

A Rising Tide Lifts All Homes? Housing Quality Improvements for Safety Net Recipients Since the 1980s

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Abstract

This study analyzes patterns of housing consumption and expenditures among social safety net recipients since 1985. For safety net recipients, including Supplemental Security Income (SSI), Supplemental Nutrition Assistance Program (SNAP) and cash welfare (AFDC/TANF), monthly housing expenditures have risen from \$692 to \$1,341. However, these increased expenditures partially reflect housing quantity improvements, including more square footage, more rooms, and larger lot sizes. The data also show a marked improvement in housing quality, such as fewer sagging roofs, broken appliances, rodents, and peeling paint. The housing quality for social safety net recipients improved across 35 indicators. These quality improvements equate to a 35 to 44 percent increase in housing consumption and suggest that a typical safety net recipient in 2021 experiences housing consumption equivalent to the average national household in 1985. Though relative housing consumption has remained similar for safety net recipients, this “rising tide” of housing quality may have additional benefits for the health and well-being of families and children living in better housing.

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1 Introduction

The study of inequality has multiple dimensions, including changes in the distribution of income, wealth, consumption, and time use (Fisher et al., 2022; Han et al., 2020). For policymakers, a driving concern is often reducing relative material hardships, including food, health care and housing problems—issues that are most directly related to consumption inequality (Meyer and Sullivan, 2023; Armstrong et al., 2022; Haveman et al., 2015). An important question for policy is the extent to which public social safety net programs have addressed consumption inequality, especially over longer periods of time.

In the United States numerous programs aim to reduce material hardship for low-income families. The largest safety net programs include Supplemental Security Income (SSI), which provides cash income low-income elderly or disabled persons, the Supplemental Nutrition Assistance Program (SNAP), which subsidizes food consumption for most low-income households, and the Temporary Assistance for Needy Families (TANF) program, which provides income support for low-income families with children. Over the past four decades, social safety net assistance has increasingly tied benefits to work activity. For example, benefit levels have remained flat, or even declining in the case of TANF, with increasing restrictions on eligibility (Ziliak, 2007; Hembre, 2020). While some research has found improving living standards for lower-income households in recent decades (Meyer and Sullivan, 2023; Han et al., 2020; Haveman et al., 2015; Meyer and Sullivan, 2008), other work has found evidence of greater hardship and worsening material well-being (Shaefer and Edin, 2013; Drew, 2015; Iceland et al., 2021). Often absent from this debate is a detailed evaluation of the consumption that safety net recipients spend half their income on: housing. Meyer and Sullivan (2023) uses housing expenditures as a proxy for housing consumption, and other studies use broad measures such as homeownership or bedrooms per person, which offer only a coarse measure of housing conditions (Rodems and Shaefer, 2020; Ziliak, 2021). This study investigates

how housing consumption—using detailed measures of both quality and quantity—changed between 1985 and 2021 for social safety net recipients.

Housing is a necessity and, as the largest household expenditure, an important, if not *the* most important, determinant of household well-being (Currie, 2009; Leventhal and Newman, 2010). Historically, housing conditions have proven to be one of the most important indicators of the health and well-being of low-income families (Thomson et al., 2009). Improved housing conditions can benefit the health and human capital of children, adults and seniors (Jacobs et al., 2009; Meltzer, 2016; Gibson et al., 2011; Lopoo and London, 2016; Goux and Maurin, 2005), but high housing expenses are also associated with hardships including food insufficiency and housing instability (Shamsuddin and Campbell, 2022; Beverly, 2001; Kirkpatrick, 2011; Desmond, 2015).

Housing expenditures have grown considerably in recent years as housing prices have outpaced inflation and income growth. House price increases mean that households have to allocate more of their budget to pay for housing, but does this increased expenditure also provide higher living standards? Increased housing expenditures could reflect improvements in consumption relative to prior generations. The alternative is that households have to pay more to live in worse quality and more cramped homes. In this case, perhaps due to stagnant wages and restrictions on housing supply, each generation of households pays relatively more but does not experience improvements in their level of their consumption.

In recent years, research on household consumption has proliferated, in part because of greater access to retail scanner and administrative microdata, although these data are typically better indicators of expenditures than consumption, especially controlling for the relative quality of goods and services (Landais and Spinnewijn, 2020). Quantifying and evaluating housing consumption is difficult due to the diverse bundle of goods and services housing provides. Home values and rental prices differ greatly depending on basic characteristics such as the number of bedrooms and bathrooms, square footage,

lot size, and location. However, houses also vary across dozens of additional detailed characteristics including exterior and interior building materials, appliances, flooring, foundations, electrical and plumbing characteristics, windows, and insulation among a myriad of other features. These quality characteristics contribute to housing price variation yet are rarely incorporated into analyses of living standards. For example, cheaper or less durable materials may result in higher maintenance or energy costs, reducing the value of housing services (Wilhelmsson, 2008). Though typically not measured or observed in survey data, these housing quality components also could have implications for the material well-being of low-income families. The presence of asbestos insulation or lead paint, for example, can have negative health consequences and greatly reduce the consumption value of housing (Billings and Schnepel, 2017).

This study uses the American Housing Survey (AHS) to investigate trends in housing quality, quantity, and expenditures among social safety net recipients from 1985 through 2021. Importantly, the AHS provides a wide range of consistently measured housing quality characteristics along with detailed housing quantity and expenditure data. Building on Eggers and Moumen (2013), we utilize 35 measures of poor housing quality and 11 measures of housing quantity to assess housing consumption trends. To translate these quality and quantity changes into their consumption value, we estimate a hedonic pricing model based on the 1985 housing market and then use changes in our observable quantity and quality measures to project housing consumption changes each survey year.

