



# Improving population health by reducing poverty: New York's Earned Income Tax Credit



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## ABSTRACT

Despite the established relationship between adverse health outcomes and low socioeconomic status, researchers rarely test the link between health improvements and poverty-alleviating economic policies. New research, however, links individual-level health improvements to the Earned Income Tax Credit (EITC), a broad-based income support policy. We build on these findings by examining whether the EITC has ecological, neighborhood-level health effects. We use a difference-in-difference analysis to measure child health outcomes in 90 low- and middle- income neighborhoods before and after the expansion of New York State and New York City's EITC policy between 1997–2010. Our study takes advantage of the relatively exogenous source of income variation supplied by the EITC—legislative changes to EITC policy parameters. This feature minimizes the endogeneity problem in studying the relationship between income and health. Our estimates link a 15-percentage-point increase in EITC benefit rates to a 0.45 percentage-point reduction in the low birthweight rate. We do not observe any measurable link between EITC benefits and prenatal health or asthma-related pediatric hospitalization. The magnitude of the EITC's impact on low birthweight rates suggests ecological effects, and an additional channel through which anti-poverty measures can serve as public health interventions.

## 1. Introduction

A well-established literature exists describing the relationship between low socioeconomic status and higher levels of morbidity and mortality in the United States (Chetty et al., 2016; Adler & Rehkopf, 2008; Muennig, Franks, Jia, Lubetkin & Gold, 2005; Braveman et al., 2005; Lantz, House, Lepkowski, Williams, Mero & Chen, 1998; Pappas, Queen, Hadden & Fisher, 1993).<sup>1</sup> Despite such health disparities, researchers rarely test the link between health improvements and anti-poverty policies (Bhatia, 2014; Rigby, 2013; Auspos et al., 2000; Bos, Huston, Granger, Duncan, Brock & McLoyd, 1999; Connor et al. 1999).

The EITC, one of the federal government's largest anti-poverty programs, has been a recent exception. Research has begun to link improved income resulting from EITC benefits to improved health outcomes (Baughman & Duchovny, 2016; Muennig, Mohit, Wu, Jia & Rosen, 2016; Hoynes, Miller and Simon, 2015; Evans & Garthwaite, 2014; Larrimore, 2011; Strully et al., 2010; Arno, Sohler, Viola & Schechter, 2009). This study adds a new dimension by examining the

EITC's ecological health impact. Specifically, we examine whether EITC benefits impact health outcomes across a geographic unit—the neighborhood—distinctive from the individual or household level.

The paper is organized as follows: Section 2 situates our study within the existing research. Section 3 describes our data and methodology. Section 4 presents our results and Section 5 discusses their implications. Section 6 concludes.

## 2. Related literature

### 2.1. EITC's Impact on Health

Studies that examine the link between EITC benefits and individual-level health outcomes generally find a positive relationship (Baughman & Duchovny, 2016; Hamad & Rehkopf, 2015; Hoynes, Miller and Simon 2015; Evans & Garthwaite 2014; Rehkopf et al. 2014; Strully et al. 2010).<sup>2</sup> These studies typically use policy parameter changes to identify the EITC's individual-level impact on health outcomes such as biomarkers of physical and

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<sup>1</sup> Findings on the relationship between health and income have been inconsistent in countries besides the U.S. Studies with U.K. children found positive and significant to no income effects on health (Apouey and Geoffard, 2013; Case et al. 2008; Propper et al., 2007; Currie et al. 2007).

<sup>2</sup> Bruckner et al. (2013), in contrast, finds increased EITC benefits linked to lower birthweights.

mental stress, low birthweight rates and parents' self-reported health status of children.

A key advantage to studying the relationship between the EITC and health outcomes is that legislated EITC policy parameter changes cause income to vary independently of individuals' health status. Therefore, changes in health outcomes linked to changes in policy parameters can reasonably be assumed to occur *in response* to changes in income rather than the reverse.

## 2.2. Neighborhood effects: an ecological approach

None of the studies that examine the link between EITC and health investigate the potential role of ecological effects. That is, do EITC benefits impact the context, or ecology, of a neighborhood and thereby the health outcomes of neighborhood residents generally? In this section we consider how the concentrated infusion of EITC benefits into a low-income neighborhood could improve the economic, physical and/or social environment and, consequently, health outcomes neighborhood-wide.

### 2.2.1. The role of concentrated poverty

During 2006–2010, half of the country's poor lived in what the U.S. Census Bureau defines as "Areas of Poverty"—neighborhoods with a poverty rate of at least 20%. Poor households in high poverty areas are poor *and* live in neighborhoods that "lack the infrastructure to lead a healthy life," (Macintyre & Ellaway 2003, p. 34). Conditions in high poverty areas—such as limited access to jobs, few neighborhood amenities like well-maintained parks, frequent exposure to crime—induce stress and increase health risks for all households there regardless of individual circumstances (Jacob et al., 2013; Kneebone & Berube, 2008; Leventhal & Brooks-Gunn, 2003). Thus, to the extent that improved average household income lowers the level of concentrated poverty, it should improve health neighborhood-wide.

