destroyed and other lots. Specifically, in each year and for each block, we calculate the share of lots with structures among destroyed and undestroyed lots, and then calculate the average of each lot's deviation from this block-year average. In 1967, within a block on average, destroyed lots were no more likely to be

absent a structure than undestroyed lots. Then, from 1970 to 2010, the intra-block difference is positive: within a given block destroyed lots were more likely to have a structure absent.

To approach this more formally, we aim to estimate the following equation:

$$Y_{lbt} = \gamma_0 + \gamma_{1,t} D_l * \theta_t + \theta_t * \theta_b + e_{lbt}. \quad (1)$$

Subscripts  $l$ ,  $b$ , and  $t$  index lots, blocks and time. Outcome  $Y_{lbt}$  is the absence of a structure, the capital intensity of the lot (improvement value per square foot), or the land value per lot square foot. (We include surface parking lots as absent of structures, even if they have a trivial improvement, typically a shack for a parking attendant.) We use time-invariant indicator  $D_l = 1$  for lots destroyed during the civil disturbance. We include year indicators ( $\theta_t$ ) interacted with block fixed effects ( $\theta_b$ ) to make comparisons only within a given block and year.

The coefficients of interest in this estimation are  $\gamma_{1,t}$ , which measure any difference between destroyed lots and other lots by year from 1967 onward. This estimation delivers unbiased causal estimates of  $\gamma_{1,t}$  if destruction is uncorrelated with other factors in the error term that affect post-1968 outcomes.

To provide a consistency check for the identification, we review whether destruction was correlated with pre-disturbance lot characteristics or pre-disturbance trends in value. Contemporary accounts suggest two ways in which looting may have been non-random. First, looters may have avoided black-owned businesses, best epitomized by the lack of destruction to locally-famous Ben's Chili Bowl on DC's U Street, just off the 14th Street corridor. It is also common to find accounts that describe Black business owners as self identifying in order to avoid damage, in part by writing "soul brother" in their windows (*Washington Evening Star*, April 12, 1968). That said, other reports suggest that damage was fairly random, that "the looting and arson was indiscriminate" across black- and white-owned businesses (*Washington Post*, April 21, 1968). Second, contemporaries suggested that looting was concentrated in stores with goods for immediate consumption, like food or liquor, or easily carried off and sold, like electronics. Contemporaries also emphasized that looting was more likely for stores with valuable contents, which some viewed as

negatively correlated with whether a business was black-owned (*Washington Evening Star*, April 14, 1968). Both of these stories are about looting, which is likely correlated with physical destruction of the structure on the lot, but not completely. In particular, total destruction was usually the result of arson, and even then many acts of arson resulted in only partial damage.

Keeping these potential avenues for non-random destruction in mind, we conduct a statistical test of the conditional randomness of civil disturbance destruction. Table 2 reports the results of whether destruction is correlated with lot features in 1967. (Note that this regression by its nature omits any lots that have no structures in 1967, as characteristics of buildings on such lots are necessarily undefined.) The difference between Columns (1) and (2) is the inclusion of block-fixed effects in the latter. Without block fixed effects, the results in column (1) show that lots with structures destroyed in the future have several different 1967 characteristics than other lots, including higher land value and probability of retail use, and less probability of hosting a black-owned business. These differences shrink and become statistically insignificant once block fixed effects are included in Column (2), limiting the analysis to within block comparisons. However, column (2) suggests that stone or concrete buildings are less likely to be totally destroyed, likely a function of the fire resistance of those materials and the fact that some were high security banks. (The vast majority of buildings along these corridors were made of brick. This brick construction is likely what largely stopped fires from jumping to neighboring buildings.) We take from this that a causal interpretation must condition on block fixed effects, and may need to control for some other factors including the construction material of the building.

A second check of the consistency of our identification strategy is whether there are pre-trends in lots whose structures were destroyed in 1968. In other words, we test for whether the pre-disturbance trajectory in outcomes from 1960 to 1967 differed at lots destroyed in the future compared to other lots. To do this, we use data from 1960 and 1967 and estimate

$$Y_{lt} = \alpha_0 + \alpha_1 D_l \times I_{t=1967} + \alpha_2 D_l + \theta_t * \theta_b + e_{lt}. \quad (2)$$

As above, the subscripts  $l$ ,  $b$ , and  $t$  index lots, blocks and time.  $Y$  is the outcome variable, either the

land or improvements assessment. (We do not look for a pre-trend in whether a lot has a structure, since total destruction necessarily requires the presence of a structure). As above, we use  $D_l = 1$  to indicate whether the structure on lot  $l$  was destroyed. As in Equation 1, we use block-year fixed effects. The coefficient of interest is  $\alpha_1$ , which measures any differential pre-trend in outcome  $Y$  on destroyed lots between 1960 to 1967.

Table 3 displays the results from estimating Equation 2. The first column reports results using the improvements assessment as the outcome variable. The next column uses the land assessment as the outcome variable. The sample changes a bit between the first two columns, as lots with zero improvements are not included in the column (1) since we take the log of the improvement value. Therefore in column (3) we report the results for the land assessments using that same restricted sample. In any case, the results show no statistically significant differential pre-trends.

## 5 Estimation and Findings: Long-Run Impacts

Informed by our tests of estimation validity from the previous section, we estimate the impact of destruction conditioning on block-year fixed effects, and also a few control variables that had some predictive power in Table 2. Specifically, our final estimation takes the form of

$$Y_{lbt} = \beta_0 + \beta_{1t}D_l * \theta_t + \theta_t * \theta_b + X'_{lt}\gamma + e_{lbt}. \quad (3)$$

Our coefficients of interest are the set of  $\beta_{1t}$ , which report any differential change for destroyed lots in a given year  $t$  relative to undestroyed lots on the same block and in the same year. This equation is quite similar to Equation 1, but with additional controls  $X'_{lt}\gamma$  which are three sets of variables: a dummy for retail status in 1967 and its interaction with year dummies, a dummy for a black-owned business in 1967 and its interaction with year dummies, and a dummy for stone or concrete construction in 1967 and its interaction with year dummies. The interactions with year dummies allow for the effect of these 1967 attributes to change over time.

