CDBG Public Improvements and Residential Property Values: Evidence from Cuyahoga County, Ohio*

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Abstract

Local governments frequently use place-based public investments for neighborhood revitalization. In this study, we investigate the impacts of public improvements funded by the Community Development Block Grant (CDBG) on residential property values in Cuyahoga County, Ohio, to assess the extent to which they improve neighborhood quality. Capitalization theory posits that if the property market values the addition of public improvements, the demand for properties would rise in response to that addition, ultimately leading to an increase in property values. While urban affairs scholarship supports the capitalization effect of CDBG investments, the timing dynamics of this capitalization remain less understood. Using parcel level data for the period 2000 to 2019, we employ a difference-in-differences model and event-study framework to examine these effects. Our findings indicate that CDBG projects significantly enhance residential property values in nearby areas. Our analysis reveals that this effect emerges approximately three years after completion and persists over time, offering valuable insights for urban governance.

Keywords: Place-Based Policy, Community Development, Neighborhood Revitalization, Public Investments, Property Values

JEL Classification Codes: H72, R53

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1 Introduction

Place-based public investments, also known as area-based public investments, are frequently employed by local governments to support neighborhood revitalization in urban areas. The primary goal is to revive low-wealth, low-income, and declining neighborhoods by attracting businesses, creating employment opportunities, and generating property wealth (Accordino and Fasulo, 2013). Consistent with the study by Foell and Pitzer (2020), we define place-based public investments as investments deployed to geographically targeted areas with the goal of improving their social and economic conditions.

The impact of place-based investments has garnered considerable attention in the literature (Bartik, 1995; Newell, 2010; Aarland, Osland, and Gjestland, 2017; Theodos, Stacy, and Ho, 2017), reflecting recognition that ocational quality influences thecurrent and future well-being of residents. Neighborhood conditions shape outcomes such as educational attainment (Romero, 2009) and productivity (Kantor and Whalley, 2014), employment opportunities (Ding and Knaap, 2002), and health outcomes (Kose, O'Keefe, and Rosales-Rueda, 2024; Rollings, Wells, and Evans, 2015). Place-based investments are intended to alter neighborhood characteristics to improve residents' quality of life. Therefore, it is essential for researchers and policymakers to understand the extent to which these investments enhance local amenities and achieve the desired economic impact—such as business attraction, job creation and property value appreciation (Almagro, Chyn, and Stuart, 2023).

Place-based investments have been extensively studied but their effectiveness has been a subject of great debate. Some scholars express skepticism about their efficacy, suggesting inefficient allocation, lack of holistic regional planning and the maldistribution of resources (DeHaven, 2010; Rae, 2011). Others, however, maintain that there have been some successes in improving neighborhood quality (Rossi-Hansberg, Sarte, and Owens, 2010; Busso, Gregory, and Kline, 2013; Neumark and Simpson, 2015). A growing body of research shows that place-based investments such as CDBG investments positively impacts several indicators of neighborhood quality. Studies have documented growth in the number of local businesses (Galster et al., 2004; McCullough, 2025), employment gains (Zuo, 2024), and increases in property values (Pooley, 2014; Theodos, Galster, and Hermans, 2025)

This study aims to contribute to the ongoing discourse by investigating the impact of place-based investments on neighborhood outcomes. Prior research has assessed the impacts using a variety of indicators including business activity, job counts and median household income. Given the central role property values play in reflecting neighborhood conditions, many studies have relied on them to evaluate neighborhood outcomes (Ding, Simons, and Baku, 2000; Han, 2019; Nygaard, Galster, and Glackin, 2024; Simons, Quercia, and Levin, 1998). Economic theory suggests that property values are a function of neighborhood attributes (Rosen, 1974), with property prices reflecting individuals' willingness to pay for amenities. For example, attributes such as access to jobs, environmental amenities, commercial businesses, and public services are reflected in property values (Ding and Knaap, 2002). This relationship has formed the basis for evaluating neighborhood quality using property values in many studies (Ding, Simons, and Baku, 2000; Han, 2019; Nygaard, Galster, and Glackin, 2024; Simons, Quercia, and Levin, 1998).

In line with previous research, we use property values to analyze how place-based investments affect neighborhoods. More specifically, we ask: do public investments funded by the CDBG increase property values? Public investments refer to a broad range of CDBG-funded public improvements that upgrade neighborhood infrastructure and expand amenities. In this study, examples include upgrades to streets and sidewalks, parks and recreational spaces, water and sewer systems, and community facilities such as fire stations, senior centers, and health facilities. CDBG-funded public investments are appropriate for testing the effects of place-based policies given that "the overall impact of the CDBG program is staggering" (Overton and Stokan, 2025). About 33 million individuals benefited from CDBG public improvements between 2005 and 2013 (Theodos, Stacy, and Ho, 2017). Moreover, public investments are tied to physical neighborhood improvements. Investments in streets, sidewalks, parks, and sewer upgrades are among the most visible CDBG activities. Unlike other activities, these improvements more directly affect the entire community by reshaping neighborhoods, altering their appearance, and improving the daily lives of residents.

As noted by Zuo (2025), public investments are also catalytic in that they create conditions that attract private investment, In contrast, other CDBG activities such as public services (e.g. job training and food banks) primarily benefit individuals, while economic development initiatives (e.g., technical assistance, direct enterprise support) target businesses. By isolating public investments, rather than examining them alongside other types of activities, we provide a more focused empirical analysis of the extent to which highly visible, CDBG-funded, communitywide enhancements to the physical environment influence property values.

Our paper makes an empirical contribution by advancing understanding of the temporal dynamics of CDBG capitalization effects through the use of a dynamic difference-in-differences (DID) model. While prior research has established that CDBG investments influence property values, most studies estimate only the average effect of investments on property values and give limited attention to timing. Theodos, Galster, and Hermans (2024, 2025) made significant progress in this area by using an Adjusted Interrupted Time Series (AITS) design to assess the duration and decay of impacts. Building on this work, our dynamic DID model produces year-specific estimates, offering a granular undrestanding of the timing of CDBG intervention effects over a one to six-year post-intervention horizon. Unlike AITS approaches, which focus on duration and decay and tend to imply a smoother trajectory, our approach reveals that impacts unfold in distinct, non-linear, year-to-year patterns. This demonstrates that temporal heterogeneity is a substantive feature of CDBG investments and that impacts develop in a non-monotonic manner. By identifying when impacts occur and how their intensity changes over time, our study shows these investments evolve dynamically rather than follow a uniform pattern. The temporal perspective that our study provides, has important implications for evaluating neighborhood investments and guiding strategic planning. Our results enable policymakers to understand not only whether CDBG investments have an impact, but also when and how those impacts unfold. These insights provide a more detailed framework for assessing neighborhood investments and informing decision-making.

Our research utilizes housing transaction data from Cuyahoga County, Ohio, spanning 2000 to 2019. The DID results indicate that area-based public investments play a role in boosting property values in urban neighborhoods. The results show that properties within 500 feet of a completed CDBG project tend to appreciate faster than those further away. On average, homes near CDBG projects have experienced a 4.1 percent increase in housing prices, with most gains occurring after three years have passed since project completion. . Our subsample analysis shows a similar effect for homes both below and above the median sale price, suggesting a widespread effect across neighborhoods. The study further finds that CDBG investments emerges after the third year and persists through the sixth year, indicating the effects endure for several years. . These findings provide valuable guidance for devising revitalization strategies for urban neighborhoods.

2 Related Literature

2.1 Background on the Community Development Block Grant (CDBG)

The CDBG program was established in 1974 through the Housing and Community Development Act to provide federally funded grants to local governments (Bunce, Neal, and Gardner, 1983). The Act paved the way for a collaborative approach for federal, state, and local governments to systematically tackle the economic, social, and environmental challenges that localities faced. Created with the main objective of revitalizing distressed neighborhoods to ensure their viability, the CDBG program "consolidated a range of existing federal programs (including urban renewal, model cities, neighborhood facilities and water, sewer and open space programs) in a single funding vehicle" (Pomeroy, 2006, p. 5). Therefore, rather than applying separately for assistance with each of these categories, local governments could now benefit from a more streamlined application process that ensured a steady flow of funds annually (Watson et al., 2024).