We find that the absolute level of housing quality for safety net households has improved substantially since 1985. The general rising tide of housing quality has lifted the quality of housing among the poorest households. The average SSI recipient in 2021 consumes housing that is equivalent to the 56th percentile in the 1985 housing quality distribution—an improvement of 33 percentiles from the average 1985 SSI recipient. Rates of poor quality housing declined from 33 percent of transfer recipient households

to 12 percent between 1985 and 2021. Conversely, rates of good quality housing (meaning the absence of any poor quality indicators) have increased from 1 percent in 1985 to 11 percent in 2021. These quality improvements are observed broadly and consistently across our measures: every one of our 35 poor quality measures declined since 1985, on average by 55 percent.

Housing quantity has also significantly improved since 1985 for social safety net recipients, though not by as much as housing quality. Across each of 11 dimensions, housing quantity has increased for the typical social safety net recipient. The average square footage per person increased by nine percent from 1985 to 2021 while total rooms per person increased by 0.29. Rates of more detailed housing quantity features, such as having a garage, porch or deck, or a fireplace have nearly doubled among transfer recipients during this time.

Using our hedonic house pricing model, we find that these quality and quantity improvements translate to a 45 percent increase in housing consumption among transfer program recipients by 2021, with roughly an equal share of this gain attributed to the quality and quantity variables. Though this gain is less than the doubling of monthly housing expenditures, it does mark a substantial increase in material well-being, as measured by housing conditions among program recipients.

These findings are consistent with prior studies showing that housing quality has improved over time (Holupka, 2011; Newman, 2014; Meyer and Sullivan, 2008), alongside housing expenditures increases (Reichenberger, 2012). This study offers new evidence on housing expenditures and consumption for an important focal population of economically vulnerable households.

The housing conditions of social safety net participants are of particular interest for several reasons. One reason is that in setting benefit levels for these programs, policymakers directly influence the available living standards for recipients. Understanding the experiences of program participants, along with any changes over time, can help

policymakers assess the adequacy of benefit levels. Second, while considerable research has documented trends in increasing income and consumption inequality over time (Saez and Zucman, 2020; Blundell et al., 2018; Saez and Zucman, 2016; Attanasio and Pistaferri, 2016; Piketty and Saez, 2003), relatively less work has focused on improvements to absolute living standards. Because of the substantial role of housing for these households' budgets, combined with rising housing costs, policymakers may be particularly worried that living standards among safety net recipients could be declining over time in absolute terms. Greater spending on housing could lead to reduced expenditures on other necessities such as food or healthcare. However, without capturing housing quality improvements, conventional inflation-based housing price index measures may understate changes in well-being over time.

2 Safety Net Programs Studied

We next provide a brief overview of the transfer programs SSI, SNAP, and TANF over the 1985-2021 period. While there have been numerous changes to these programs over the past several decades, none of these primary social safety net programs have increased benefit levels above inflation during this time. This overview draws from more comprehensive discussions of each program in book chapters Duggan et al. (2015), Ziliak (2015), and Hoynes and Schanzenbach (2015) for SSI, TANF, and SNAP.

2.1 SSI

The federal SSI program began in 1974 targeted to children with disabilities, adults with disabilities, and very low-income people age 65 and older. To qualify, all SSI participants must satisfy a common set of income and asset requirements. An SSI participant cannot have more than \$2,000 in financial assets (excluding home equity and a vehicle). Adults with disabilities must be determined to not be able to participate in substantial gainful work activity defined as earning \$1,310 per month in 2021. A child

must have a physical or mental impairment that results in marked and severe functional limitations and is expected to last for at least one year to qualify for SSA.

In 2021, SSI participants received a maximum monthly benefit of \$794 which is adjusted for inflation each year. SSI participants are automatically eligible for the Supplemental Nutrition Assistance Program (SNAP), housing assistance, and Medicaid (in most states), but they are ineligible to receive Temporary Assistance for Needy Families (TANF) benefits.¹ SSI benefits are reduced by \$0.50 for each \$1 of earned income and by \$1 for each \$1 of unearned income, including Social Security Old Age and Survivors Insurance (OASI) and Social Security Disability Insurance (SSDI). SSI benefits are indexed to inflation, specifically to the CPI-W, but otherwise have remained constant since program inception.

2.2 TANF

The TANF program provides monthly cash benefits primarily to low-income single adults with children.² TANF traces its roots back to the Mothers Pension programs of the late 1800s and early 1900s, but was immediately preceded by the Aid to Families with Dependent Children (AFDC). TANF was created in the 1996 Personal Responsibility and Work Opportunity Reconciliation Act with major program changes from AFDC including time limits for benefit receipt, work requirement, and block grant funding which allowed for greater state discretion on program spending, eligibility, and administration.

The replacement of AFDC with TANF led to a large reduction in caseloads and benefit levels over time. In 1985, there were 3.7 million AFDC caseloads and by 2021 there were only 800,000 TANF caseloads. TANF benefits and eligibility vary considerably across states and time. In 1985, the average 3-person AFDC maximum benefit was \$814

¹While SSI recipients are ineligible for TANF, other members of their household may still be eligible to receive TANF benefits.

²This paper focus on the cash assistance portion of TANF, which is what is measured in our data. TANF funds also support a variety of other state level programs including subsidized childcare and state earned income tax credit programs.

(in 2020 dollars) but by 2020 the average 3-person TANF maximum benefit was only \$485. Generally speaking, TANF targets very-low-income households and imposes high benefit reduction rates. Only nine percent of TANF cases currently report positive earned income.

2.3 SNAP

Beginning as a pilot program in 1961 and fully expanded nationwide by 1975, SNAP (formerly known as the Food Stamp Program) provides monthly food subsidies to low-income households. SNAP is a broadly-available means-tested transfer program that is open to most all households meeting the income and asset eligibility requirements, although benefits are time-limited for able-bodied adults without dependents. As of 2019, SNAP had 35.7 million recipients who received an average of \$130 per month in benefits. Households may qualify for SNAP categorically through SSI or TANF participation, but otherwise must earn below 130 percent of the federal poverty line.³

SNAP benefits vary by household size and income. In 2020, a 3-person household could receive up to \$509 per month in benefits. After an initial income disregard, SNAP benefits are reduced by \$0.30 for each \$1 in net income with a minimum SNAP benefit of \$16 per month in 2020. Maximum SNAP allotments are adjusted for food price inflation each year based on the cost of the Thrifty Food Plan with two notable exceptions. During the Great Recession, the American Recovery and Reinvestment Act of 2009 raised SNAP benefits by 13.6 percent through October 2013. During the COVID-19 pandemic, all SNAP recipients received the maximum benefit level for their household through an emergency allotment.