We present the regression results beginning with Table 4, which examines the outcome of whether a lot has a structure. We use linear probability models because of their ease of interpre-

tation and estimation; we have also estimated probit models that give essentially the same results. Column 1 is the baseline specification. The results show that lots whose structures were destroyed in 1968 were about 60 percentage points more likely to not have a structure in 1970. This gap persists through 2000, when the difference is still a sizable 6 percentage points. In this specification, destroyed lots are actually slightly more likely to have a structure in 2019 by 4 percent. We do not read much into the marginal statistical significance of the 2019 coefficient. In part this is because the coefficients from 2000 to 2019 are not much different from each other. In addition, in the data the result in 2019 appears to be driven by a small number of lots that were temporarily empty as the structures on them had been razed and new developments were under construction.

The rest of the table presents variations on this baseline estimate. In column 2, to test for whether the possibility that black ownership in 1967 deterred destruction and therefore confounds our estimation despite the inclusion of controls for such lots in the previous column, we omit any lot that had been the site of a black-owned business in 1967. This generates little change to the results. In column 3, we restrict the sample just to lots that had structures in 1967, in order to test the underlying selection effect in which destruction can only occur on lots with structures. Because of this restriction, we have to omit the interaction of the total destruction variable with the 1967 dummy, as all lots in this sample by definition had structures in that year. Again, the results are very stable.

Finally, in the last column we relax the fixed effects to just include separate year and square fixed effects but not their interaction, in order to test for the extent to which the results are sensitive to focusing on within-block over-time variation. The results are similar except that the coefficient in 2000 is not statistically significant, though at 0.34 it is almost within a standard error of the 0.062 coefficient in the baseline specification in column 1. The longer-lived effects of destruction in this specification suggest that destroyed lots were located on blocks that on average saw more redevelopment by 2000, but that within those blocks the destroyed lots still lagged behind other lots.

To give a better sense of the magnitudes, Figure 5(a) depicts the baseline coefficients from

column 1 of Table 4 column (3). Black dots are coefficient estimates; 1960 is the omitted year, so we include it at zero for reference. Graphically it is easier to see how large the estimates are from 1970 to 1990, while the estimates from 2000 to 2019 are on the whole fairly similar to each other despite some variation in statistical significance.

So far we have focused on the presence of a structure, which is the dominant form of variation in land use in the early years after 1968. However, this is just one measure of long-run land use outcomes. In Table 5 we consider the impact of total destruction on assessed values of improvements and land. We take the log of these values per square foot of land area in order to make feasible comparisons across lots. Because the log is undefined for zero improvements, our analysis of improvements values is conditional on a lot having an improvement. Column 1 finds a pattern of convergence that is substantially slower than that for the presence of a structures, with lots that suffered destruction of their structures in 1968 still having 20 percent less valuable improvements in 2010.

We anticipate that the civil disturbance targeted structures. If this is true there should be little difference in land value for destroyed and undestroyed lots. Column 2 presents this test, and the results show that there is no statistically significant difference in land value in any year. The final column of the table shows that lack of change in land value holds for the sample with non-zero improvements that we used in column 1.

Figure 5 panels (b) and (c) shows the improvements and land value patterns (columns 1 and 2) visually, with 95 percent confidence intervals shaded around the point estimates. The value of improvements in panel (b) dips to a low of roughly 50 percent lower than other lots of the same block in the same year in 1979. The point estimate for 2010 is the last one significantly different from zero, indicating a difference in destroyed lots still 20 percent lower than other lots. In 2019 this number is still negative, but not longer statistically distinguishable from zero. Panel (c) shows the results for land values, where the gap is never different from zero.



## 6 Results Robust to Alternative Measures

We have so far used a binary measure of damage. Clearly, this binary bifurcation misses much of the nuance of destruction, which ranged from structures burned to the ground to those with only broken windows. This type of nuance could matter if, for example, destroyed lots actually do better over the long haul than those lots with modest destruction that did not have a clean slate for redevelopment.

To test this concern, we use an alternative measure with four levels of damage, though it is unfortunately missing for 227 lots.<sup>10</sup> This measure shows 301 undamaged, 151 with minor damage, 41 with significant damage, and 202 with irreparable damage. “Irreparable” damage is defined as more than 50 percent of the structure damaged according to the metric developed by city surveyors. Therefore, “irreparable damage” encompasses more lots than “total destruction,” which entailed a building left only as rubble, or essentially 100 percent damaged. Minor damage in most cases means broken glass and other damage from theft and breaking and entering during the civil disturbances, but no structural damage from fire or otherwise. Significant damage falls in between, including buildings with more than just broken glass but that are still salvageable.

Table 6 shows a comparison of our “total destruction” measure with this measure. About two-thirds of the totally destroyed lots are considered irreparably damaged by this new measure. Not reported, we confirm that this new measure of damage has similar results to the identification tests we presented in section 4.

The comparison between irreparably damaged lots and significantly damaged lots is a particularly powerful test of the impact of the civil disturbances. Both types of lots were heavily damaged, usually by fire, with the difference being whether a lot completely burned down and became unsalvageable, or was just partially burned.

We re-estimate equation (3) using the graded damage measure, leaving lots with no damage as the omitted group. Specifically we use the specification from Table 4 column 1, but replace the interaction of totally destruction and year with the interaction of indicators for each grade of

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<sup>10</sup>See footnote 7 for the source of the data and the underlying information from which the data were constructed.

destruction and year. Figure 6 shows the results for whether lots have a structure in panel (a), the value of improvements conditional on having improvements in panel (b), and the value of land in panel (c). Here we do not display the 95% confidence intervals because the figure becomes difficult to read.

