



# Externalities of public housing: The effect of public housing demolitions on local crime



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## ABSTRACT

This paper evaluates the potential for negative externalities from public housing by examining crime rates before and after demolition of public housing projects in Chicago between 1995 and 2010. Using data on block-level crimes by type of crime merged to detailed geographic data on individual public housing demolitions, I find evidence that Chicago's public housing imposed significant externalities on the surrounding neighborhood. Using a difference in difference approach comparing neighborhoods around public housing projects to nearby neighborhoods I find that crime decreases by 8.8% after a demolition. This decrease is concentrated in violent crime. I use an event study to show that the decrease occurs at the approximate date of the eviction of the residents and persists for at least 5 years after the demolition. Neighborhoods with large demolitions and demolitions of public housing that had been poorly maintained display the largest crime decreases.

## 1. Introduction

In the 1930s, cities in the United States began providing subsidized, government-run rental housing to give temporary shelter to those whom the market fluctuations of the era left homeless. Since then, US public housing has gone through a number of changes, most recently including defunding, deterioration, and social decay. Many consider the program a failure due to the high crime rates, gang problems, and public health issues observed in many of the large public housing projects built in the 1950s and 1960s (Hunt, 2009). The gradual defunding of the US public housing program provides a natural experiment to explore the effect of this housing on the community. The quality of public housing has declined to such an extent that cities have begun to demolish it with help from the federal government. These demolitions result in a sudden removal of public housing projects from a geographic location.

As of the mid-90s, Chicago had the third largest public housing stock of the United States, exceeded only by New York and Puerto Rico, and the most troubled public housing of any city in the country due to the heavy influence of gangs and periods of mismanagement by the housing authority (Popkin et al., 2000). Chicago began demolishing its troubled and troublesome public housing high-rises beginning in

August 1995 and continued to demolish and rebuild for the next 15 years, working in earnest starting in 2000 with the beginning of the Chicago Housing Authority's "Plan for Transformation." The size and length of Chicago's demolition program makes it ideal for studying the effect of public housing on the surrounding neighborhood.

This paper focuses on neighborhood as the unit of analysis and shows the effect of the demolitions on neighborhood crime rates. Crime rates are high in public housing neighborhoods relative to the rest of the urban landscape (Popkin et al., 2000). Public housing complexes concentrate problems that already exist in the urban landscape.

If the structure and culture of the public housing complexes increases crime rates, we would expect crime to go down when the buildings are demolished. On the other hand, if public housing simply concentrates crime, a demolition may cause a redistribution of crime without a global decrease. From a crime control perspective, both changes in crime are important because they would necessitate changes in policing patterns; however a global decrease in crime is clearly the more welfare-enhancing outcome.

I assemble and use a novel block-level dataset containing crimes committed in Chicago between 1999 and 2011 to look at the effect of demolitions on local crime levels. I find that crime levels decrease after a demolition in the area immediately surrounding the demolition

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relative to areas farther away. I employ a modified difference in difference identification strategy that uses a continuous treatment scaled by the number of units demolished to allow for multiple treatments of different sizes per block. The estimates show that crime decreases by 8.8% within a quarter mile of a demolition. This result attenuates when I include blocks that are farther away from the demolition in the treatment area, but remains statistically distinguishable from zero. The decrease in the number of crimes committed is observable across all types of serious crimes, but violent crimes exhibit the largest percent decreases. An event study shows that the decrease in crimes occurs approximately at the time that the residents are evicted from their housing units prior to the demolition and persists for at least five years following the demolition.

This paper builds on the work by [Aliprantis and Hartley \(2015\)](#). [Aliprantis and Hartley \(2015\)](#) find a decrease in crime following the demolition of public housing high rises in Chicago, a result that this paper confirms with different data and a different methodology. This paper develops our understanding of that effect further by carefully exploring the timing of the crime decrease. The exploration of timing both establishes more firmly that the demolition, rather than a general crime decrease, drives this local crime decrease. It also shows that the crime decrease is associated with the timing of the population decrease, rather than the structural demolition. This indicates that the people, whether they represent a concentration of victims or a network of criminals, are an important component of the place when trying to understand the high rates of crime in and near public housing. This paper also explores several sources of heterogeneity in the public housing that was demolished to try to understand what characteristics of housing and the neighborhood were most associated with the large crime decreases at demolition. There are several potentially criminogenic characteristics of the public housing that was demolished. Most was poorly maintained, most of the demolished structures were high rises that were hard to monitor by police and the public, and they were primarily located in low income, high poverty, high density, high minority population areas. Although this characterizes the average demolition, there is variation in all of these public housing specific and neighborhood characteristics, which I exploit to increase our understanding of what drives the results.