³States can apply for federal waivers regarding eligibility, including asset limits and work requirements(Center on Budget and Policy Priorities, 2023)

3 Data and Methodology

To understand the housing experiences of transfer program recipients we utilize the national sample of the American Housing Survey (AHS) from 1985 to 2021. The national AHS is a biennial panel survey begun in 1973 of approximately 60,000 housing units (as opposed to households) collecting detailed data on the physical condition of homes and neighborhoods, the costs of financing and maintaining homes, and resident characteristics.⁴

The AHS provides two important advantages for tracking historical housing consumption. The first is that the AHS includes a comprehensive set of housing quantity and quality questions (Newman and Garboden, 2013). In addition to the more commonly fielded survey questions such as total number rooms and bathrooms, the AHS includes detailed housing characteristics across a wide range of housing dimensions such as square footage, lot size, roof condition, presence of cracks in the walls or floors, plumbing and electrical issues, and whether the toilet(s) or other appliances are working, and a self-reported rating of neighborhood quality.

The second advantage of these data is the historical availability: the AHS is one of a limited number of nationally representative surveys have been fielded continuously over the past 40 years. While variable availability and definitions change sometimes between surveys, including an important redesign in 1997 and a re-sampling and redesign in 2015, the AHS has remained relatively consistent since 1985, allowing us to create a consistent housing quality index across survey waves.

To analyze housing trends among social safety net recipients, we categorize households into four mutually exclusive groups: those reporting SSI income (label: SSI), those not reporting SSI income but reporting AFDC/TANF income (label: TANF), those reporting SNAP benefits but not SSI or TANF income (label: SNAP), and those not

⁴Many housing quality variables were limited prior to 1985, so we focus on the 1985 to present period.

receiving benefits from any of these programs (label: Non-SNAP).⁵

In addition to housing quantity and quality variables, the AHS provides information on housing expenditures, home values, subsidized housing receipt, and household income. To compare housing expenditures over time we adjust all dollar values to 2021 values using the Personal Consumption Expenditure (PCE) price index. To analyze housing expenditures, we measure monthly total housing expenditures, rates of being cost burdened and severely cost burdened (defined by the Department of Housing and Urban Development as living with housing costs above 30 percent and 50 percent of income).⁶

To measure housing consumption changes for transfer program recipients we separately analyze housing quality and quantity variables. For measures of housing quantity we consider square footage, the number of total rooms, lot size (for single-family units), bedrooms, bathrooms, dining rooms, presence of a garage and porch, basement, and a fireplace. We adjust for household size in housing quantity variables using a scaling factor of $\frac{1}{(adults+0.7*children)^{0.7}}$ to adjust for economics of scale in housing consumption.

3.1 Poor Housing Quality

While housing quality is often difficult to observe, the AHS contains a rich set of housing quality characteristics, covering exterior features, interior features, appliances, plumbing/electrical, structural features, and neighborhood characteristics. The AHS also includes a summary measure of adequacy of housing quality (ZADEQ), but as

⁵Between the years 1991 and 2003 the AHS does not separately ask about SSI income receipt, but instead asks a combined question about receipt of “welfare or public assistance,” which includes both SSI and AFDC/TANF income. We thus assign households reporting welfare or public assistance income in the AHS to SSI or TANF status using the Current Population Survey Annual Social and Economic Supplement (CPS). The CPS is available annually throughout the entire sample period and contains many of the same economic and demographic variables as the AHS. Conditional on reporting either SSI or TANF income, we estimate a linear probability model of SSI receipt in the CPS and use these estimated coefficients to predict SSI recipient with the remainder assigned to the TANF group.

⁶Monthly housing costs include mortgage payments, contract rent, property taxes, property insurance, HOA payments, utilities, routine maintenance costs, and mobile home fees or land rent. Housing expenditures exclude any federally subsidized rental contributions.

discussed by Eggers and Moumen (2013) this measure has limited usefulness because it only includes three levels (adequate, moderately inadequate, and severely inadequate) and less than two percent of homes receive the “severely inadequate” designation. Prior research has worked to improve upon the ZADEQ quality measure. Eggers and Moumen (2013) build a poor-quality index based on a set of 42 quality measures in the AHS, assigning subjective weights to these components when aggregating to a single index.

To create a consistent index, we restrict our analysis to a set of 35 variables that are available and similarly defined throughout the 1985-2021 period. The quality variable set includes: presence of rodents, a floor hole, no plugs, no public sewer, peeling paint, fuses blown, a wall crack, no washer, no dryer, inside water leaks, outside water leaks, no dishwasher, toilet breakdown, number of fuse problems, cold house, without running water, unvented heat, no refrigerator, number of water stoppages, number of toilet breakdowns, no hot water, roof problems, heat provided by cooking stove, cracks in foundation, broken windows, sloping walls, walls missing bricks or siding, no tub, sewage broken, number of broken sewage problems, no air conditioning, no sink, poor neighborhood indicator, trash in neighborhood, bars on windows or neighbor windows. For each variable, we create an indicator variable equal to 1 if a negative quality attribute is reported and then standardize variables for aggregation. When not reported, missing values are replaced by the most recent observation in the unit. Technical details of the Poor Quality Index (PQI) we use for this analysis are in the Appendix.

To summarize poor housing quality, we report the average PQI values. The average PQI value is zero and has a standard deviation of 10. To capture poor housing quality variation across the full distribution we create two indicator variables to demarcate especially good- or poor-quality housing. The “Good Quality” indicator equals 1 if none of the 35 quality measures are equal to 1. Eighteen percent of the full sample is “Good Quality” housing. The “Poor Quality” indicator equals 1 if the weighted housing quality scale scores above the 90th percentile, a PQI value of 10.33 or greater.