Subfigure (a) shows that lots with irreparable damage, the most damaged group, were again more likely to lack a structure compared to the other three groups for decades. Statistical tests of the coefficients on irreparably damaged lots versus those on significantly damaged lots reject at the 5% level that their coefficients were the same from 1970 up to and including 1990.

In the case of improvements, subfigure (b) shows a similar pattern: effects are most concentrated on lots with irreparable damage, and these lots seem to just catch up by 2020. Here the estimation is based off of Table 5 column 1.

Finally, we find no differences in the land value of lots depending on the level of damage, as would be expected if the damage was fairly random and if land value differed little on a within-block basis.

Altogether, the results are a powerful confirmation that the civil disturbances had lasting effects on land use. The fact that irreparably damaged lots—which no longer had buildings after the civil disturbances—had distinctly worse outcome than significantly damaged lots—which did have buildings in the immediate aftermath—is evidence against the idea that the presence of a building was a significant friction to redevelopment. In this context, leapfrogging of vacant lots did not occur.

## **7 Mechanisms**

Why was there so little momentum to reinvest after the 1968 civil disturbances? In this section we sketch out a few mechanisms.

To understand the barriers to reinvestment better, we retrieved from the National Archives the records from a survey that the federal government conducted of property and business owners in the months after the civil disturbance in 1968. This survey was not perfect; it was mainly sent

to those whose properties had been heavily damaged, and its response rate was relatively low. In the end, of the totally destroyed lots, we have survey responses from 55 percent of the property owners. Of these, about 50 percent were considering divesting themselves of their properties, either by selling the site, leasing the empty site to others for development, or just abandoning the property. In explaining their plans, these respondents emphasized a number of factors behind their decisions to disinvest. Perhaps most common was fear about public safety. Respondents also widely reported their complete inability to obtain insurance or financing, without which they could not afford to rebuild. Some respondents simply did not want to ever return to the neighborhood.

As time went on, newspaper accounts reported three main barriers to redevelopment. One was lack of financing, which was increasingly justified by lenders as a reaction to how long these corridors had gone without substantial investment, itself a product of lenders' earlier reluctance. The early postwar period was a time of unchecked redlining and other systemic racism that, in this context, severely impacted the ability of potential investors to access funding for the development of core urban real estate. The eventual convergence of destroyed lots with other lots in the 2000s reflects in part the general increase in investment that accompanied the increase in population and occurred in many other cities at the time.

A second factor was slow and unpredictable government action. Here it is essential to recognize that ultimately the redevelopment of these corridors largely fell to the city and its partners. The District of Columbia Redevelopment Land Agency (DCRLA) was the main city agency involved in this task (Clement, 2016; Walker, 2018; Howard Gillette, 2006; Howell, 2016; National Capital Planning Commission, 1969a,b, 1970). Figure 7 shows the pattern of DCRLA ownership over time. The DCRLA eventually purchased 49 percent of all the lots on these corridors by the mid-1970s, and 90 percent of the totally destroyed lots. In fact the city still owns roughly 7 percent of the lots on these corridors, including two entire blocks that form a part of the city's convention center.

The DCRLA's model was to acquire land, assemble it into larger lots, and then find a partner that would develop the lot for a specific purposes. In 1998 the *Washington Post* described this

approach: “Government officials also had bulldozed 70 acres of land in Columbia Heights after the riots, working from the theory that if they cleared it, developers would come. They didn’t.” The DCRLA was heavily criticized for its slow pace, as hundreds of lots sat empty for a generation. Yet the slowness was likely just as much a function of the lack of partners for development as it was of the DCRLA’s choices or budget constraints.

Instead of working with private developers, the DCRLA instead came to work primarily with a set of community institutions. These institutions were a third factor often cited in explaining the delays in rebuilding, as coordination among them was difficult. These community groups were largely churches, foundations, arts groups, and social service agencies. While these groups received criticism, they also stepped into a vacuum created by private investors who largely avoided these neighborhoods. The *Washington Post* described them as convincing “banks and foundations that social workers with no building experience could be successful developers. They rehabilitated entire blocks, building apartments, clinics, town houses, day-care centers and even a block-long shopping center.”<sup>11</sup>. The incentives of these actors are likely not captured simply by maximization of profit or land use, but instead contain charitable motives. They also likely were able to act as if they were capturing the positive externalities from rebuilding, the mechanism that Hornbeck and Kenniston emphasize in their study of Boston, though it was able to create very fast and high-value rebuilding in that case.

## **8 Conclusion**

In this paper we have examined the long-run causal effect of the 1968 civil disturbances on land use in Washington, DC. We found persistent severe effects in which lots destroyed during the civil disturbances lay empty for years or decades. This slow rebuilding contrasts markedly with the very rapid rebuilding that has occurred in other historical contexts following intense destruction, such as after the great fires in Boston and San Francisco. The settings of those instances differed dramatically with that of 1968 Washington, in which the civil disturbances created a stigmatizing

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<sup>11</sup>“The Power Brokers of 14th St,” *Washington Post*, April 4, 1998, p. A1.