Entitlement communities receive 70% of the CDBG funds. Entitlement communities are cities with a population of 50,000 or more residents and counties with a population of 200,000 or greater (Stokan, Hatch, and Overton, 2023). The CDBG State Program receives the remaining 30% of the federal funds. The State Program allows states to allocate grant awards to non-entitlement communities. Non-entitlement communities are cities with a population of less than 50,000 and counties with a population of less than 200,000 (Rosenfeld et al., 1995). Entitlement funds are allocated based on a needs-based formula which considers several factors including population growth, poverty rates, overcrowding, and the condition of building structures (Brooks, Phillips, and Sinitsyn, 2011).

The CDBG program is considered one of the most successful initiatives in the history of urban regeneration in the United States (Pomeroy, 2006). It is one of the largest forms of support that local governments receive from the federal government. Although the amount appropriated for the program has declined by 80 percent, in real dollars, since peaking in 1979, local governments benefit from the steady flow of about $3 billion dollars allocated to the program each year (Theodos, Stacy, and Ho, 2017). Grant recipients can use allocated funds to support any of the three program's national objectives: (1) help low-to-moderate income (LMI) families, (2) deal with blight or (3) address any pressing development needs (Brooks, Phillips, and Sinitsyn, 2011).

Local governments have some discretion in the activities they pursue to achieve these objectives. Funds can be used for housing rehabilitation, economic development, public services, or public improvements (Rosenfeld et al., 1995). Grants can also be used to improve the well-bring of vulnerable populations, for example, cash transfers (Stokan, Hatch, and Overton, 2023). Grant recipients may choose to distribute their funds evenly across all their communities or they may choose to concentrate them in specific communities (Bostic, 2014). Most grant recipients are subject to certain restrictions. For instance, by statute, they are not allowed to spend more than 15% of their grant funds on certain activities such as crime prevention, healthcare, and childcare services (Pomeroy, 2006). In addition, the legislation and regulation specify that over a three-year period approximately 70% of the funds awarded must be spent to benefit LMI communities (Rohe and Galster, 2014). LMI status is determined for households with incomes less than 80% of the median income for their area.

CDBG funds awarded are expected to improve the economic and social conditions of neighborhoods chosen for investments by mitigating the deterioration of community infrastructure, preserving the existing housing stock, providing improved community services, and preventing conditions that contribute to health and safety issues (Richardson, 2005). In addition, for areas that are experiencing population loss and a shrinking tax base, the investments are expected to attract additional private investments that foster economic growth (Collinson, 2014). Given the role that CDBG funds are expected to play in the revitalization of neighborhoods, an investigation of the program's impact on communities have remained a perennial question among scholars and policy analysts.

2.2 The Impact of CDBG on Neighborhoods

2.2.1 Conceptual Models

The impact of CDBG investments on neighborhood quality is well documented in the literature. Galster et al. (2004) present a conceptual model which explains that CDBG investments can directly or indirectly stimulate positive changes within neighborhoods. They explain that grant funds invested in upgrading community facilities, public infrastructure, and other activities directly create value for neighborhoods. CDBG investments also have an indirect effect because they change perceptions about neighborhoods (Pooley, 2014). Due to highly visible public investments, private investors and homeowners may perceive that the economic prospects of neighborhoods are on the rise and are expected to continue increasing (Walker et al., 2002). Thus, private investors and homeowners may become motivated to complement local governments by making their own investments to improve neighborhoods.

Researchers explored how CDBG investments affect neighborhoods by using a variety of economic and social outcome variables. McCullough (2025) examined the effects of CDBG spending on business density. Walker et al. (2002) studied the relationship between CDBG projects and neighborhood employment. Yet, Brooks, Phillips, and Sinitsyn (2011) analyzed the responsiveness of municipal revenues to the CDBG program.

The impact on property values has been most frequently examined Galster, Tatian, and Accordino (2006); Pooley (2014); Overton and Stokan (2025). These studies generally find positive effects, though the magnitude varies across neighborhood contexts. Property values are commonly used as an outcome measure because property prices capitalize the perceived benefits of place-based investments, a relationship formalized by hedonic theory (Aarland, Osland, and Gjestland, 2017). The theory assumes that property values can be used to measure the willingness to pay for certain characteristics of the property that cannot be valued using normal competitive market prices (Rosen, 1974). Public investments are examples of neighborhood attributes (García, Montolio, and Raya, 2010; Mathur, 2008; Oates, 1969; Prentice, Bamanie, and Jaiswal, 2025; Tiebout, 1956), and hedonic theory allows researchers to estimate their implicit values based on their capitalization into property prices. While hedonic theory measures marginal willingness to pay (MWTP) for property attributes, capitalization is the process by which these preferences are reflected and realized in actual market prices. Although related, these are distinct mechanisms—MWTP represents the theoretical preference structure, while capitalization represents how that preference translates into observable price premiums (see Ding et al. (2023); Kuminoff and Pope (2014); Banzhaf (2021)).

2.2.2 Evidence of Positive CDBG Capitalization

Improvements funded by the CDBG enhance neighborhood quality by upgrading infrastructure and improving public spaces. These improvements mitigate the negative externality associated with blight or disinvestment (Edmiston, 2012), creating more appealing neighborhoods. As neighborhood become more attractive, housing demand rises, which drives up property prices, and results in the capitalization of these improvements into property values (Pooley, 2014; Theodos, Galster, and Hermans, 2025).

To illustrate, targeted communities in Richmond, Virginia benefiting from public investments, including CDBG-backed investments, realized faster property price appreciation than neighborhoods that were not targeted for such investments (Galster, Tatian, and Accordino, 2006). Simply put, property values in targeted areas increased 10.85% faster per year than those in non-targeted areas. In a similar study, Pooley (2014) investigated how housing-related investments funded by the CDBG impact property values. She used data for neighborhoods in Philadelphia for the period 1994 to 2008. She found that census tracts that received above-threshold CDBG and other funds realized a higher property value appreciation than census tracts receiving less funds.

In a more recent study, Overton and Stokan (2025) examined the differential impacts of certain types of CDBG projects on different classes of properties. Their sample comprised of parcel level data for Dallas County for the period 2004 and 2017. They operationalized property values using two indicators: (1) residential property values and (2) commercial property values. Using fixed effects methods, their study found that developmental CDBG investments positively impact commercial but not residential values where the investment occurs. The study also finds that redistributive CDBG expenditures negatively impact commercial properties where the investment occurs, while the effect on residential properties is positive.

Collectively, this body of research highlights the positive influence of CDBG investments on property values. However, these studies have not focused exclusively on the public improvements component of the block grant, which is the central concern of the current study. We hypothesize that CDBG public investments are capitalized into property values.

3 Data

3.1 CDBG Data

The CDBG data was obtained from the Housing and Urban Development (HUD) Integrated Database and Information System (IDIS). The IDIS contains data from as far back as 1982 for all CDBG-funded projects including public services, acquisition, economic development, housing, housing services, public improvements, and other projects. We chose to examine the impact of public improvement projects, which accounted for approximately 44 percent of all the money spent during the period 1982 to 2020. We restricted the sample period to 2000 to 2019, which allows us to focus on a more recent period that better reflects the current economic conditions.

HUD records the exact location of each CDBG project. This allowed us to geocode the addresses and extract those projects completed within Cuyahoga County. The IDIS database records project locations as provided by grantees, which in some cases may reflect the address of the nonprofit or government entity conducting the activity rather than the actual project location. For instance, sidewalk improvements or street projects might be recorded with the Public Works Department address rather than the street where work occurred. To address this potential source of measurement error, we conducted a manual verification of project locations for a subset of our sample. Specifically, we reviewed the address of all 936 CDBG projects in our analysis. This review identified approximately 283 projects where the recorded address corresponded to a government agency office. Following the approach used by Overton et al. (2025), we removed these projects from the analysis.