To assess the housing consumption and expenditures of social safety net recipients we compare outcomes in the early part of our sample (1985–1989) to the later part of our sample (2017–2021) after adjusting for changes to demographic characteristics, such as age and marital status, that affect housing outcomes. To account for these observable characteristic differences, we regress housing outcomes on demographic characteristics and time period-by-group indicators:

$$Y_i = \beta_0 + \beta_1 X_{it} + \beta_2 LATE + \beta_3^j TYPE + \beta_4^j (LATE \times TYPE) + \epsilon_{it} \quad (1)$$

In this equation, Y_i is the outcome of interest (such as unit size, PQI, or housing expenditures), ϵ_{it} is a random error term, and X_{it} is a set of demographic variables including age, sex, marital status, number of people, number of kids, and indicators for presence of non-relatives, single-persons, and multiple families. The variable $LATE$ is a dummy variable for the later period ($t \in \{2017, 2019, 2021\}$) as opposed to the early period ($t \in \{1985, 1987, 1989\}$) and β_2 represents the change in outcome Y for non-SNAP households in the late period. The variable $TYPE$ is a three-dimensional vector equal to 1 for SSI households, 2 for SNAP households, and 3 for TANF households. β_3^j reveals the differential in outcome Y for $TYPE$ ($j \in \{1, 2, 3\}$) relative to the excluded group of non-SNAP households in the early period. The coefficients β_4^j reveal the marginal change in outcome Y for type j in the late period relative to non-SNAP households in the late period after accounting for demographic changes.

4 Results

We begin our analysis measuring housing quality changes for our means-tested transfer groups: SSI, SNAP, and TANF recipients over the years 1985-2021. We follow this with an analysis of housing quantity changes and then housing expenditure changes. Table 1 reports regression estimates from Equation (1) for outcomes including the PQI,

square footage per person, total rooms per person, housing budget share, and housing expenditures.

4.1 Housing Quality

Rates of poor quality housing among transfer program recipients have declined dramatically since 1985. As shown in the left panel of Figure 1, in 1985, 33 percent of all transfer recipients lived in poor quality housing. By 2021, only 12 percent lived in poor quality housing. As shown in Column (2) of Table 1, adjusting for changes in recipient demographics does not change this long-term decline in poor quality housing conditions.

The large reduction in poor quality housing conditions was broadly shared among transfer recipients. Table 1 shows that the reductions in PQI since 1985-1989 were within one percentage point of each other for SSI, TANF, and SNAP households. Geographically, all four census regions had poor quality rates above 33 percent in 1985 and below 20 percent in 2021, with the largest decline observed in the South (from 55 percent to 15 percent) and the smallest in the West (from 34 percent to 13 percent). Rural, urban, and suburban households have also had at least a 20 percentage point decline in poor quality housing by 2013.⁷

The large improvements in housing quality for transfer recipients are not confined to the worst quality housing but observed throughout the quality distribution. While quality improvements are similar in magnitude across the three transfer programs, we consistently observe SSI showing the largest quality improvements. Column (1) of Table 1 shows that, after adjusting for demographic changes, the average PQI has improved since 1985-1989 by 10.5, 9.5, and 10.0 units for SSI, SNAP and TANF recipients. Similarly, median PQI values in these transfer groups decreased by 10.4, 10.0, and 10.2 points, respectively. At top end of the quality distribution, rates of good quality housing rose by 12.2, 10.3, and 9.2 percentage points.

⁷Urbanicity status is only reported through 2013 in our data.

The poor quality housing improvements over this 36 year period are economically meaningful. To better understand these improvements, Figure 2 displays the 1985 national PQI distribution. The solid lines reflect the average 1985 PQI values for SSI, SNAP, and TANF recipients (at the 89th, 91st, and 92nd national percentiles). The solid black line is the 1985 national average poor quality housing, at the 58th percentile. The dotted lines then reflect the 2021 average PQI values placed in the 1985 housing quality distribution. By 2021, housing quality among transfer recipients increased by a full standard deviation for each program to the 56th, 62nd, and 66th percentiles. This shows that the home quality of current transfer recipients is similar to the average national home quality in 1985.

Improvements in poor housing quality among transfer program recipients are consistent across the 35 poor quality measures. The top panel in Figure 3 displays the changes in the occurrence of each poor quality measure from the 1985-1989 period to the 2017-2021 period by program. Marks below the dotted line indicate a reduction of the poor quality measure. Of the 105 component-by-program changes, only 1 (broken sewage for TANF recipients) increased over this three-decade stretch. On average, each measure declined by 55 percent. Poor quality measures with the largest declines include having no kitchen sink, no hot water, no private bathtub or shower, and an outside sloping or slanting wall.

Grouped by quality type, we observe the largest declines for interior and exterior poor quality measures. Measures in these groups dropped by 61 and 63 percent on average. Services and neighborhood quality variables had smaller reductions, averaging a 46 and 45 percent decreases.

These results reveal that since 1985, despite rising house prices and minimal social safety net expansions, there has been a widespread, steady, and sizeable reduction in poor quality housing among means-tested transfer program recipients.

4.2 Housing Quantity

Changing our focus to housing quantity trends for transfer program recipients, Column (3) of Table 1 and the middle panel of Figure 1 show that square footage per person has increased by 126, 54, and 29 square feet per person for SSI, SNAP and TANF recipients since 1985-1989 from a sample average of 771 square feet per person. Similarly, rooms per person have increased by 0.39, 0.24, and 0.24 from an sample average of 3.55 rooms per person. The increase in housing quantity has been fairly smooth over time and broadly parallel across groups.