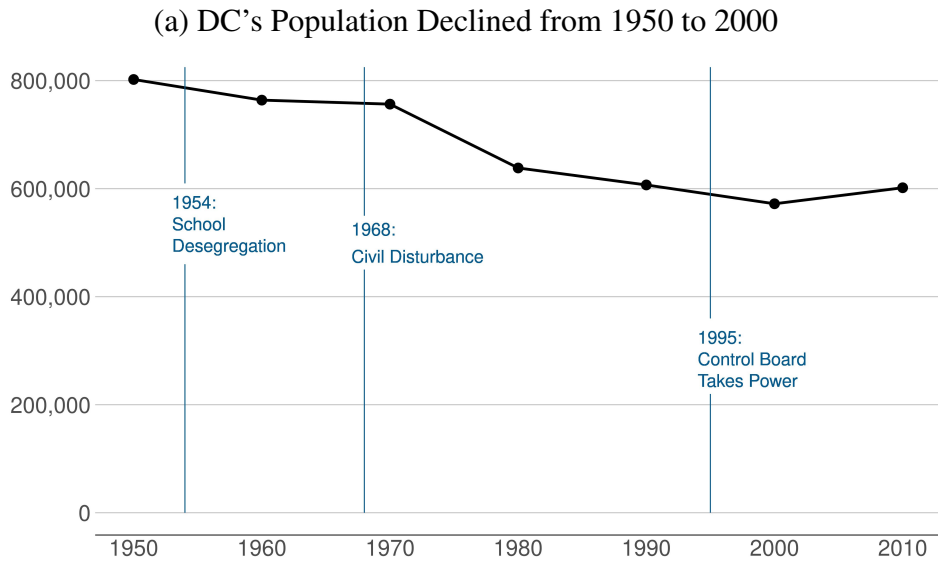
form of damage that accelerated ongoing disinvestment trends and were related to fundamental systemic racism and racial tension inherent to postwar American urban cores. We also emphasize barriers to reinvestment posed by redlining of finance and insurance firms, concerns about public safety, and slow action by the government which ended up buying enormous amounts of the property destroyed during the civil disturbances. For at least three decades after the disturbances, it was community groups such as churches, arts groups, and social service providers that led the redevelopment of these corridors, rather than private investors.

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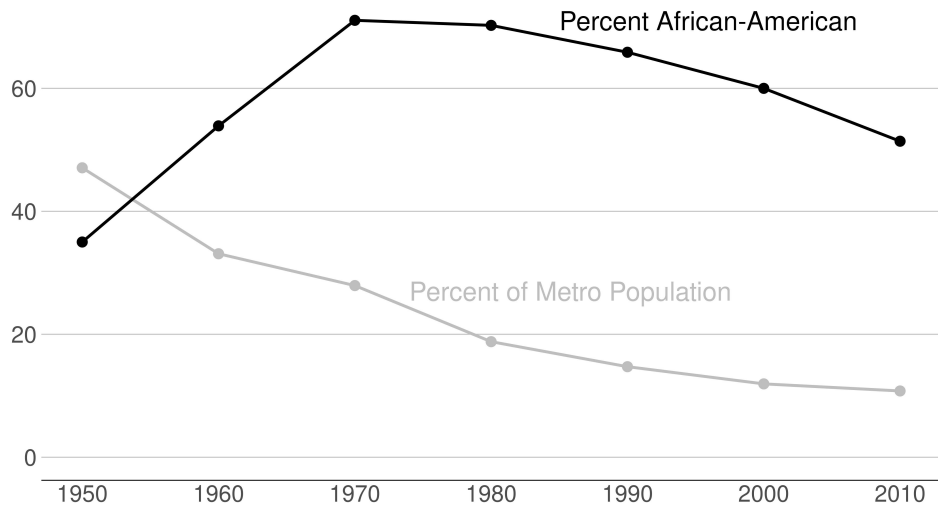
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Figure 1: District of Columbia Demographics, 1950 to 2010



(b) The Black Population Share Peaked in 1970, and the District's Share of Metro Population Steadily Declined



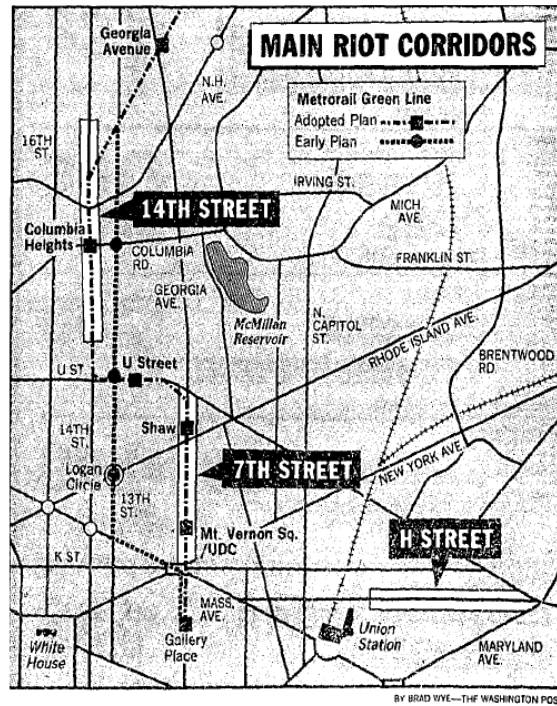
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*Note:* The top panel shows Washington, DC's decline in total population from 1950 to 2000. The bottom panel shows the Black population percentage (dark line) and the city's share of metro area population (grey line) by decade.

Sources: Census. See Data Appendix for complete citation.



Figure 2: Corridors Along Which Major Damage Occurred



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*Note:* This map of the main corridors and planned metro rail expansion comes from the Washington Post.