Cuyahoga County is an appropriate setting for testing the effects of CDBG investments, given its location in the Rust Belt, a region that experienced long-term economic decline and population loss (Coppola, 2014). The county surrounds Cleveland, once the fifth largest city in the United States, which has experienced continuous decline since the 1950s and includes a mix of suburban and smaller municipalities (Keating, 2013). Over the decades, many cities in the county also face population decline, as well as aging housing stock, business closure and disinvestment (Keating and Bier, 2008). These cities, classified as shrinking cities (Ganning and Tighe, 2021), experience the very conditions the CDBG was designed to address. Hence, Cuyahoga County presents an ideal context for evaluating whether the effects of place-based investments can help stabilize property values and support revitalization in distressed communities.

The data used in the analysis shows that HUD allocated CDBG public improvements funds to eight local governments in Cuyahoga County. Appendix 1 provides a detailed breakdown of the amounts allocated to each entity, along with other descriptive statistics. Figure 1 shows the geographical distribution of CDBG projects in Ohio, with a zoomed-in figure highlighting CDBG projects in Cuyahoga County.

[Figure 1 near here]

3.2 Housing Sales Data

Our housing sales dataset is sourced from the Northeast Ohio Community and Neighborhood Data for Organizing (NEOCANDO). It includes detailed transaction records for each parcel in Cuyahoga County, Ohio, covering the period from 2000 to 2019. For each residential property, we have comprehensive information regarding its physical characteristics such as the number of bedrooms, bathrooms, lot size, building square footage, year built, building style, and exterior finish, along with its transaction history (e.g., sale date, price, and sale type). We restrict our sample to arm's length transactions of all residential properties including multifamily dwellings and condominiums..[1] Figure 3 illustrates the mean sales price trend in Cuyahoga County.

[Figure 2 near here]

To select the parcels for analysis, we followed the approach used by Haninger, Ma, and Timmins (2017) who examined the local housing price dynamics in response to brownfield cleanup. We used Geographic Information Systems (GIS) to identify homes that sold within specified buffer zones and created a binary variable to indicate whether a sale occurred within CDBG designated areas. For the main analysis, a 1000-foot buffer was created around each completed CDBG project to focus only on homes located within the immediate vicinity of these projects. We then generated a 500-foot buffer around each project to define the CDBG exposure zone. This resulted in two concentric circles around each CDBG project. Both buffers were constructed as circular polygons using Euclidean distance from the project point, and each project's buffers were maintained as separate polygons. Sales within a 500-foot radius were classified as being inside the CDBG project zone, while those beyond the 500-foot radius but within the 1000-foot buffer zone were considered outside the exposure zone. The latitude and longitude coordinates used to locate CDBG projects come directly from HUD's IDIS database. HUD geocodes activities either to an interpolated point along a street segment or to a ZIP+4 centroid (HUD, 2025).

Our goal is to compare property values inside and outside the CDBG-exposure areas. The coordinates for the sales of properties provided by NEOCANDO represent the centroids of the parcel. Parcels with centroids within the 500-foot boundary were coded as treated and those farther than 500 feet away but within the 1000-foot distance served as our controls. We used

[1] In terms of the deed type selection, we focus on warranty deed, the most common deed type in the state of Ohio.

the 500-foot radius as the treated group based on prior studies that identified this distance as an appropriate impact zone for place-based investments and other amenities. Edmiston (2012) employed a 500-foot buffer to examine the effect of CDC housing investments on property values, arguing that the impacts of place-based investments do not typically extend beyond 500 feet. Similarly, Li (2022) used a 500-foot buffer to assess the impact of high-rise developments, and Schwartz et al. (2006) included a 500-foot buffer in their analysis of place-based subsidized housing on nearby properties. In reviewing studies on property valuation impacts of parks and open spaces, Crompton and Association (2004) noted a consensus that proximity effects typically occur between 500-600 feet. Although these studies examine different types of interventions, they consistently use a 500-foot buffer, making it a well-supported starting point for defining the zone of CDBG investment impact in our study. Figure 3 provides an example of how we determine treated and control homes.[2]

[Figure 3 near here]

Since the classification is based on parcel centroids, properties whose edges are located within the treatment zone may be excluded if their centroids fall outside the 500-foot buffer. Similarly, some properties may be excluded from the control zone if their centroids fall outside the 1000-foot buffer. This misclassification should be minimal and non-systematic, affecting both groups in comparable ways. As such, we do not expect this to severely bias the analysis. Overlap between CDBG projects is another methodological concern. In cases of overlap, a project can be located within its own treatment zone while simultaneously falling inside another project's control zone. About 22 percent of the projects exhibit this issue. However, in every instance of these overlap, one project started earlier than the other(s). Properties in the later project's control zone may therefore be exposed to treatment from earlier project, introducing potential contamination. Homes in the earlier project's control zone remain unaffected. As a result, only a subset of the 22 percent are at risk of bias.

To address potential selection bias from non-random investment site targeting, we tested for balance in observable housing characteristics between treated and control groups prior to CDBG project completion (Table 1). We find no statistically significant differences in these observables, which mitigates concerns about selection on observables. However, selection bias could still arise from unobservable factors influencing site selection. Our event-study framework provides additional support for the exogeneity assumption: treated and control homes exhibit similar price trends in the years preceding project completion, consistent with the parallel trends assumption underlying DID estimation.

[Table 1 near here]

[2]We also conducted additional analyses by replicating this process using buffers of various distances to examine the robustness of our results.

Homes within the 500-foot buffer are categorized as treated in column (1), while those beyond 500 feet but less than 1000 feet from the CDBG site are controls in column (2). On average, homes closer to CDBG projects are priced at $76,995, which is $1,424 higher than those further away, representing about 4 percent of the average house value. However, this price difference is not statistically significant. Other physical characteristics are also similar between the two groups. Treated homes are generally larger, newer, and have more bedrooms and bathrooms. While the number of full bathrooms differs statistically, with an average difference of 0.048, this is economically minor. Treated homes also tend to have fewer half bathrooms and are less likely to have firewalls but more likely to be colonial in style. This similarity suggests that the selection of CDBG sites is not influenced by local housing characteristics.

4 Empirical Methodology

4.1 Difference-in-Differences Estimation

Let P_{itk} represent the log of the sale price of house i in the neighborhood around CDBG project k at time t. At some point in time, project k is completed. We consider houses only in the vicinity of completed CDBG projects (1000 feet), classifying those that are within 500 feet as the treated group.[3] These houses are expected to be most affected by the CDBG project, while other houses in the same area, though exposed to similar local public goods, are not considered treated due to greater distance from the project.

The binary variable Treat_{ik} denotes the treatment status of house i related to CDBG project k, with $\text{Treat}_{ik} = 1$ for houses in the treatment group and 0 otherwise. The variable Post_{ikt} indicates the timing of the sale, with $\text{Post}_{ikt} = 1$ for sales after the completion of CDBG project k. The model for observed log sale price is given by:

$$P_{ikt} = \mathbf{X}_{it}\beta + \phi_1\text{Treat}_{ik} + \phi_2\text{Post}_{ikt} + \phi_3\text{Treat}_{ik} \times \text{Post}_{ikt} + \gamma_{ct} + \gamma_j + \gamma_t + u_{ikt} \quad (1)$$

where $\mathbf{X}_{it}$ includes house characteristics, γ_{ct} represents the municipality c by time t fixed effect, capturing common shocks at the city level, and γ_j represents neighborhood heterogeneity. The city-by-year fixed effects flexibly absorb city-level economic shocks and market conditions that might affect housing prices, while the census block group fixed effects account for persistent neighborhood-level differences. Together, these fixed effects specifications mitigate concerns about omitted time-varying neighborhood characteristics (e.g., population changes, poverty trends, housing composition shifts) that could confound our estimates. The coefficient ϕ_3 is the

[3]Estimates derived from buffers generated at various distances are also presented.

expected log price change for the treated group minus that for the control group:

$$\phi_3 = (E[P^1_{ik}|\text{Treat}=1] - E[P^0_{ik}|\text{Treat}=1]) - (E[P^1_{ik}|\text{Treat}=0] - E[P^0_{ik}|\text{Treat}=0]) \tag{2}$$

The DID model's key assumption is common trends, suggesting that in the absence of CDBG projects, the expected house values for the treated group would have followed the same trend as those in the control group:

$$(E[P^1_{ik}|\text{Treat}=1] - E[P^0_{ik}|\text{Treat}=1]) = (E[P^1_{ik}|\text{Treat}=0] - E[P^0_{ik}|\text{Treat}=0]) \tag{3}$$

Under this assumption, ϕ_3 identifies the average treatment effect on the treated (ATT).