The bottom panel in Figure ?? considers a more comprehensive set of 11 housing quantity variables and displays the rate of occurrence in the recent period (2017-2021) relative to the early period (1985-1989). The dotted line at a value of 1 corresponds to a measure whose value did not change during this period. All 11 components, for each of the three transfer groups, increased since 1985-1989. These improvements include, on average, a 26 percent increase in having a basement, a 19 percent increase in central heat, 32 and 10 percent more bathrooms and bedrooms, 11 percent greater lot sizes per person, and a 33 percent increase in having a porch or deck. The largest increases in rates of occurrence are for dining rooms, having a fireplace, and having a garage, all of which nearly double for each group.

Similar to poor housing quality changes, these housing quantity improvements are observed throughout the quantity distribution of transfer recipients. In contrast to the large reductions in poor housing quality, however, we observe more modest increases in housing quantity across our set of quantity measures for means-tested transfer program recipients since 1985. Square footage and rooms per person increased by about 10 percent, though other quantity measures such as having a garage, porch, or fireplace grew by more.

4.3 Hedonic Pricing Model

While the previous sections have revealed a large decline in poor quality housing combined with a modest increase in housing quantity since 1985 for means-tested transfer recipients, quantifying the value of these gains can be challenging. Housing is sold as a bundled good with all the quality and quantity measures included here plus numerous other unobserved characteristics. To quantify the value of improvements to housing consumption, we begin by estimating a hedonic house pricing model to uncover the relationship between observed home attributes and value. We then use these results to predict changes in house prices or rents based on changes in these observed characteristic. Details of this approach are provided in the Appendix.

Figure 4 displays estimates of housing consumption changes separately for home values and rental values for each of transfer program group: SSI, SNAP, and TANF. The figure also decomposes how much of these changes are attributed to quality improvements and quantity improvements. The results reveal that housing consumption has increased substantially between 1985 and 2021. Based on predicted home values, housing consumption has risen 44.5 percent on average across the three programs. Using rental values instead of home values, housing consumption has risen 35.4 percent on average across the three program groups. These consumption gains are similar across programs, though SNAP experienced the largest gain at 48 percent and TANF experienced the lowest gain at 41 percent among home values. Notably, housing quality and quantity improvements accounted for a similar share of the housing consumption increase. Quality improvements account for 56 percent and 40 percent of the total consumption increases for the rental and owner models across the three programs while quantity improvements account for 44 and 60 percent. These gains to housing consumption were fairly smooth and constant over the 36 year period. This is perhaps surprising given that none of these three programs experienced boosts to benefit levels (above inflation-adjustments). Further, we do not observe a distinct relationship between hous-

ing consumption and the business cycle or the housing boom-and-bust cycles during this time period.

4.4 Housing Expenditures

Housing is the largest component of households' budgets. For the full sample period, transfer program recipient households' housing costs \$974 per month on average —equal to 51 percent of household income. A majority (66 percent) of these households are housing-cost burdened while 42 percent are severely-housing-cost burdened, although household income for this measure does not include the cash value of in-kind transfers, such as SNAP, Medicaid, or housing assistance.

To track trends in housing expenditures, the right panel in Figure 1 displays average housing expenditures over time for SSI, SNAP, and TANF recipients. Housing expenses increased substantially for these groups over the study period. Average housing expenditures for means-tested transfer recipients increased from \$692 in 1985 to \$1,341 in 2021 (in real terms). This near doubling of housing expenditures is partially explained by increased income among the means-tested transfer program recipients. As shown in Table 1, housing budget shares have increased by 8.8 percent and 3.6 percent for SSI and SNAP recipients and declined by 2.7 percent for TANF recipients. However, rates of extreme housing burden (housing costs at 50 percent or more of income) has increased by 8.4 percentage points for SSI recipients, but decreased by 3.3 and 11.3 percentage points for SNAP and TANF households.

Increased housing expenditures among transfer recipients can be attributed to a variety of factors. Among transfer recipients, average renter housing expenditures are less than half of homeowners expenditures; since 1985 the homeownership rate in our sample increased from 30.6 to 38.8 percent. Restricted only to renters, average monthly housing expenditures increased by only 60 percent. Changes to subsidized housing does not account for these long-run expenditure trends. While private market renting transfer

recipients pay about 40 percent more in rent than subsidized recipients, rates of housing assistance remained constant within this group since 1985. Income among transfer recipients has also increased over this period, leading to greater housing expenditures. Though benefits for these three programs have only either been indexed for inflation or flat, variation in inflation adjustment measures account for some of this difference. To compare consumption over time we deflate expenditures across time using the personal consumption expenditure (PCE) index, however growth in the SSI federal benefit rate, which is indexed to the consumer price index for urban wage earners (CPI-UX), was roughly 11 percent higher between 1985 and 2021.

5 Discussion

Based on the AHS data from 1985 to 2021, both housing quantity and quality have risen substantially among people receiving safety net supports. Nearly all 35 poor housing quality indicators improved for people in all three of the safety net groups we studied over this time period. These quality improvements are widespread across the housing quality distribution. At the lowest end of the distribution we observed a regression-adjusted 22.2 percentage point reduction in poor quality housing. At the highest end we observed an 11 percentage point increase in homes displaying no poor-quality indicators, while on average the regression-adjusted PQI score decreased by 10.0 points –a full standard deviation improvement. Housing quantity improvements were similarly broad though gains were smaller in magnitude. For instance, square footage per person increased by about ten percent and rooms per person increased by about 0.25.

On average, program recipients spend 50 percent of their income on housing. Monthly housing expenditures rose 93 percent (in real terms) from \$694 to \$1,342 over the study period, though the increase in housing expenditures as a share of the total budget is much smaller. Using a hedonic model to price a range of housing charac-

teristics, we find that average housing consumption for means-tested transfer program recipients increased by between 35 and 44 percent, reflecting a sizeable increase in material well-being for these households. The absolute size of housing consumption gains suggest that the average transfer recipient in 2021 lives in a home of similar quality to that of the national average household in 1985.