Figure 3: Example of Damage During Civil Disturbances

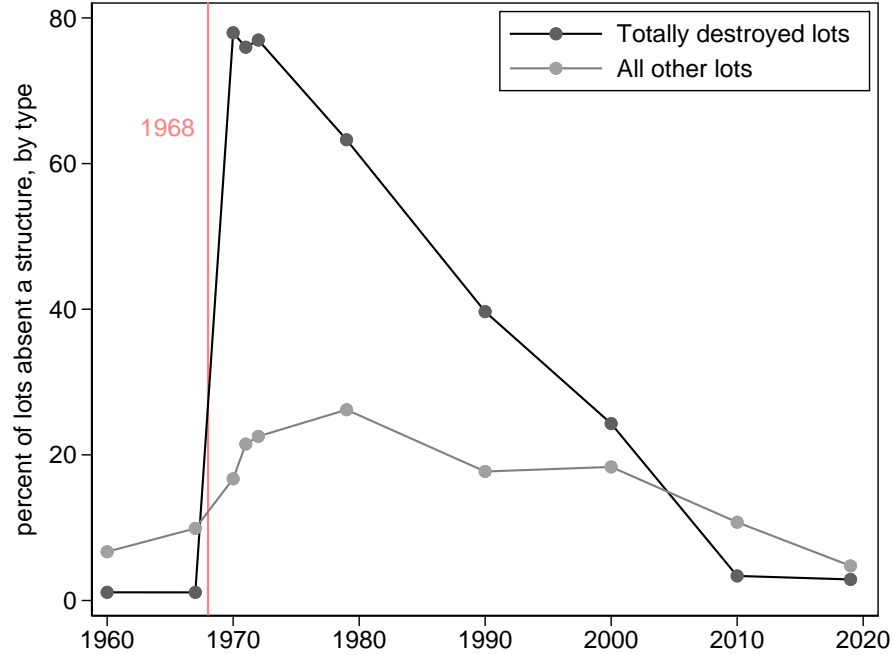


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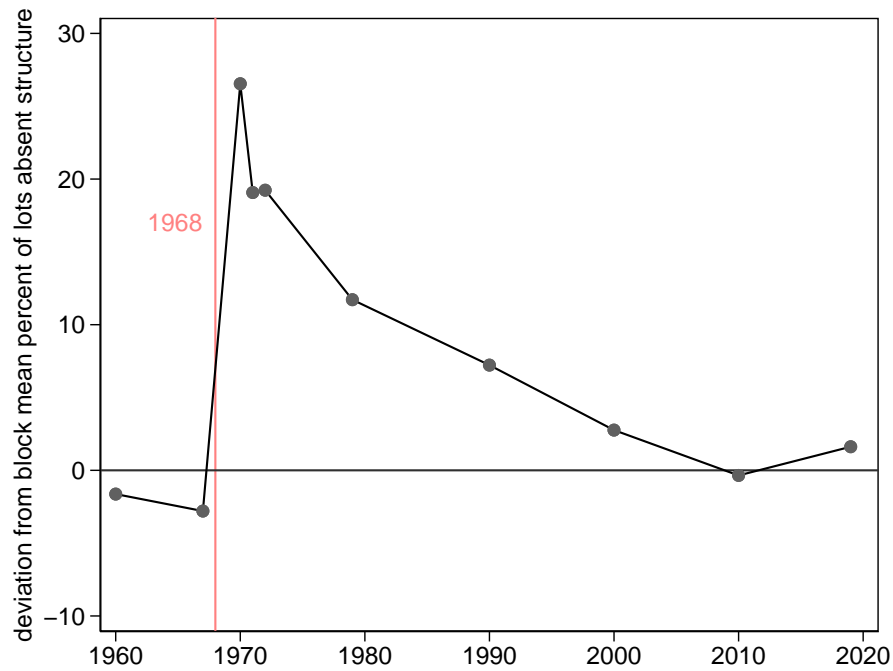
*Note:* Red shaded lots were totally destroyed during the civil disturbances. The dark shaded gray lots are the other lots in the sample, and were not totally destroyed. The figure shows the northern part of the 7th St NW corridor. The list of totally destroyed buildings comes from Record Group 328, Entry A1-14, Box 2 at the National Archives in Washington, DC.

Figure 4: Lots With Structures Destroyed in 1968 Are More Likely to Have No Structure for Decades

(a) Percent of Lots with No Structure, Destroyed and Undestroyed in 1968



(b) Percent of Totally Destroyed Lots with No Structure, Relative to their Block

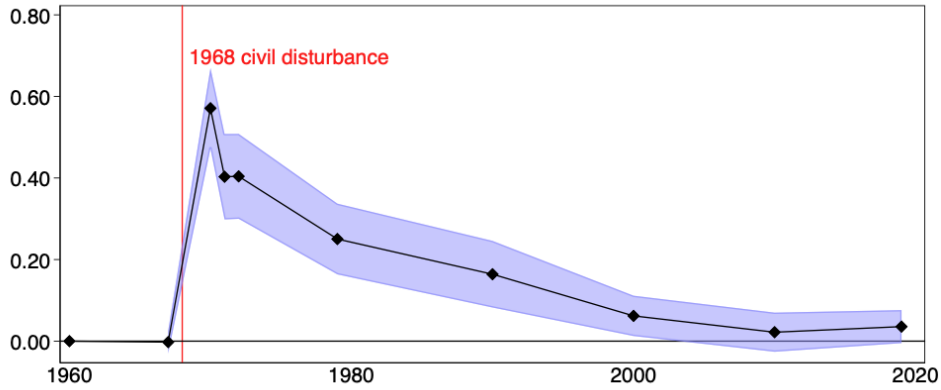


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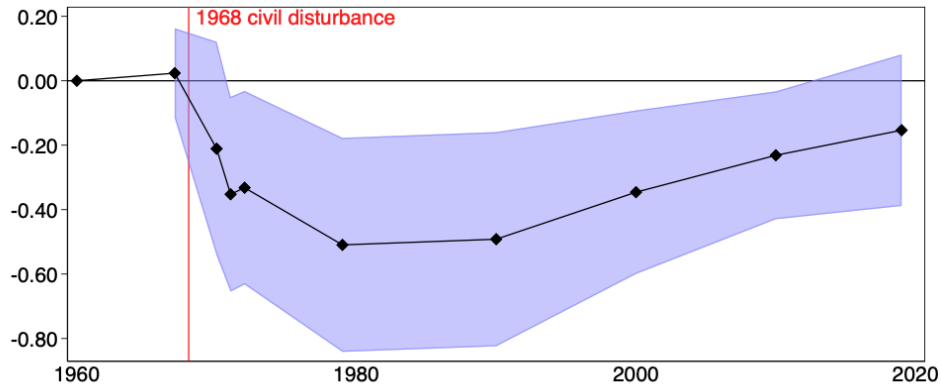
*Note:* Subfigure (a) shows the percent of lots in each year that were absent a structure, i.e. with no improvements or minimal improvements associated with parking lots. To make subfigure (b), we calculate the share vacant by block. We then calculate each lot's deviation from this block-year average. The figure presents the average of this deviation by year in percentage terms.