The second assumption of the DID model concerns the exogeneity of CDBG projects. Endogeneity may arise if decisions were deliberately made to direct CDBG investments towards areas in which home prices were already appreciating. This may lead to biased estimates, capturing the effect of investment choices rather than accurately reflecting the effect of the CDBG investments. Although we lack detailed data on CDBG application and selection processes, we conduct tests to assess whether treated and control homes differ significantly in observable house attributes, which could imply differential housing price trajectories due to local municipality decisions in selecting CDBG sites.

4.2 Dynamic Effects of CDBG Projects

To understand the dynamic effects of CDBG projects on housing prices, we employ an event-study type DID regression, following a strand of literature using stacked DID (Cengiz et al., 2019).

$$P_{ikt} = \mathbf{X}_{it}\beta + \sum_{d=-6, d\neq -1}^{6} \varphi_d \text{Treat}_{ikt} \times \mathbb{1}[t=d] + \gamma_{ct} + \gamma_j + \gamma_t + u_{ikt} \tag{4}$$

where $\mathbb{1}[t=d]$ is an indicator function for house i's sale year t being d years from the completion of CDBG project k. The coefficients φ_d, $d = -6, \dots, -2, 0, 1, \dots, 6$, measure the log price differences between treated and control homes up to 6 years before and after completion, relative to the year prior to completion. This time frame reflects a practical medium-term horizon for policy evaluation while accommodating our data constraints: the study period ends in 2019, limiting available follow-up for projects completed after 2013. To ensure that our estimates are not affected by potential spillovers from nearby CDBG projects or by overlap with subsequent CDBG projects, we include only the first transaction of homes that were sold more than once. This approach helps address concerns about heterogeneous treatment effects in DID models, as discussed in recent literature (Roth et al., 2023).

5 Results

5.1 The Impact of Public Investment on Housing Prices

Table 2 shows our main results of the DID estimation. The dependent variable is the inflation adjusted log sale price[4] across all columns, with increasingly added controls and fixed effects.

[Table 2 near here]

Column (1) includes house attributes and the sale year fixed effect. In column (2), we introduce the city-by-year fixed effect to absorb city-specific shocks concurrent with CDBG completion. Column (3) adds the sale month fixed effect, accounting for more detailed common shocks and the seasonality of the housing market. Column (4), our preferred specification, includes the census block group fixed effect to capture neighborhood-level heterogeneity.

While the key variable of interest is Treat × Post, other coefficients merit some discussion. The coefficient of Treat is approximately zero and statistically insignificant, suggesting that sale prices of homes in the treatment and control groups are comparable prior to CDBG project completion. Most of the results on the housing attributes are consistent with expectation. Lot size and building square footage have a positive statistically significant effect on sales prices. The number of half bathrooms also have a positive effect on sales prices. The results further reveal that the number of bedrooms does not have a positive correlation with housing prices.

In column (4), the estimate of Treat × Post is 4.1 percent, implying that within a 6-year window, houses near CDBG projects appreciate by 4.1 percent on average compared to those further away.[5] Our findings align with existing research that demonstrates the positive impacts of CDBG public investments on property values. Galster, Tatian, and Accordino (2006) found that market values for single-family homes in census tracts receiving above threshold CDBG investments appreciated at a rate of 10.5 percent annually post intervention. Similarly, Pooley (2014) reported that census tracts receiving above sample median investments appreciated greater than census tract with less investment. Theodos, Galster, and Hermans (2024) found that home prices near CDBG projects appreciated by 5%, 16% and 19% more than the counterfactual in LA County, New Jersey City and Washington DC, respectively. Overton and Stokan (2025) found that CDBG investments capitalize into property values, although the effect is different for residential and commercial properties. Our results lend further support to the positive capitalization effects

[4] All sale prices are adjusted using the U.S. housing CPI and in 2000 dollars.

[5] To ensure our results are robust to time-varying neighborhood-level characteristics, we re-estimated our preferred specification (Column 4) replacing city-by-year fixed effects with census tract-by-year fixed effects. The coefficient on $Treat \times Post$ remains 0.031 and statistically significant at 5% level, similar to our main result of 0.041, confirming that neighborhood-level factors do not drive our estimates.

of CDBG investments found in these studies.

5.2 Robustness Checks

Table 3 presents three robustness specifications to verify the stability of our main findings across different sample restrictions and methodological approaches.

[Table 3 near here]

Column (1) uses all sales data, rather than the 6-year window, to examine the long-term effects of public investments. The results of this analysis are consistent with the main findings, showing that treated homes, on average, appreciate by 4.8 percent over the entire period. Column (2) addresses concerns about the 2008-2009 financial crisis and heterogeneity across treatment cohorts in our stacked DID framework. We re-estimated our main specification excluding CDBG projects completed during the years of 2008 and 2009 and the effect remains unchanged (3.2%). This finding confirms that exceptional housing market conditions during the financial crisis do not drive our estimates.

As a final robustness check, column (3) addresses a methodological concern regarding properties exposed to multiple CDBG projects simultaneously. Among our 2,324 treated homes (within 500 feet), 85.9% were exposed to only a single CDBG project during the study period, while 14.1% fell within the radius of multiple projects or simultaneously occupied treatment and control zones of different projects. In a stacked DID framework, multiply-exposed properties may experience measurement error in treatment assignment, which would attenuate point estimates downward.

When we restrict the sample to homes with single project exposure, the Treat $\times$ Post coefficient increases to 4.8 percent, compared to 4.1 percent in our main specification. This 17% increase is consistent with theoretical expectations and suggests that our primary estimate represents a conservative lower bound of the treatment effect for a single CDBG project. The consistency of results across all three robustness checks underscores the stability and credibility of our core findings.

5.3 The Dynamic Effects of Public Investment on Housing Prices

We employ Equation (4) to assess the dynamic effects of CDBG project completion on local housing prices. Figure 4 illustrates the empirical results using yearly data within a 6-year window of any CDBG project completion.

[Figure 4 near here]

This also serves as a test for the parallel trend assumption in our DID model. As can be seen from the figure, coefficients of φ are small and not statistically significant prior to the completion of a CDBG project. The parallel trend prior to year zero also suggests there is no anticipation effect, countering the notion that home buyers may strategically bid up prices in areas that are expected to receive public investment. Additionally, up to two years following the completion, there are no statistically different effects on sale prices for homes that are close to and further away from CDBG projects. Despite this, we observe a quantitatively large effect starting from the third year after the completion with a 4.2 percent appreciation relative to homes that were not treated by CDBG projects. This effect is persistent for the following years, with a slight increase in the fourth year and a more substantial increase occurring in the fifth year. The effect remains positive in the subsequent year. This finding contrasts with the study by Theodos, Galster, and Hermans (2024) who reported an initial spike in house prices after investment followed by a more gradual increase.

5.4 Heterogeneous Effects by House Value and Investment Size

In line with previous studies, we explored the consistency of outcomes across different contexts. Galster et al. (2004) divided their sample of neighborhoods into three categories based on whether the trend in home prices showed a significant decline, moderate change or significant increase leading up to the sample period. Theodos, Galster, and Hermans (2024) divided their sample into two groups based on whether their census tracts were above or below the median percentage of the population in poverty and median value of owner-occupied dwellings. Our analysis applies an approach comparable to theirs. Table 4 presents the results for sales below and above the median sales price. Much like the analysis by Theodos, Galster, and Hermans (2024), our study finds a larger effect for below median homes. Column (1) shows homes below the median appreciated by 6.8 percent while column (2) finds those above the median appreciated by 1 percent and not statistically significant.