Though housing is only one component of means-tested transfer recipients' material well-being, it is the largest and perhaps the most important consumption good. In conjunction with the decreasing prices of other household necessities such as clothing and other consumer goods since 1985, the findings presented here show that housing consumption of means-tested transfer program recipients increased substantially over the same period. This suggests a general improvement in the living standards of these households, however additional research disentangling the causes of this housing consumption increase, such as local housing regulations, consumer preference changes, or relative price changes would help bolster the implication here of a general living standard increase over time for these households.

Policymakers may find these results encouraging, but it is important to view changes in housing consumption carefully. If greater housing quality comes at the expense of non-housing hardships then the welfare enhancing aspects of better housing may be undermined. Since a portion of low-income people own their homes, there is the potential that mortgages, taxes, and other costs could place more low-income households at greater financial risk (Dynan, 2009). Indeed, prior studies show rising use of SNAP food benefits among people receiving SSI, for example (Schmidt et al., 2016; Trenkamp and Wiseman, 2007). If greater housing quality comes at the expense of hardships like food insecurity, the welfare enhancing aspects of better housing may be undermined. Further studies are needed to evaluate if the positive externalities of improved housing conditions are a net positive for social welfare.

It is important to note that while this study finds improvements in the absolute

housing quality level, the relative housing quality for social safety net recipients remained similar over time. For policymakers, a key question becomes the value of more equality in housing conditions, rather than improvements in more severe measures of housing conditions. If the policy objective is to offset the added costs of housing related to improvements in housing conditions, programs such as SSI, SNAP and TANF could be better coordinated with housing subsidies to better protect poor households from rising costs.

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Table 1: Regressions of Housing Outcomes for Safety Net Recipients

	(1)	(2)	(3)	(4)	(5)	(6)
	PQI	Poor Quality	Square Feet	Rooms	Housing Budget Share	Housing Expenditures
Late	-4.821*** (0.053)	-0.086*** (0.001)	126.637*** (7.218)	0.309*** (0.007)	5.471*** (0.133)	899.734*** (11.608)
SSI	9.544*** (0.415)	0.219*** (0.009)	-351.434*** (21.981)	-0.662*** (0.024)	9.779*** (0.559)	-456.368*** (17.816)
SNAP	9.052*** (0.387)	0.223*** (0.010)	-270.025*** (16.478)	-0.494*** (0.019)	15.729*** (0.636)	-674.108*** (16.165)
TANF	10.127*** (0.418)	0.243*** (0.010)	-152.125*** (15.358)	-0.333*** (0.017)	21.412*** (0.624)	-621.793*** (17.250)
Late x SSI	-5.792*** (0.438)	-0.139*** (0.011)	-0.655 (24.883)	0.085*** (0.029)	3.468*** (0.729)	-265.152*** (29.815)
Late x SNAP	-4.697*** (0.412)	-0.137*** (0.011)	-72.785*** (18.842)	-0.071*** (0.024)	-2.810*** (0.753)	-297.047*** (25.030)
Late x TANF	-5.231*** (0.510)	-0.133*** (0.015)	-97.290*** (20.019)	-0.069*** (0.027)	-8.129*** (1.045)	-430.762*** (75.856)
Y Mean	0.10	0.10	1,124.67	3.55	35.74	1,739.80
Y Standard Deviation	10.13	0.30	1,091.05	1.45	27.32	1,998.31
N	300,809	300,809	300,721	300,809	289,338	294,027

* p<0.10, ** p<0.05, *** p<0.010

Source: American Housing Survey.

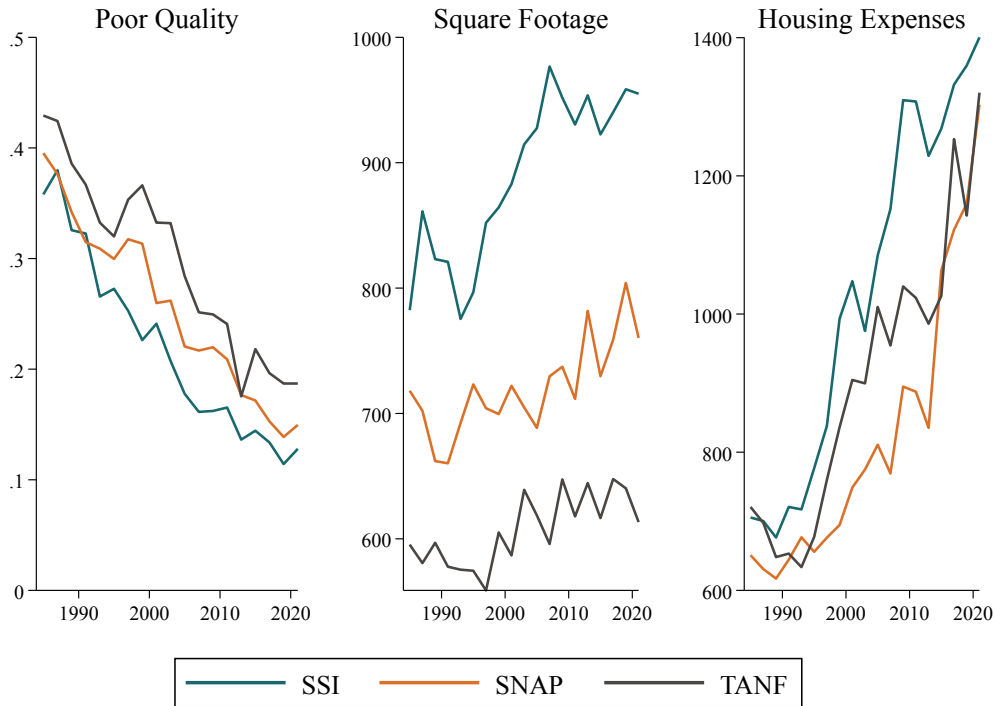
Notes: This table displays coefficients from estimating Equation (1) for differing housing outcomes in each column for the sample in years 1985-1989 and 2017-2021. The Late period is 2017-2021. The excluded group is non-transfer program households in the 1985-1989 period.