Figure 5: Long-Run Consequences of Destruction

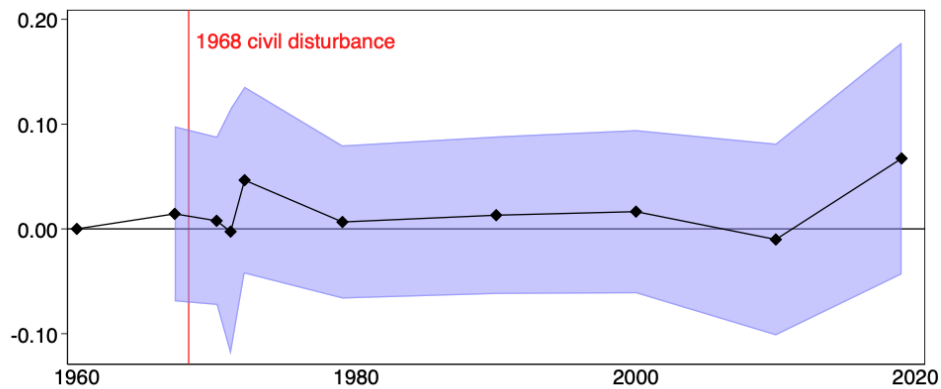
(a) Absence of Structure Over Time



(b) Improvement Values Over Time



(c) Land Values Over Time

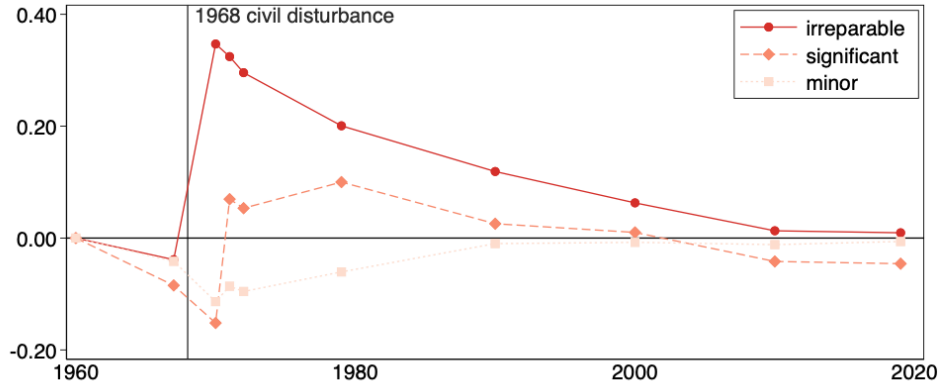


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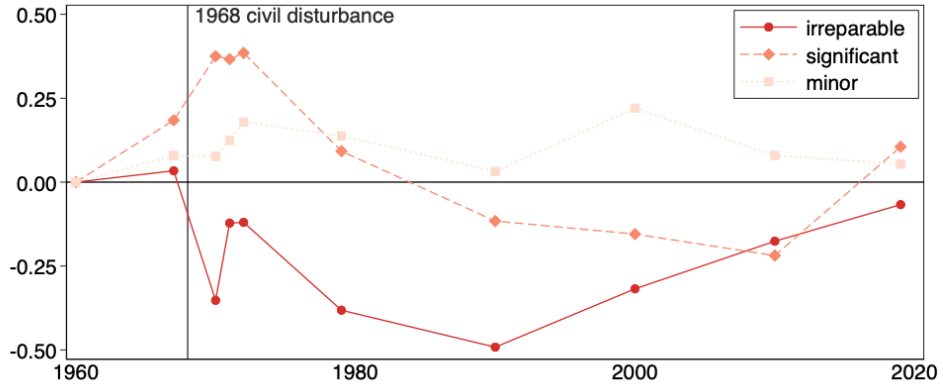
*Note:* Subfigure (a) presents coefficients from Table 4 column 1. Dots are estimated coefficients and the shaded areas are 95 percent confidence intervals. While difficult to see, the 1967 coefficient in panel (a) does have a standard error – just a very small one. Subfigure (b) presents coefficients from columns 1 (improvements) and 2 (land) from Table 5.