[Table 4 near here] (5)

To examine whether CDBG effectiveness varies with project size, we stratified our analysis by funding quartiles. Table 5 reveals a non-monotonic relationship, with the strongest effect in Q2 (mean funding $11,781) at 11.4%, substantially exceeding effects in Q1 (1.6%), Q3 (3.8%), and

Q4 (-3.2%). We interpret this pattern through several mechanisms. First, very small projects in Q1 may be too modest to register meaningfully in property markets, while Q2-sized projects achieve optimal visibility and neighborhood salience. Second, larger projects in Q3 and Q4 often span multiple neighborhoods or are dispersed across census tracts, diluting localized property value effects. Our 500-foot treatment radius captures concentrated benefits; large dispersed projects generate effects spread too thinly to detect at this spatial scale. Third, larger funding amounts may reflect capital-intensive infrastructure serving broader regional functions rather than discrete neighborhood amenities. This heterogeneous finding suggests that CDBG effectiveness reflects an optimal project size, with important implications for strategic resource allocation.

[Table 5 near here]

5.5 The Spillover Effects

A crucial consideration in evaluating the impact of place-based investments is whether the observed benefits extend beyond the immediate vicinity of the project sites. If public improvements lead to increased property values only within a narrow radius, their broader economic significance may be limited. On the other hand, if these investments generate positive spillovers, they could contribute to wider neighborhood revitalization. To examine these spillover effects, we analyze property value changes at varying distances from CDBG project sites and employ a donut-ring specification to test for spatial decay in treatment effects.

We estimate multiple difference-in-differences specifications with progressively varying distance thresholds. Rather than relying on a single distance cutoff, we compare homes at different distance bands to the CDBG projects, allowing us to trace how treatment effects decay with spatial distance. This approach follows recent spatial econometric practice (Kim 2024) and provides robust evidence about the geographic scope of CDBG investment benefits. Specifically, we estimate four key specifications: (1) comparing 0-1,000 ft to 1,000-2,000 ft to test for broad spillover; (2) comparing 0-500 ft to 1,000-2,000 ft to examine our core treatment zone; (3) implementing a donut-ring specification comparing 0-500 ft to 1,000-1,500 ft by omitting the intermediate 500-1,000 ft buffer, allowing us to isolate pure localized effects without intermediate zone contamination; and (4) comparing 500-1,000 ft to 1,500-2,000 ft to directly test whether the intermediate zone experiences spillover effects.

Table 6 presents the estimated spillover effects across all four distance specifications. The results reveal a clear and consistent pattern of spatial decay in treatment effects. When we compare homes within 1,000 feet of CDBG projects to homes between 1,000 and 2,000 feet away, we find a statistically significant treatment effect of 2.3% effect in column (1). However, as we progressively narrow the treatment zone to focus on the core area within 500 feet, the estimated effects grow substantially larger. Our main specification comparing homes within 500 feet (treatment) to homes between 1,000 and 2,000 feet (control) yields 4% effect (Column 2). This substantial increase relative to Column (1) suggests that treatment benefits are highly concentrated in the core treatment zone.

To implement a donut-ring specification and examine spatial decay with greater precision, we employ two additional distance comparisons. Column (3) compares the core treatment zone (0-500 ft) directly to homes 1,000-1,500 feet away, explicitly omitting the intermediate 500-1,000 ft buffer zone. This specification isolates the pure localized treatment effect and yields an effect of 4.1%. The substantial magnitude of this donut-ring estimate confirms that treatment benefits remain highly concentrated within 500 feet even when excluding the ambiguous intermediate zone, demonstrating that our results are not driven by control-group contamination from nearby treated homes. Column (4) directly tests whether the intermediate zone (500-1,000 ft) experiences spillover effects by comparing it to homes 1,500-2,000 feet away. The negligible and statistically insignificant coefficient of 0.9% indicates that the intermediate zone exhibits virtually no treatment spillover.

The pattern across all four columns is clear and internally consistent: the 0-500 ft zone shows effects of approximately 3.5–4.0%, the intermediate 500-1,000 ft zone shows minimal effects of approximately 0.9%, and zones beyond 1,000 feet show no meaningful effects. These results demonstrate that CDBG-funded public improvements generate highly localized benefits that dissipate rapidly with distance. The 500-foot threshold identified in our primary analysis represents a meaningful boundary where treatment effects transition from substantial to negligible.

Figures 5a through 5d provide dynamic evidence of the spatial decay pattern across all distance specifications in event-study format. Figure 5a displays the event-study estimates for the broad spillover comparison (0-1,000 ft vs 1,000-2,000 ft, Column 1), showing statistically significant effects beginning in year 3 that reach approximately 4.2% by year 6. Figure 5b presents the dynamic effects for our main specification (0-500 ft vs 1,000-2,000 ft, Column 2), revealing the strongest treatment effects, reaching approximately 4.2% by year 3 and continuing to grow substantially, with effects reaching 4.2% in year 6.

Figure 5c shows the donut-ring specification (0-500 ft vs 1,000-1,500 ft, Column 3), which reaches the largest treatment effects among all specifications, reaching 17.4% by year 6. The dramatic increase in the donut-ring specification relative to Figure 5b indicates that homes in the 1,000-1,500 ft range experience meaningful indirect benefits from CDBG investments, though substantially less than the core 0-500 ft treatment zone. Finally, Figure 5d displays the intermediate zone spillover test (500-1,000 ft vs 1,500-2,000 ft, Column 4), which reveals negligible and predominantly negative or near-zero coefficients across the post-treatment period, confirming the absence of spillover in the intermediate zone. These figures provide compelling visual evidence that the spatial decay in treatment effects reflects genuine spatial heterogeneity in the capitalization of CDBG investments, not an artifact of our modeling approach.

These findings align with prior research indicating that the capitalization of public investments is strongest for properties in close proximity to the improvements (Nygaard, Galster, and Glackin, 2024; Rossi-Hansberg, Sarte, and Owens, 2010; Theodos, Galster, and Hermans, 2024). The lack of sustained appreciation beyond 1,000 feet underscores the localized nature of these investments and has important policy implications for site selection and project clustering strategies. By demonstrating that CDBG benefits are highly concentrated within short distance from the project, our results suggest that maximizing the geographic reach of program benefits requires careful site selection and potentially greater spatial distribution of investments across neighborhoods.

6 Conclusion

This paper examines public investments, backed by CDBG funds, affect the attractiveness of neighborhoods, as measured by property values. Using parcel level data from Cuyahoga County, Ohio, spanning the period 2000 to 2019, we analyze the dynamic timing effects of CDBG intervention, which is a technique rarely used in CDBG capitalization studies. This approach allowed us to disentangle the effects of the CDBG public improvements over an extended period following the intervention.

We presented several models to show the robustness of the analysis and conducted statistical tests to address potential selection bias. The analysis demonstrates that CDBG public investments lead to capitalized benefits for homeowners. On average, homes that sold within 500 feet of completed CDBG public investments commanded a sales price that was 4.1 percent higher than homes located further away from the site. This finding has a meaningful policy implication. By investing in community facilities, infrastructure, parks and recreation and other public improvements, local governments can increase the physical environment of neighborhoods, which in turn raises their appeal, as reflected through the appreciation of property values. Local governments can, therefore, intentionally invest CDBG funds in urban neighborhoods with declining property values to foster their revitalization.

Our study also finds that CDBG-funded capital investments have no measurable impact on properties that are further away from project sites, suggesting that the benefits are localized. This implies that homeowners within CDBG-investment zones enjoy an increase in their property wealth, while this may not be the case for those outside of the zones. An important implication of this finding is that local governments aiming to maximize the economic benefits of CDBG-funded projects in urban areas, should strategically leverage these investments. Integrating CDBG projects into wider revitalization efforts may ensure that homeowners beyond the immediate vicinity of intervention sites also benefit from the improvements. Site selection should be considered as well to ensure that interventions are effectively dispersed. While this perspective challenges the prevailing view that interventions should be clustered, as suggested by Kim (2024), dispersion may be less detrimental than previously assumed. Distributing public investments more evenly across areas may indeed maximize the benefits for a broader segment of the neighborhood.