These results are a complement to the small body of existing research on public housing in the economics literature. Most other research focuses on the public housing residents, rather than on the neighborhood. Much of this research comes from the Moving to Opportunity (MTO) demonstrations conducted in the 1990s.<sup>3</sup> The results of these experiments are mixed. Although former public housing residents live in safer neighborhoods and have improved mental health, their economic self-sufficiency and physical health did not change relative to the control population ([Kling et al., 2007](#)). Violent crime arrests went down temporarily for the treated population ([Ludwig et al., 2001](#)), but property crimes went up in the long run ([Kling et al., 2005](#)). Treated youth showed small gains in academic achievement ([Sanbonmatsu et al., 2006](#)). Longer term outcomes are better for those that move out of public housing when young ([Chetty et al., 2016](#)).

More recent literature uses other randomized voucher distributions. [Jacob et al. \(2013\)](#) find death rates of youth decrease and [Jacob and Ludwig \(2012\)](#) find labor supply decreases as a result of the receipt of housing vouchers in Chicago. Using a within-family comparison empirical strategy [Fredrik et al. \(2013\)](#) find benefits for children living in subsidized housing, especially voucher-supported housing.

While the MTO research provides a great deal of insight into the

<sup>3</sup> In these experiments, researchers randomly selected public housing residents from a pool of volunteers to receive Section 8 housing vouchers that allowed them to rent housing in the private market. The researchers then followed these randomly selected residents and compared them to the sample of individuals that volunteered for the demonstration but did not receive vouchers.

behavior of public housing residents during a move to a new neighborhood, the policy experiment of a housing demolition is quite different from a small volunteer voucher program. Many more people are required to move in a demolition and the individuals moved are not volunteers. Few other papers in the literature look at the variation in public housing caused by public housing demolitions. [Jacob \(2004\)](#) uses the same policy experiment used in this paper to look at how school achievement changes for children in Chicago who are moved from a public housing complex due to a demolition. He finds only a small effect of this move on achievement. [Chyn \(2016\)](#) finds larger effects when exploring the labor market experiences of these children that were moved out of demolished public housing. [Aliprantis and Hartley \(2015\)](#) look at the neighborhoods where these former residents move and find a small uptick in crime in those neighborhoods, but not enough to offset the crime decrease they find near the demolitions.

The next section discusses some of the background on public housing in general, as well as Chicago's public housing specifically. In [Section 3](#), I describe my data. The analysis is divided in three parts. [Section 4](#) establishes the existence of a local crime decrease after a public housing demolition, [Section 5](#) explores the timing of this decrease, and [Section 6](#) investigates some of the heterogeneity in the estimated results to understand the viability of several potential mechanisms for the observed decrease in crime. [Section 7](#) concludes.

## 2. Public housing background

The United States' public housing program was originally intended to provide short-term housing for individuals and families when they could not afford housing in the private market due to unemployment, poor health, or other fluctuations in income. The character of public housing changed within a few decades as housing authorities built large projects to provide a long-term housing alternative to the urban ghetto for both the working poor and families on public assistance ([Venkatesh, 2000](#)).

The nature of the nation's public housing changed yet again as funding for public housing declined and maintenance levels fell during the 1980s and 1990s. Many families moved out of public housing. Those who were left behind were the most troubled families with nowhere else to go. These individuals were rougher on the units and less likely to demand maintenance when needed, so the buildings fell further into disrepair. [National Commission On Severely Distressed Public Housing \(1992\)](#) found that 86,000 units of the nation's public housing stock were in need of major renovation or demolition as of the early 1990s<sup>4</sup>.

Partially due to the Commission's findings, Congress approved the HOPE VI program, which was intended to fund demolition and rehabilitation of the severely distressed public housing stock. During the first 10 years of the HOPE VI program the Department of Housing and Urban Development (HUD) provided \$395 million in HOPE VI demolition grants to demolish 57,000 severely distressed housing units. Chicago received a large number of these grants.

Chicago began demolishing its distressed housing in 1995 with its first HOPE VI grants, but started demolishing in earnest in 2000 after the introduction of their "Plan for Transformation". There were several reasons for this increased attention in 2000. Several high-profile murders occurred in the housing projects, which drew Chicago's

<sup>4</sup> The Commission used a wide span of indicators to evaluate whether or not a public housing complex was severely distressed. These include comparisons between the housing project and the city, including the project unemployment rate, the project high school dropout rate, and the project crime rate. They also looked at measures of management deficiencies including vacancy and turnover rates, the estimated reconstruction cost, and annual average work order backlog. These were in addition to the signs that the building was falling apart, such as lead paint chipping in more than 20% of the units, lack of heat or hot water, and leaking roof or plumbing ([National Commission on Severely Distressed Public Housing, 1992](#)).

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