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Housing affordability and investments in children

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ABSTRACT

This paper uses the 2004–2009 Consumer Expenditure Surveys to examine whether housing affordability affects expenditures on children in families with income at or below 200% of the poverty line. After accounting for selection using propensity score matching, estimating effects using nonlinear GLM, and performing sensitivity tests, we find that child enrichment expenditures have an inverted U-shaped relationship with housing cost burden, our measure of housing affordability. This result is similar to the concave pattern of the association between housing cost burden and measures of children's cognitive achievement in reading and math. Thus, child expenditures, particularly for enrichment, may be one mechanism by which housing affordability affects children's cognitive outcomes. The inflection point for enrichment spending occurs at roughly the 30% housing cost-to-income ratio, the longstanding rule-of-thumb for defining housing affordability.

1. Introduction

It is well established that affordability is the main housing problem facing lower-income households and a key rationale for housing policy (e.g., Quigley 2008; Steffen et al., 2011). Deciding what people can afford has been based largely on normative judgment.[1] In the 1920s, banks adopted "a week's wages for a month's rent" rule-of-thumb, equivalent to a 25% housing cost to income ratio (Feins and Lane, 1981). This relative standard was subsequently adopted by each of the successive agencies vested with responsibility for US housing policy for moderate and lower-income households: the Housing and Home Finance Agency in the 1940s, the Department of Housing and Urban Development in the 1960s, and the Federal Housing Administration in the 1970s.[2]

Given this heuristic approach to defining affordability, it is not surprising that the cost burden measure has been debated virtually since its inception. Critics question the reliance on a relative standard, the ratio value designated as "affordable," and the lack of attention to differences in housing quality (e.g., Belsky et al., 2005; Bogdon and Can, 1997; Goodman, 2001; Hulchanski, 1995; Stone, 2006).[3] Nonetheless, the fraction of household income devoted to housing costs, or housing cost burden, remains the standard for defining housing affordability by both government and the private sector. The ratio was increased from 25% to 30% in the early 1980s and has remained there ever since.

Despite the central importance of the housing cost burden measure and of housing affordability more generally to housing policy, research has not examined the effects of affordable housing on residents. The broad policy question is whether affordable housing is welfare improving by moving housing consumption closer to the socially optimal level, given that housing creates externalities and is considered a merit good.

In this paper, we begin to address this question by focusing on the narrower topic of the role of affordable housing in the healthy development of lower-income

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[1] See Pelletiere (2008) for a succinct history of the housing cost burden standard.

[2] Although the FHA was created in 1934, it did not adopt the housing cost burden approach until 1972. (See Feins and Lane (1981) for a discussion of FHA's underwriting practices prior to 1972.)

[3] Concern about the lack of attention to housing standards arises because poor families may achieve a low housing cost burden by living in low-quality units in distressed neighborhoods.

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children. We examine one plausible mechanism through which affordability may convey its effects on children's outcomes by exploring whether housing affordability leads to larger expenditures on children, and particularly child enrichment expenditures. At first glance, it might appear that providing low-income families with affordable housing would solve the problem of material deprivation, which can have deleterious consequences for a child's healthy development including cognitive, social and emotional outcomes (e.g., Gershoff et al., 2007). But this would only be true if parents spend at least some portion of their greater disposable income on the child's needs and enrichment. At present, we do not know if this, in fact, occurs. We use the Consumer Expenditure Surveys (CE) to examine this pathway.

The next section reviews the literature. We then discuss how we measure affordability, and review the data, methods, and results. We summarize the results and explore their implications in the final section.

1.1. Literature review

This research is informed primarily by two bodies of literature: the literature on the role of income in child development, and the literature on the role of affordable housing in child well-being. In both sets of studies, the question of interest for the current paper is whether low income and material hardship (which could be caused by unaffordable housing) have deleterious effects on children's well-being.

1.2. Income and child development

Affordable housing acts as an income supplement, freeing up cash income that can be spent as desired. The most applicable framework in economics is the economic theory of family resources and child development (e.g., Becker, 1991; Foster, 2002). Like other economic actors, families face resource allocation decisions subject to budget constraints, and are assumed to choose the array of expenditures that maximizes their "utility" or satisfaction. According to this economic model, decisions about how much to spend on children depend, in part, on how much parents value their children compared with competing targets for family resources. Because the benefits to be derived from investments in children will not occur until some point in the future, parents who are future-oriented are expected to spend more on their children and less on current consumption for themselves (Foster, 2002).

The parent investment or material hardship model proposed by the child development field complements the economic model. The parent investment model states that income allows parents to purchase goods, services and experiences that benefit child development (Smith et al., 1997; Yeung et al., 2002). These expenditures include child care, learning materials, enriching activities, and health and dental care. Children in low-income families are assumed to fare worse because they are less likely to benefit from these expenditures and investments by their parents. Because housing affordability directly affects disposable income, parents in unaffordable housing have less to spend on their children, with potentially adverse consequences for those at the low end of the income distribution.

Consistent with the heterogeneity of preferences and future orientation of families, empirical tests of the economic theory of family resources and child development reveal considerable variation in expenditures on children even among families with similar incomes (e.g., Foster, 2002; Lino, 2008; Omori, 2010). Thus, similarly budget-constrained families make different choices about how to spend their limited funds. This insight has also been reported in considerable detail by scholars from other disciplines and methodological traditions, most prominently sociologists using qualitative and mixed-methods approaches (e.g., Edin and Lein, 1997; Mistry and Lowe, 2006; Mistry et al., 2008).

Several tests of the parent investment model find that material resources are more beneficial for cognitive outcomes than for behavior and emotional outcomes (Linver et al., 2002; Yeung et al., 2002). The effects of income appear to be nonlinear, being more important for poor children than the near-poor or non-poor (e.g., Dearing et al., 2001). Mayer (1997), however, reports very small effect sizes for income, leading her to conclude that the role of family income is mostly spurious. But Mayer's analysis excludes early childhood, which evidence increasingly suggests is a critical developmental period (e.g., Cunha and Heckman, 2007; Duncan et al., forthcoming).

1.3. Affordable housing and child development

Only one study we are aware of attempts to examine the causal effects of housing affordability on child outcomes (Newman and Holupka, 2013). This paper tests three hypotheses about the role of housing affordability in child well-being among lower-income families: that devoting too great a share of income to housing has deleterious effects on children; that spending too little on housing jeopardizes child well-being; or that unaffordable housing has positive effects on children because house prices capitalize such beneficial community features as school quality and low crime rates. Child outcomes include cognitive achievement, behavior, and health. The analysis relies on data from the Panel Study of Income Dynamics and its 1997 and 2002 Child Development Supplements, applies two quasi-experimental analytic approaches – propensity score matching and instrumental variable modeling – to address endogeneity and to support causal inference, and tests the sensitivity of results to omitted variable bias. Results reveal an inverted U-shaped relationship between the fraction of income devoted to housing and cognitive achievement,[4] with the best performance in the middle of the housing cost burden distribution and the worst performance at both high and low levels of affordability. The inflection point of approximately 30% supports the longstanding rule-of-thumb definition of affordable housing. There is no evidence that housing affordability affects behavior problems or health, however.

[4] Cognitive achievement is measured by tests of reading and math ability from the Woodcock-Johnson Revised Tests of Achievement (Woodcock and Johnson 1990).