Our event study analysis reveals that the impacts of the investments do not occur immediately but sets in approximately three years after completion. The effect is negative and insignificant in the first year but then emerges slowly, but insignificantly in the second year. The effect become statistically significant by year three, strengthens through year five, and then plateaus while persisting into the sixth year. Our results differ from those of the study by Theodos, Galster, and Hermans (2024) which reports a significant initial increase that becomes more gradual over time. The difference in results may be attributed to our focus on public improvements while their study considered all types of investments. Despite the differences in timing, both studies agree that the effect of the investments persists over time even though they eventually taper off.

A key implication of the event study analysis is that evaluating how the impacts of CDBG projects evolve over time is crucial. Our findings indicate that the effects of such investments may take time to materialize, suggesting that development initiatives be launched with the expectations that investment benefits may unfold in the medium to long term. This insight can encourage policymakers to exercise patience rather than terminating projects prematurely due to lack of immediate benefits, as suggested by Kim (2024). The persistent effects we observed demonstrate that funded improvement projects provide continued benefits; thereby, contributing to longer-term sustained growth for beneficiary communities.

Another important finding is that the impact of the investments are more pronounced for homes that sell below the median price, suggesting that place-based programs funded by the CDBG can yield success even in neighborhoods with lower property values. While this finding contrasts with previous studies indicating better outcomes for neighborhoods with stronger economic performance (Galster et al., 2004; Walker et al., 2002), it matches the result found by Theodos, Galster, and Hermans (2024). Based on this result, as advocated by Bostic (2014) and Kim (2024), we argue for re-evaluating the long-held assumptions favoring investment in neighborhoods with better economic conditions. Investing in economically lagging communities should not be viewed as a suboptimal option, as such investments can yield positive outcomes. Our findings provide suggestive evidence that may merit renewed examination of the traditional 'need versus efficiency' debate (Thomson, 2008; Bostic, 2014). The stronger impacts we observe for lower-valued properties suggest that investing CDBG-funded public improvements, in high-need urban areas can generate both social equity and efficiency gains in this context. Rather than viewing these goals as mutually exclusive, policymakers in similar contexts may find that directing resources toward the most disadvantaged neighborhoods could foster positive change and advance both equity and efficiency.

Our heterogeneous effects analysis by investment size reveals an additional important finding. The capitalization effect follows a non-linear pattern across project funding quartiles, with the strongest effect occurring for moderately-sized projects (Q2, 11.4%) rather than the smallest (Q1, 1.6%) or largest projects (Q4, -3.2%). This inverted-U relationship suggests that CDBG effectiveness reflects an optimal project size. Distributing funding across multiple appropriately-sized projects may maximize capitalization effects and achieve broader revitalization benefits across neighborhoods compared to concentrating resources into single large interventions. This finding supports our earlier argument that a dispersal strategy warrants reconsideration relative to traditional clustering approaches.

The current study provides valuable insights, though it is subject to some limitations. The study uses data from Cuyahoga County, Ohio, which may limit the ability to generalize the findings to other areas. As Theodos, Galster, and Hermans (2024) emphasize, neighborhood context matters and results may vary depending on local conditions. For instance, their study found that outcomes for LA County, California were notably different to those for Jersey City, New Jersey and Washington D.C. Another limitation is that we did not account for the intensity and frequency of investments. Future research should explore how these factors influence outcomes. Furthermore, future studies should analyze how different categories of CDBG spending such as economic development, acquisition and housing evolve and influence neighborhood outcomes over time. Finally, investigating the persistence of the CDBG impacts on other neighborhood change variables such as employment, median household income and other socio-economic variables would yield meaningful discoveries. These inquiries can provide deep insights into the effectiveness of CDBG investments in advancing place-based policy goals in urban areas.

Disclosure Statement

The author (s) report there are no competing interests to declare.

Use of AI Tools

We edited portions of the manuscript using AI-assisted tools such as Microsoft Copilot, based on GPT-4 and ChatGPT using GPT-4; however, all the content is ours.

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7 Tables

Table 1: Summary Statistics for Major House Attributes

	(1) Treat	(2) Control	(3) Difference
Price	76,995.5	75,571.2	1,424.275
	[57715.5]	[48101.9]	(4,535.373)
Log price	10.96	10.92	0.041
	[0.902]	[1.011]	(0.060)
Log lotsize	8.543	8.565	-0.023
	[0.462]	[0.460]	(0.020)
Log square footage	7.372	7.345	0.027
	[0.317]	[0.320]	(0.016)
Age	82.74	84.42	-1.680
	[24.96]	[25.13]	(1.871)
No. bedrooms	3.536	3.449	0.087
	[1.248]	[1.089]	(0.082)
No. bath	1.439	1.391	0.048***
	[0.594]	[0.558]	(0.016)
No. halfbath	0.155	0.193	-0.038
	[0.368]	[0.418]	(0.043)
Wall fire	0.344	0.352	-0.008
	[0.475]	[0.477]	(0.008)
Col style	0.757	0.703	0.055**
	[0.429]	[0.457]	(0.024)
Observations	7,831	34,405	42,236

Notes: This table reports the summary statistics for major house attributes for treated and control homes. All observations shown are pre-treatment sales (years -6 through year -1 relative to completion), pooled across all CDBG projects. Treated homes are those within 500 feet of a completed project; control homes are 500-1,000 feet away. Standard deviations are in brackets and standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Difference-in-Difference Results

Dep Var: Log price	(1)	(2)	(3)	(4)
$Treat$	0.029	0.056**	0.036*	-0.011
	(0.038)	(0.026)	(0.017)	(0.015)
$Post$	-0.059*	-0.016***	-0.005	-0.002
	(0.029)	(0.003)	(0.004)	(0.002)
$Treat \times Post$	0.043	0.071***	0.074***	0.041**
	(0.050)	(0.019)	(0.022)	(0.017)
Log lot size	0.243***	0.101***	0.101***	0.071**
	(0.080)	(0.020)	(0.020)	(0.029)
Log square footage	0.535***	0.466***	0.461***	0.366***
	(0.079)	(0.026)	(0.024)	(0.016)
Age	-0.008**	-0.012***	-0.012***	-0.010***
	(0.003)	(0.001)	(0.001)	(0.001)
Age square	-0.000	0.000**	0.000**	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
No. bedroom	-0.051*	-0.009***	-0.013**	0.035***
	(0.024)	(0.001)	(0.005)	(0.003)
No. bath	-0.020	-0.021	-0.021**	-0.066***
	(0.026)	(0.012)	(0.009)	(0.011)
No. halfbath	0.218	0.052**	0.079***	0.032
	(0.143)	(0.021)	(0.015)	(0.026)
Wall fire	-0.168***	-0.099***	-0.117***	-0.109***
	(0.032)	(0.014)	(0.015)	(0.012)
Col style	-0.190***	-0.062***	-0.047***	0.024***
	(0.054)	(0.017)	(0.016)	(0.007)
Year Fixed Effect	✓			
City-by-Year Fixed Effect		✓	✓	✓
Year-by-Month Fixed Effect			✓	✓
Block Group Fixed Effect				✓
Observations	29,869	29,869	29,869	29,869
R^2	0.413	0.519	0.568	0.638

Notes: This table reports the results of stacked difference-in-differences estimation pooling sales within 6 years from any completion of a CDBG project. Robust standard errors are clustered at the municipality level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Robustness Checks

Dep Var: Log price	(1) All Sales	(2) Excl. 2008-2009	(3) Single Exposure Only
$Treat$	-0.011	-0.007	-0.081***
	(0.015)	(0.014)	(0.012)
$Post$	-0.002	0.001	-0.003
	(0.002)	(0.003)	(0.003)
$Treat \times Post$	0.041**	0.032**	0.048***
	(0.017)	(0.015)	(0.016)
Observations	29,869	26,773	19,825
R^2	0.638	0.577	0.644