Figure 6: Graded Damage Measure Tells Similar Story

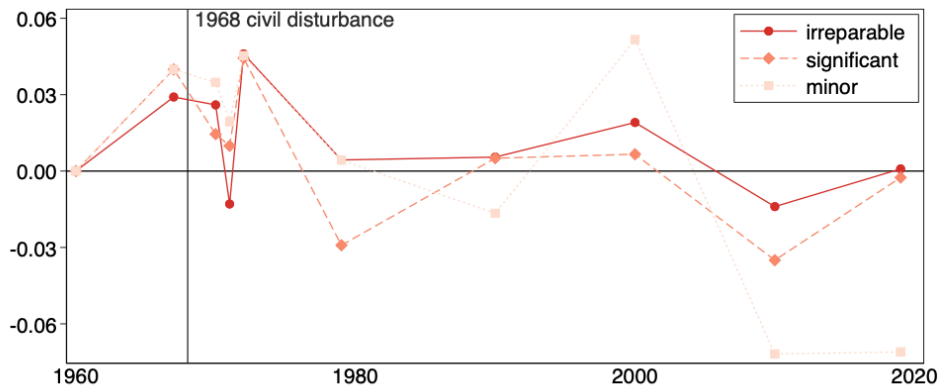
(a) Absence of Structure



(b) Improvements Value

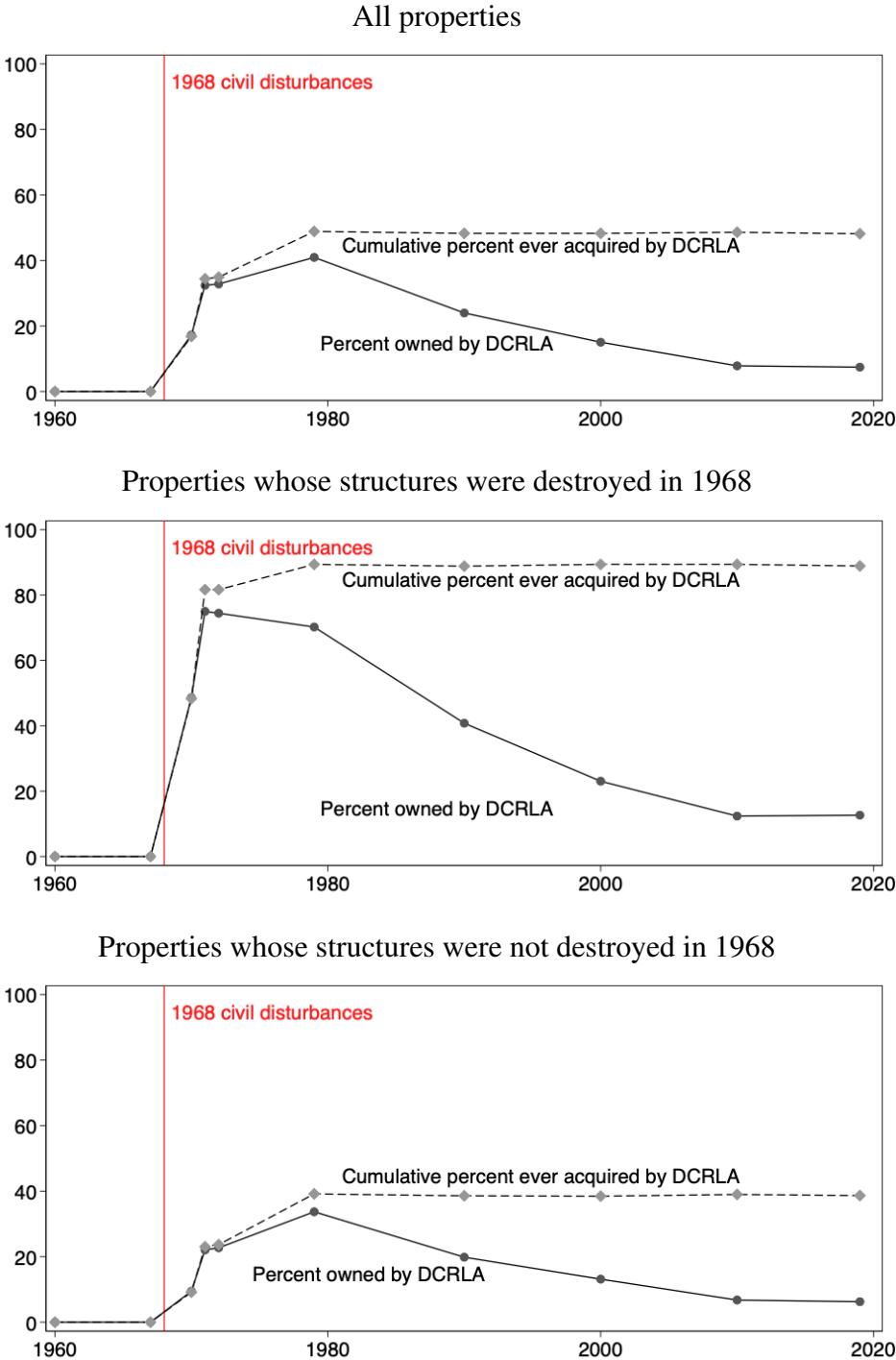


(c) Land Value



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Figure 7: DC acquired enormous numbers of properties on the corridors that suffered damage



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*Note:* The District of Columbia Redevelopment Agency was dissolved in the 2000s; after that date we include properties whose ownership was transferred from DCRLA to the city.

Table 1: Summary Statistics

	In 1968 Lot Was		All Lots
	Destroyed	Not Destroyed	
	(1)	(2)	
<b>1967</b>			
Unique Lots	179	740	919
1{Retail in 1967}	0.94	0.67	0.72
Construction Quality, 2 to 8	2.96	2.95	2.95
1{Has no structure}	0.01	0.10	0.08
Log of improvements per sq ft	1.46	1.34	1.36
Log of land value per sq ft	1.59	1.39	1.43
<b>1970</b>			
Unique Lots	173	718	891
1{Has no structure}	0.77	0.15	0.27
Log of improvements per sq ft	0.90	1.10	1.09
Log of land value per sq ft	1.48	1.33	1.36
<b>1979</b>			
Unique Lots	140	640	780
1{Has no structure}	0.80	0.30	0.39
Log of improvements per sq ft	0.20	1.71	1.53
Log of land value per sq ft	2.07	2.00	2.01
<b>2019</b>			
Unique Lots	42	367	409
1{Has no structure}	0.12	0.06	0.06
Log of improvements per sq ft	5.65	5.41	5.43
Log of land value per sq ft	5.33	5.34	5.34

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*Note:* This table presents summary statistics for all lots in the sample. Improvement and land values are in nominal terms. Construction quality is a number assigned by the assessor; in these data it takes the values 2 through 8, where 8 is more valuable.

Table 2: Conditional on Block, Destroyed Lots Similar To Undestroyed Ones

	(1)	(2)
log(land value / sq. ft.)	0.180*** (0.0342)	0.00593 (0.0671)
log(impr. value / sq. ft.)	-0.00314 (0.0304)	0.0207 (0.0323)
<i>Use (Commercial use omitted)</i>		
Residential	0.0572 (0.0799)	-0.0155 (0.0841)
Retail	0.266*** (0.0740)	0.104 (0.0708)
Other	-0.0440 (0.168)	-0.110 (0.154)
<i>Quality of construction (1 out of 10 omitted)</i>		
2 out of 10	0.0128 (0.0850)	-0.0354 (0.0826)
3 out of 10	0.00570 (0.0629)	-0.0203 (0.0632)
4 out of 10	-0.0224 (0.0873)	-0.0653 (0.0879)
5 or more out of 10	-0.198 (0.122)	-0.179 (0.116)
Percent depreciated	-0.000402 (0.00114)	0.00184 (0.00119)
<i>Material of construction (brick omitted)</i>		
stone or concrete	-0.0800 (0.134)	-0.220* (0.127)
wood frame	0.170 (0.104)	0.0620 (0.0965)
other non-brick	0.116 (0.169)	-0.135 (0.157)
Site of black-owned business	-0.123*** (0.0362)	-0.0463 (0.0343)
Constant	-0.229** (0.110)	0.0291 (0.134)
Observations	829	829
R-squared	0.091	0.393

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Note: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  This table assesses whether destruction in 1968 on a lot is related to observable characteristics of that lot in 1967. Building condition is assigned by the assessor. This variable takes on values 1 through 8; we include the one observation with quality 8 with lots of quality 5 (we observe no lots with quality 6 and 7). Larger numbers imply better quality buildings.