Health also improves significantly with movement up the income ladder from low to average levels, with diminishing returns to health from income gains at higher incomes, i.e., the income-gradient in health outcomes is non-linear (Robert & House, 2000). Given the "double-jeopardy" of being poor in high poverty areas, the impact of income on health may be greatest among households in areas of concentrated poverty. Past studies of how the EITC affects health have not accounted for this spatial dimension of poverty.

### 2.2.2. Multiplier effects

Due to the geographic clustering of poor households, poor neighborhoods receive relatively large cash injections from the EITC program. These cash injections have greater potential impact in the context of the less prosperous local economies of low-income neighborhoods compared to middle-income neighborhoods. For example, during 2005–2007, annual EITC benefits equaled about 4% of the average annual household income level in impoverished NYC neighborhoods. This compares to 1% among middle-class neighborhoods.<sup>3</sup>

The geographic concentration of EITC benefits in poor neighborhoods can cause EITC benefits to produce what economists refer to as a "multiplier effect." The multiplier effect refers to how an injection of income can spur new local economic activity that, in the end, generates greater income than the initial injection. This occurs, for example, when EITC recipients spend their EITC dollars at neighborhood businesses. These EITC dollars then go into the paychecks of those businesses' workers who, in turn, spend their earnings at other businesses (and thus, their dollars go into the paychecks of those businesses' workers and so on), generating new rounds of increased spending. Thus, through the multiplier effect, EITC benefits can

<sup>3</sup> This is based on data from Tables 1 and 2, and assuming the average household has 3 members.

measurably improve the overall economic environment in low-income neighborhoods, not just the lives of EITC recipients.<sup>4</sup>

Multiplier effects have been estimated for Nashville, Tennessee; Baltimore, Maryland; and San Antonio, Texas: every \$1.00 increase in EITC benefits generates \$1.07, \$1.44, and \$1.58, worth of economic activity, respectively (Haskell, 2006; Jacob France Institute, 2004; Texas Perspectives, Inc., 2003).

### 2.2.3. Social networks and social capital

Research on low-income families' household budgets finds that they frequently rely on modest, reciprocal financial gifts and loans to cover their budget shortfalls.<sup>5</sup> As a result, raising the income among a subset of households in a low-income neighborhood effectively increases the everyday resources for a broader network of households. EITC benefits thus may literally spillover to recipients' wider communities.

EITC benefits may be especially likely to make such gifts and loans possible. Households generally receive EITC benefits in a lump sum—as a one-time injection of wealth. This enables families to set aside a small amount of savings for unexpected expenses (Halpern-Meekin et al. 2015; Smeeding et al., 2000). These benefits also allow families to purchase large ticket items (e.g. a used car, household appliance or vacation) or wipe out large or overdue bills.

Though not the focus of this report, these EITC-facilitated routine acts of mutual financial support in low-income communities may also protect health over the longer term. Increased mutual financial support builds social capital, defined by Kawachi, Kennedy, Lochner, & Prothrow-Stith (1997) as "...civic participation, norms of reciprocity, and trust in others, that facilitate cooperation for mutual benefit (p.1491)." This type of mutual support has a powerful protective effect on health and operates as a public good (Texas Perspectives, Inc., 2003; Kawachi et al., 1997).

## 3. Background, data and methods

### 3.1. EITC benefit schedule

The number of dependent children in one's family and one's total family earnings basically determine one's EITC benefit level. Households with no children get a maximum credit of 7.65% of earnings, whereas the maximum benefit for households with three or more children equals 45%.<sup>6</sup> Benefits initially increase with earnings at a fixed rate (the "phase-in" range) before hitting a maximum benefit level. Then, over a "plateau" range of earnings, benefit levels do not change. At earnings beyond the plateau range (the "phase-out" range), benefits decrease at a fixed rate.

For example, in tax year 2016, a single parent with three or more qualifying children could receive a maximum \$6269 federal EITC credit. The EITC credit remains at \$6269 for households with earnings between \$13,930 and \$18,190. EITC credits then fall at a rate of 21.06% of every dollar earned above \$18,190, falling to zero at \$47,955 in earnings. As a result, the largest EITC credit goes to those earning 25% below the federal poverty line.<sup>7</sup> Due to the refundable nature of the credit, even if workers have no federal income tax liability, as is true

<sup>4</sup> Spencer (2007) estimates that every additional \$1000 in EITC benefits for low-income Los Angeles neighborhoods supports three additional retail jobs.

<sup>5</sup> Halpern-Meekin, Edin, Tach, & Sykes (2015) document how EITC-eligible low-income households frequently relied on small loans or gifts from families and friends to clear small, but serious, financial impasses—e.g., \$10 for milk and bread or to cover bus fare. Similarly, Morduch et al. (2014) collected financial diaries across low- to middle-income families and found that 41% of existing loans were from families and friends.

<sup>6</sup> The 2009 American Recovery and Reinvestment Act (ARRA) temporarily added a fourth schedule for families with at least three children. This has been extended to 2017.

<sup>7</sup> A four-person family (with three children) had a poverty income threshold of \$24,300 in 2016. The phase-out range for this family type begins at \$18,190—25% below the poverty line.

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