Notes: This table reports robustness checks. The dependent variable is log sale price. Column (1) does not restrict sales to be within 6 years of CDBG project completion. Column (2) excludes CDBG projects completed during the peak financial crisis years (2008-2009) to address concerns about housing market distortions during this period. Column (3) restricts the sample to treated homes (within 500 feet) with exposure to only a single CDBG project, excluding 328 multiply-exposed homes (14.1% of treated sample). This specification addresses potential measurement error in treatment assignment when properties are exposed to multiple CDBG projects simultaneously. All specifications control for the full set of controls in Column (4) of Table 2, including house characteristics, city-by-year fixed effects, year-month fixed effects, and census block group fixed effects. Robust standard errors are clustered at the municipality level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Heterogeneous Effects by House Price Level

Dep Var: Log price	(1) Below Median	(2) Above Median
$Treat$	0.055	0.016
	(0.043)	(0.010)
$Post$	-0.009	0.035***
	(0.006)	(0.009)
$Treat \times Post$	0.068***	0.010
	(0.019)	(0.016)
Observations	13,053	16,471
R^2	0.615	0.639

Notes: This table reports heterogeneous treatment effects by neighborhood price level. The dependent variable is log sale price. Column (1) uses homes with sale prices below the median; Column (2) uses homes with sale prices above the median. All specifications control for the full set of controls in Column (4) of Table 2, including house characteristics, city-by-year fixed effects, year-month fixed effects, and census block group fixed effects. Robust standard errors are clustered at the municipality level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Heterogeneous Effects of CDBG by Investment Quartile

	(1) Q1	(2) Q2	(3) Q3	(4) Q4
$Treat$	0.025***	-0.092***	0.030	-0.029
	(0.001)	(0.007)	(0.025)	(0.034)
$Post$	-0.041***	-0.020**	0.020***	0.013*
	(0.001)	(0.006)	(0.005)	(0.007)
$Treat \times Post$	0.016***	0.114***	0.038	-0.032
	(0.002)	(0.011)	(0.051)	(0.018)
Observations	7,453	7,523	7,400	7,421
R^2	0.573	0.623	0.719	0.767
Mean Funding	1,447	11,781	61,618	263,065

Notes: This table reports the heterogeneous impacts of CDBG public investment projects by its funding amount. Dependent variable is log of house sale price. Column (1) through column (4) use the first (lowest), second, third, and the fourth quartile of the funding, where the last row shows the mean funding amount in dollars for each group. All specifications control for the full set of controls, including house characteristics, city-by-year fixed effect, month fixed effect, and block group fixed effect. Robust standard errors are clustered at the municipality level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Spillover Effects

	(1) 0-1000 vs 1000-2000	(2) 0-500 vs 1000-2000	(3) 0-500 vs 1000-1500	(4) 500-1000 vs 1500-2000
$Treat$	0.002	0.020	0.049*	-0.010
	(0.015)	(0.022)	(0.025)	(0.016)
$Post$	-0.012***	-0.013***	-0.005*	-0.009
	(0.002)	(0.002)	(0.003)	(0.005)
$Treat \times Post$	0.023***	0.040	0.035	0.009
	(0.004)	(0.023)	(0.029)	(0.011)
Observations	127,743	103,587	49,602	78,104
R^2	0.615	0.623	0.639	0.628

Notes: This table reports the results for potential spillover effects at varying distances. The dependent variable is log sale price. Column (1) uses sales within 1,000 ft as treated group and sales between 1,000 and 2,000 feet as control group. Column (2) uses homes within 500 feet as treated group and homes between 1,000 and 2,000 feet as control group. Column (3) employs a donut-ring specification, comparing homes within 500 feet (treatment) to homes between 1,000 and 1,500 feet away (control), explicitly omitting the intermediate 500-1,000 ft buffer zone to isolate pure localized treatment effects. Column (4) tests for spillover in the intermediate zone by comparing homes between 500-1,000 feet (treatment) to homes between 1,500 and 2,000 feet (control). All specifications control for the full set of controls, including house characteristics, city-by-year fixed effect, month fixed effect, and block group fixed effect. Robust standard errors are clustered at the municipality level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

8 Figures

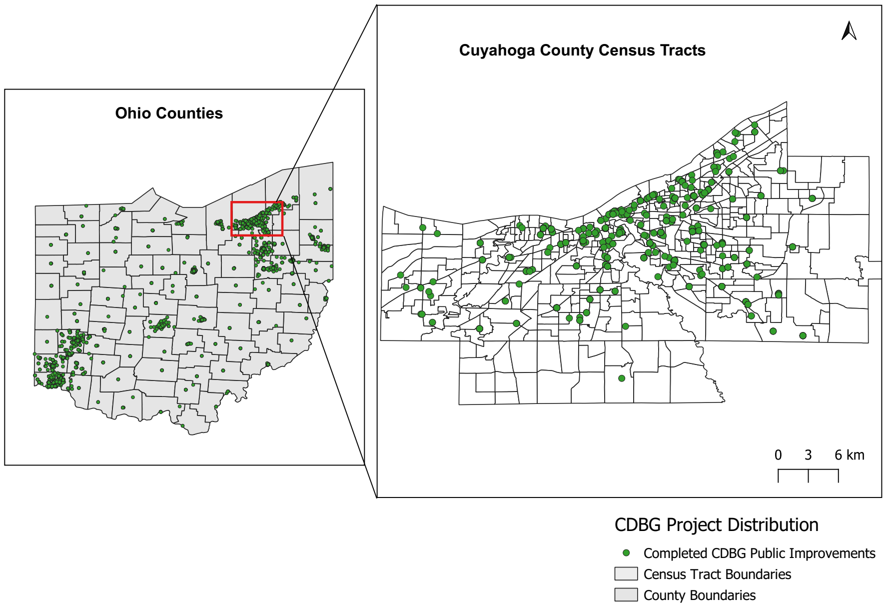


Figure 1: Map of CDBG

Notes: This figure plots the geographical distribution of CDBG projects over all years.

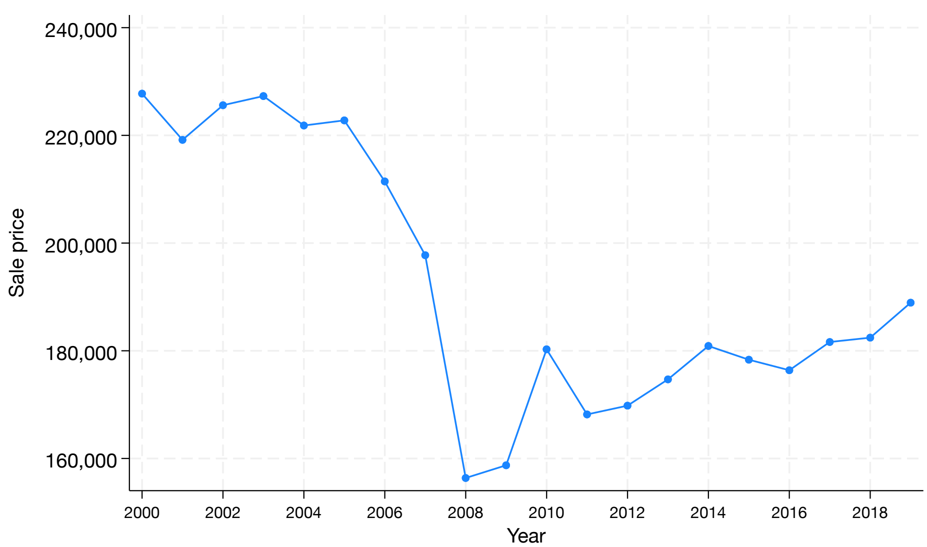


Figure 2: Trend of Housing Sales Price

Notes: This figure plots the average sale price by year. Housing sale prices are adjusted by December 2019 housing CPI.