Table 3: No Differential Pre-Trends

Outcome variable	log(improvements assessment/sqft)		log(land assessment/sqft)	
	Lots with improvements	All lots	Lots with improvements	
Sample	(1)	(2)	(3)	
1967 x destroyed	0.0342 (0.0721)	0.00947 (0.0414)	0.0227 (0.0409)	
Year-Block FE	X	X	X	
Destroyed FE	X	X	X	
Observations	1,770	1,898	1,770	
R-squared	0.329	0.779	0.783	

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*Note:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  This table includes data from 1960 and 1967, and reports results from OLS regressions of Equation 2. Columns 1 and 2 do not control for retail use, whereas Columns 3 and 4 include indicators for retail in 1967 as well as an interaction of that indicator and an indicator for year 1967. We report robust standard errors below coefficient estimates. We include 150 (= 76 blocks\*2 with 1 omitted block) year by block indicators in the second and fourth columns.

Table 4: Absence of Structure Persists for Decades

Outcome variable	Dependent Variable: 1(No Structure on Lot)			
	(1)	(2)	(3)	(4)
1(Destroyed in 1968)*				
1(t=1967)	-0.00236 (0.0141)	-0.00147 (0.0157)		-0.0627*** (0.0176)
1(t=1970)	0.571*** (0.0501)	0.597*** (0.0483)	0.580*** (0.0502)	0.608*** (0.0362)
1(t=1971)	0.403*** (0.0534)	0.428*** (0.0565)	0.391*** (0.0537)	0.520*** (0.0387)
1(t=1972)	0.404*** (0.0531)	0.415*** (0.0556)	0.393*** (0.0536)	0.518*** (0.0384)
1(t=1979)	0.250*** (0.0442)	0.271*** (0.0485)	0.243*** (0.0447)	0.347*** (0.0588)
1(t=1990)	0.164*** (0.0417)	0.177*** (0.0441)	0.163*** (0.0421)	0.180*** (0.0658)
1(t=2000)	0.0620** (0.0252)	0.0632** (0.0266)	0.0590** (0.0260)	0.0340 (0.0528)
1(t=2010)	0.0219 (0.0245)	0.0208 (0.0248)	0.0253 (0.0247)	-0.0885*** (0.0307)
1(t=2019)	0.0356* (0.0206)	0.0310 (0.0211)	0.0393* (0.0206)	-0.0553* (0.0293)
Fixed effects				
Year				X
Block				X
Year*Block	X	X	X	
Sample limitations				
Omit lots w/black-owned bus.		X		
Omit lots w/o structure in '68			X	
Other controls				
Retail in 1967 * year FE	X	X	X	X
Stone/concrete in 1967 * year FE	X	X	X	X
Black-owned bus. in '67 * year FE	X		X	X
Observations	9,159	7,587	8,411	9,159
R-squared	0.599	0.629	0.668	0.363

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Note: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . This table reports results from the estimation of Equation 3. We report standard errors in parentheses, clustered at the contemporary lot level.

Table 5: Improvements, but not land values, remain lower on destroyed lots until 2010

Outcome variable	log(Improvements assessment/ sqft)	log(Land assessment / sqft)	
	(1)	(2)	(3)
<b>1(Destroyed in 1968)*</b>			
1(t=1967)	0.0236 (0.0712)	0.0144 (0.0426)	0.0210 (0.0435)
1(t=1970)	-0.211 (0.169)	0.00775 (0.0410)	-0.0343 (0.0528)
1(t=1971)	-0.352** (0.154)	-0.00260 (0.0600)	0.0388 (0.0525)
1(t=1972)	-0.332** (0.153)	0.0465 (0.0455)	0.0656 (0.0576)
1(t=1979)	-0.509*** (0.169)	0.00661 (0.0373)	0.0124 (0.0384)
1(t=1990)	-0.492*** (0.170)	0.0131 (0.0384)	0.0140 (0.0407)
1(t=2000)	-0.346*** (0.130)	0.0165 (0.0397)	0.00950 (0.0415)
1(t=2010)	-0.231** (0.101)	-0.0101 (0.0467)	0.0141 (0.0445)
1(t=2019)	-0.153 (0.120)	0.0672 (0.0565)	0.0480 (0.0589)
<b>Fixed effects</b>			
Year*Block	X	X	X
<b>Other controls</b>			
Retail in 1967 * year FE	X	X	X
Stone/concrete in 1967 * year FE	X	X	X
Black-owned bus. in '67 * year FE	X	X	X
Observations	7,488	9,138	7,488
R-squared	0.866	0.978	0.982

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*Note:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . This table reports results from the estimation of Equation 3. We report standard errors in parentheses, clustered at the contemporary lot level.

Table 6: Measure of Total Destruction versus Graded Damage Measure

	Number of Lots		Share of Lots, by Row	
	In 1968 Lot Was		In 1968 Lot Was	
	Not Destroyed	Destroyed	Not Destroyed	Destroyed
	(1)	(2)	(3)	(4)
Graded Damage Measure				
None	296	5	0.98	0.02
Minor	139	12	0.92	0.08
Significant	36	5	0.88	0.12
Irreparable	70	129	0.35	0.65
Missing	199	28	0.88	0.12

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