Appendix

PQI Construction

Eggers and Moumen (2013) show that the 1997 survey redesign affected the reporting of several quality variables, and similar series jumps occur with the 2015 redesign as well. An important survey change in 1997 changed interview protocols resulting in large jumps in many average housing quality variable values. Further, we observe persistent differences in several variable values based on the method of interview, phone or in-person, as interviewers may alter answers based on a visual inspection (such as the presence of rodents) that could differ from direct household responses. To account for within-variable shifts in the 1997 and 2015 re-designs along with a shifting fraction of phone to in-person interview rates, we split the sample into three periods –1985-1995, 1997-2013, 2015-2017 –and apply periodic weights to account for interview method and smooth across transition periods. We base variables to the longest period for an in-person

Figure 1: Housing Trends for SSI, SNAP, and TANF, 1985-2021



Source: American Housing Survey, 1985-2021.

Notes: This figure plots rates of Poor Quality housing, square footage per person, and monthly housing expenses between 1985 and 2021 for SSI, SNAP, and TANF recipients.

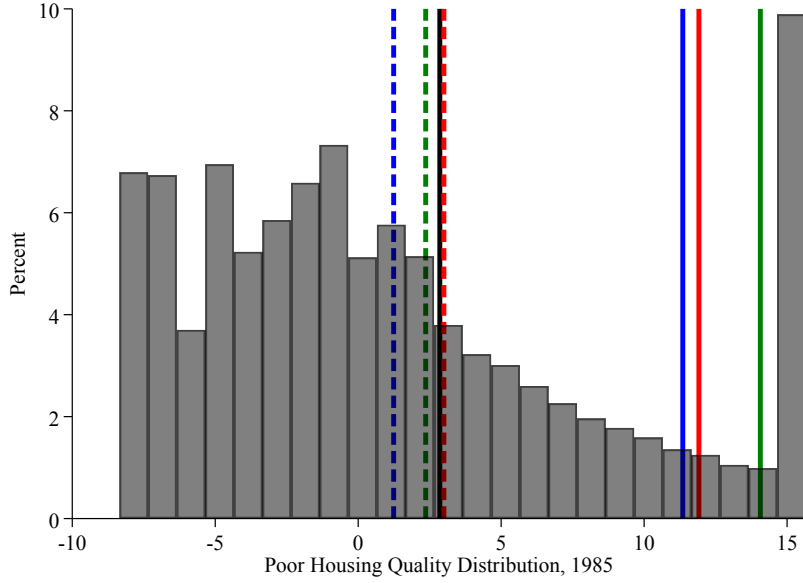
interview during 1997-2013.⁸ A drawback of these transition smoothing weights is that they eliminate any true poor-quality changes across the adjoining years of 1995-1997 and 2013-2015.⁹

To construct our poor-quality index (PQI) we first construct z-scores for each of the poor quality indicators to ensure each measure equally contributes to our index. The

⁸The means that weights for the 1985-1995 period are calculated as the 1997 variable average divided by the 1995 average. Weights for the 1997-2013 period are equal to 1. Weights for the 2015-2021 period are equal to the 2013 average divided by the 2015 average.

⁹Because this eliminates cross-year variation for 2 of our 18 survey waves, the total housing quality changes over the full 1985-2021 period would be underestimated by $\frac{1}{9}^{th}$ if changes in these years are the same magnitude as the average changes across other years.

Figure 2: Poor Housing Quality Distribution



Source: American Housing Survey.

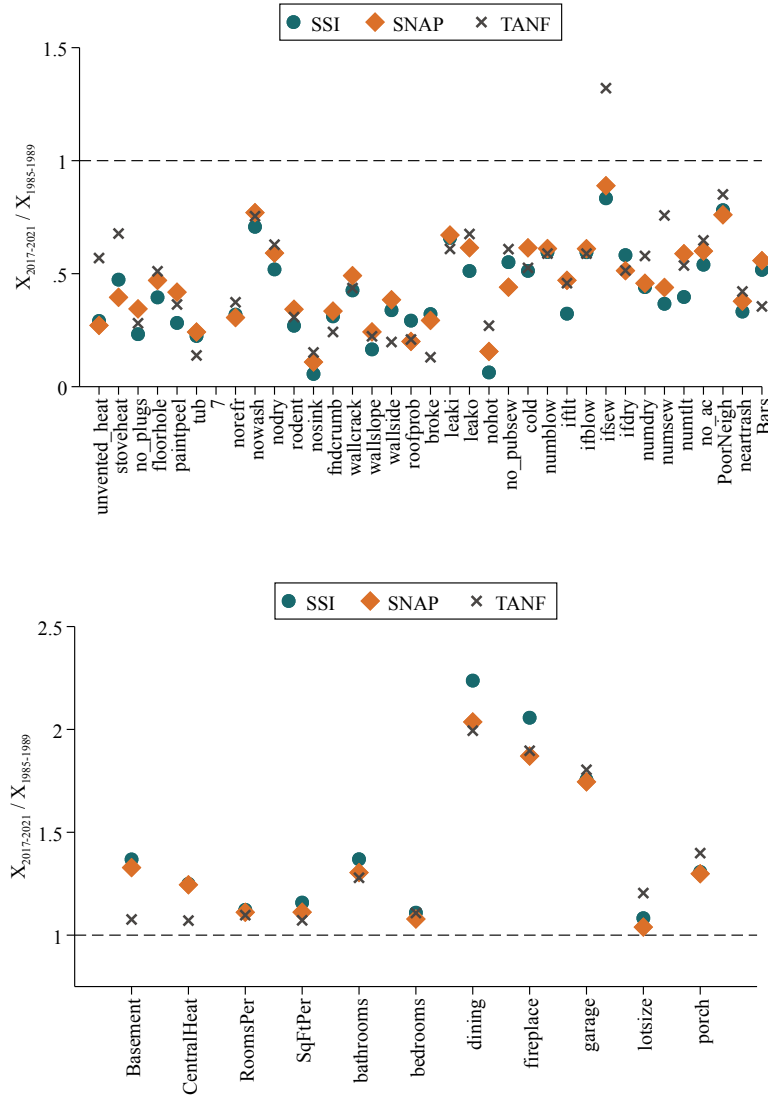
Notes: This histogram presents the poor quality housing distribution between 1985-1989 using the PQI index. Values have been top-coded at 15. The blue vertical lines represent the mean values for the full SSI sample and the red lines are mean values for the single-person SSI samples. Solid vertical lines represent the 1985-1989 average and dotted lines represent the 2017-2021 average.