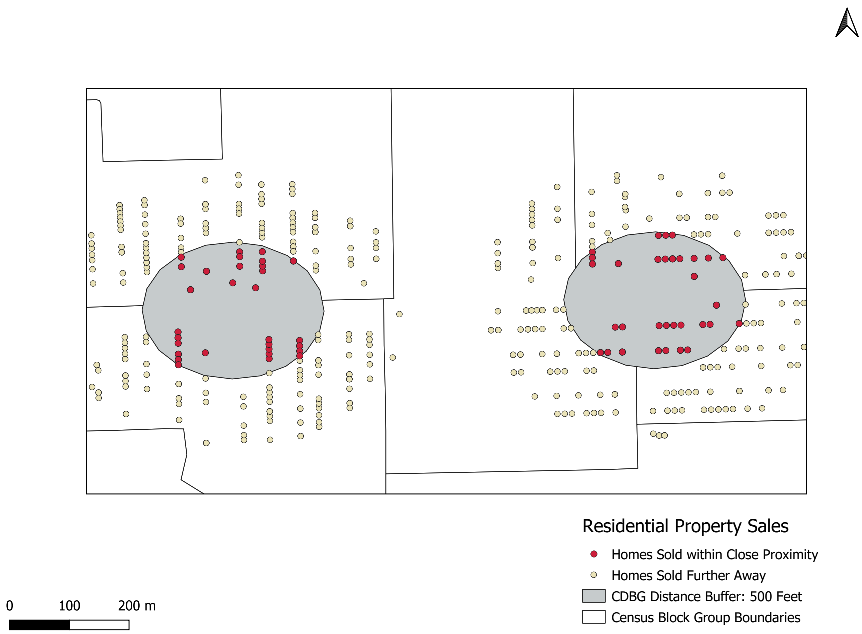


Figure 3: Illustration of Treatment and Control Selection

Notes: This figure provides the example of how we select treatment and control homes.

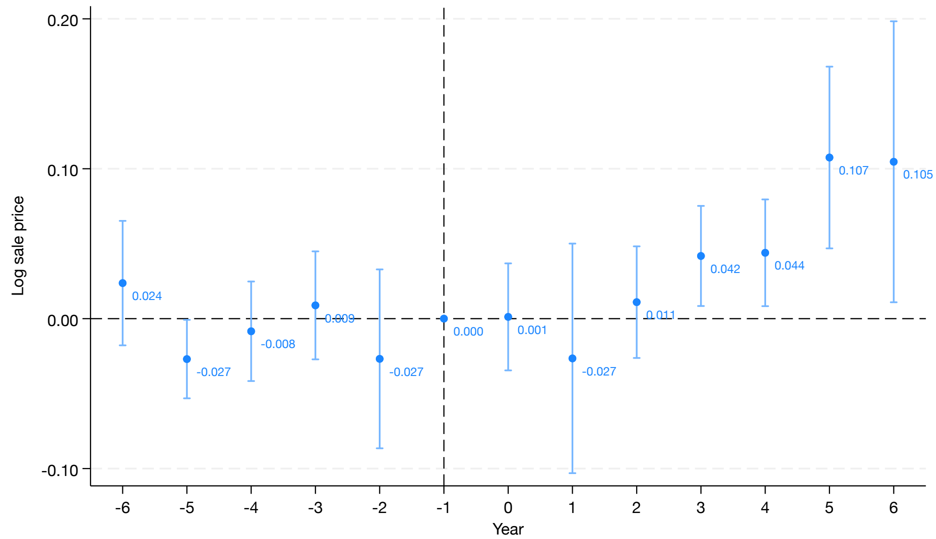
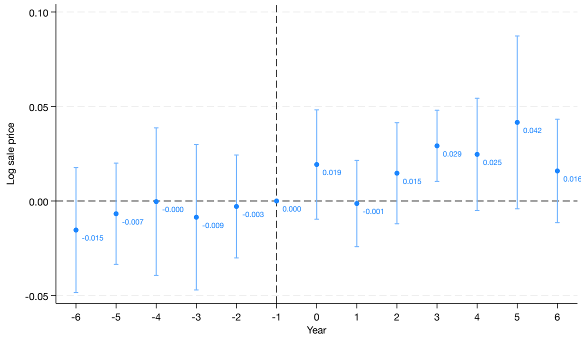
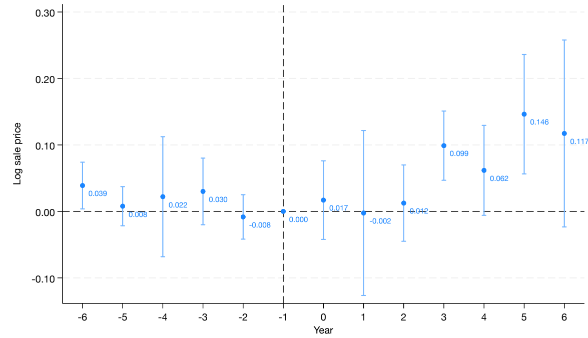


Figure 4: Dynamic Effects of the Completion of CDBG Projects

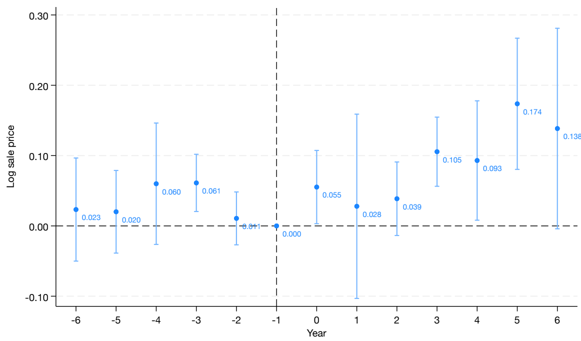
Notes: This figure plots the dynamic effects of the completion of a CDBG project on house values within 6 years for homes within 500 feet versus homes between 500 ft and 1,000 ft.



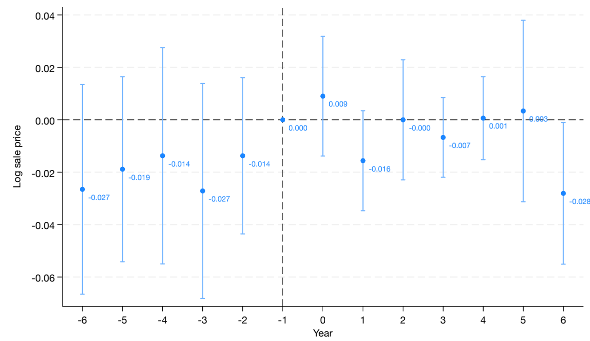
(a) 0-1,000 ft vs 1,000-2,000 ft



(b) 0-500 ft vs 1,000-2,000 ft



(c) 0-500 ft vs 1,000-1,500 ft (Donut-ring)



(d) 500-1,000 ft vs 1,500-2,000 ft

Figure 5: Event Study Estimates of CDBG Treatment Effects at Varying Distances

Notes: This figure presents event-study estimates of dynamic treatment effects across four distance specifications. Panel (a) compares homes 0-1,000 ft from CDBG projects to homes 1,000-2,000 ft away. Panel (b) compares homes within 500 ft to homes 1,000-2,000 ft away. Panel (c) employs a donut-ring specification comparing homes 0-500 ft to homes 1,000-1,500 ft away, omitting the intermediate 500-1,000 ft buffer zone. Panel (d) compares homes 500-1,000 ft away to homes 1,500-2,000 ft away. All specifications include house characteristics, city-by-year fixed effects, month fixed effects, and block group fixed effects. Coefficients are relative to one year prior to project completion.

Appendices

A Additional Tables

Table A1: Descriptive Statistics for CDBG Public Improvement Expenditures in Cuyahoga County during 2000 to 2019

Variable	Summary
Total funding for CDBG Public Improvement Projects	$45,579,888.28
Maximum spent within a block group	$6,035,442.77
Total CDBG Public Improvement Projects*	653
Number of unique project types	14
Maximum number of unique project types within a block group	6
Number of municipalities with CDBG Public Improvement Projects	23
Number of block groups with CDBG Public Improvement Projects	148

Notes: *projects remaining after the government administrative offices were removed. Most block groups have only 1 project (64 block groups), while one block group has 42 projects.