PQI is then an average of our 35 adjusted poor housing quality indicators, Q_i :

$$PQI = \sum_{i=1}^{35} Q_i$$

We additionally considered several alternative index constructions such as using subjective weights suggested by Newman and Holupka (2017), using the non-adjusted indicator values, and using estimates from a logistic regression of poor quality components on the Consumer Rating Index (CRI) to determine weights. While not reported in our results, these alternative measure do not substantively alter our findings.

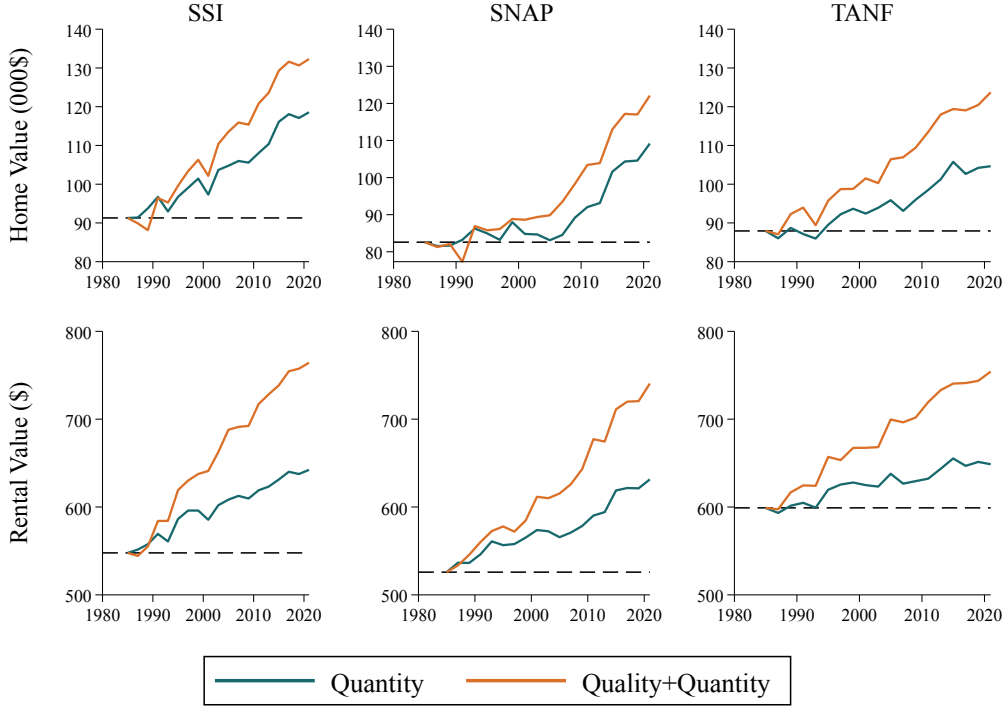
Figure 3: Housing Component Changes, 1985-1989 vs. 2017-2021



Source: American Housing Survey.

Notes: This figure displays the ratio of the average occurrence rate of 35 housing quality indicator variables (top) and 11 housing quantity variables (bottom) during the 2017-2021 period relative to the 1985-1989 period.

Figure 4: Price Decomposition: SSI, SNAP, and TANF



Source: American Housing Survey, 1985-2021.

Notes:

Appendix .1 Hedonic Pricing Model

To run our hedonic pricing model, we first estimate the following equation for the 1985 survey:

$$Y_i = \alpha_t^B + \beta_t^B Q_i + \gamma_t^B Z_i + \delta_g^B + \epsilon_i \quad (2)$$

where Y_i is either the reported market sale value or rental cost of housing unit i , Q_i is the matrix of poor housing quality variables, Z_i is the matrix of housing quantity variables, δ_g are MSA fixed effects, and ϵ is a random error term. We allow our coefficients α , β , γ , and δ to vary by building type $B \in \{\text{single-family, mobile home, low-rise apartment, high-rise apartment}\}$ to reflect variation in pricing across these home types. We exclude any subsidized or rent-controlled units from this estimation sample since their rental values do not reflect

market rents. We wish to understand how housing consumption among all households, not just among renters or owners has changed over time. To avoid confusing compositional changes over time of owners versus renters, we run separate analyses for renters and for homeowners.

We next use estimation results to predict either rental or home values for all housing units in each year: \hat{Y}_t . That is, for a given year t , we project the expected average value (\hat{Y}_t) based on the average observable characteristics \hat{Q}_t , \hat{Z}_t , and δ_{gt}^B . Comparing \hat{Y}_t to Y_{1985} reveals the rise in housing consumption in year t relative to 1985. Then, we decompose how much of this housing consumption gain is due to quality and quantity variables by holding either Q_{it} or Z_{it} constant at their 1985 values. That is, the increase in housing consumption due to quality is $Y_t(\hat{Q}_t, \hat{Z}_t) - Y_t(Q_{1985}, \hat{Z}_t)$ while the increase due to quantity is $Y_t(Q_{1985}, \hat{Z}_t) - Y_t(Q_{1985}, Z_{1985})$.

We run this analysis separately for home values and rental costs. A comparative advantage of utilizing rental values is that rents better approximate the annual flow or consumption value of housing as opposed to home values which will additionally be influenced by expected price growth and mortgage interest rates. Rental markets may also better capture the cost of poor quality on consumption value as poor quality elements may be more likely to be fixed prior to home sales and owners may have little knowledge of how to price these poor quality elements when reporting home values. In contrast, utilizing home values in our analysis has the relative advantage of doubling the sample size. This difference is particularly stark among single-family homes which comprise 60 percent of our non-subsidized sample and 84 percent owner-occupied.