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## PRESENTATION BRIEF

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# Differences in Rent Growth by Income Between 1985 and 2019 and Implications for Inflation

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*The views expressed in this presentation are those of the authors and do not necessarily reflect the views of the Federal Reserve Bank of Richmond nor the Federal Reserve System.*

This analysis examines differences in inflation across income groups related to a specific component of expenditures: housing. Housing is a large fraction of expenditures for many households, as it makes up nearly 30 percent of spending in the Consumer Price Index (CPI). Housing can cause inflation rates to differ across income groups for two reasons. One, changes in housing costs over time might vary across income groups. Two, households might vary in the share of their expenditures devoted to housing.

First, we use panel data on rents in the American Housing Survey (AHS) to calculate changes in housing costs facing households in different segments of the income distribution. Although most households in the upper half of the income distribution own their housing, we use rent data to capture changes in housing costs for all income groups. We do so because rent reflects the price of housing services—i.e., the shelter and amenities that a housing structure provides—and it is housing services that matter for an index designed to reflect changes in the prices of goods and services faced by households. Accordingly, the CPI methodology uses rent data to impute housing costs for owner-occupants.

The AHS is a nationally representative panel survey that collects data on each housing unit in the sample once every two years. We calculate two-year changes in rent for each housing unit in the sample and then group these rent changes according to the income of the household in the initial year. Figure 1 shows median rent growth for each quintile of the national income distribution.<sup>1</sup> In general, rent growth was fairly similar across the income distribution from 1985 to 2019, especially in the bottom four quintiles. On average, rent rose at an average annual rate of 2.0 percent for households in the top quintile and 1.7 percent for households in the bottom quintile.

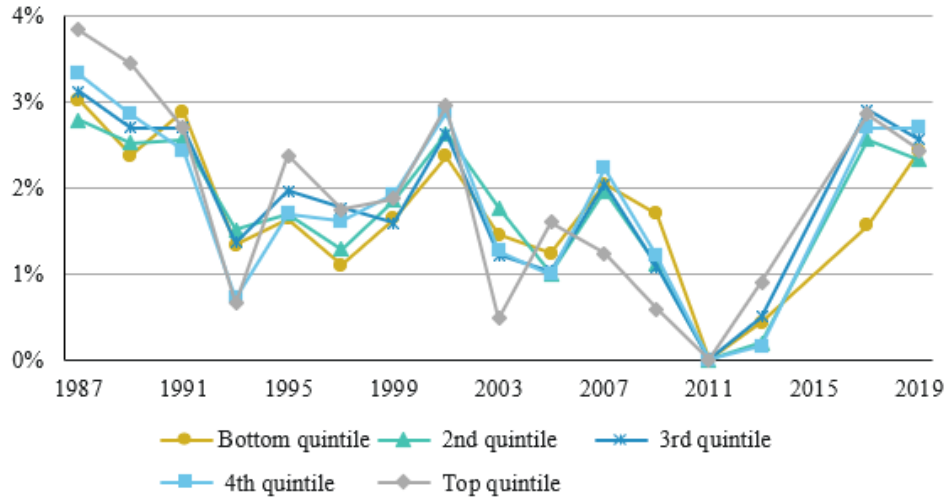
Next, we calculate housing expenditure shares for households in each income quintile. For this purpose, we use the Consumer Expenditure Survey, which is the same survey used to calculate weights for item categories in the CPI. We follow the CPI's methodology of defining housing expenditures as rent for renters and the owner's estimate of the rent for their home for owners.

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<sup>1</sup> The distribution of rent changes has a long right-hand tail, making the average a less reliable measure of the rent changes faced by most households in the group than the median.

Unsurprisingly, lower-income households spend a larger fraction of total expenditures on housing. Over time, all households have devoted a growing share of their budget to housing. Households

Figure 1: Median rent growth by income group



Source: Authors' calculations from the American Housing Survey. Because the AHS began a new panel in 2015, no housing units were observed in both years and therefore we cannot calculate rent growth between 2013 and 2015.

in the bottom quintile spent 31 percent of their expenditures on housing in 1985 and 41 percent in 2019. Households in the top quintile spent 24 percent of their expenditures on housing in 1985 and 28 percent in 2019.

Finally, we combine the estimates of rent growth and housing expenditures by income group to obtain estimates of general inflation for each group.<sup>2</sup> For this exercise, we assume that the price changes for all other goods and services are the same for each group. As shown in Figure 2, the estimates of general inflation are quite similar across groups, with estimated inflation for all five quintiles averaging 2.7 percent over this period. Although rent growth was slightly faster for higher income groups, their lower housing expenditure share roughly offsets this difference.<sup>3</sup>

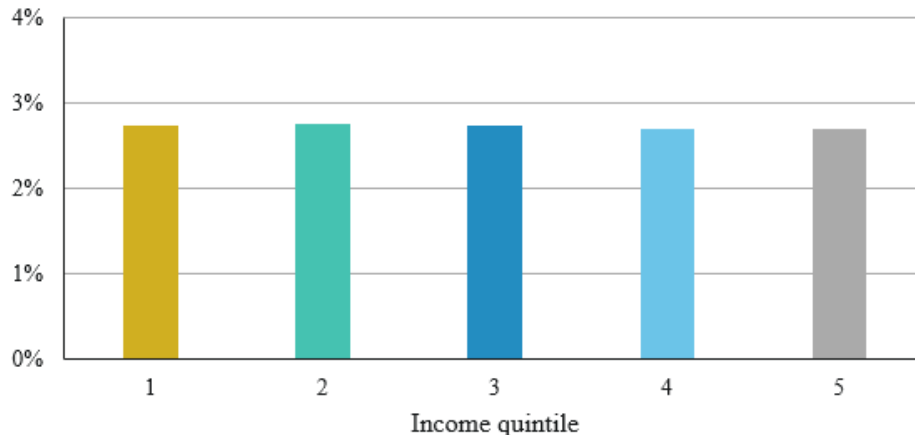
An important caveat to these estimates is that inflation for non-housing goods and services could differ by income group. Research using scanner data, which mostly reflects retail goods like food, beverages, and housekeeping supplies, has found that from the mid-2000s to mid-2010s, inflation tended to be lower for households with higher incomes than for households with lower incomes ([Jaravel 2019](#), [Kaplan and Schulhofer-Wohl 2017](#), [Argente and Lee 2020](#)). These results suggest

<sup>2</sup> In order to obtain an average inflation rate across groups that matches the aggregate CPI, we calculate an adjustment factor as the difference between the growth in the CPI for housing and median rent growth in the AHS for each two-year period. We add this adjustment factor to median rent growth for each income group.

<sup>3</sup> Since rent growth tended to be higher than price changes of other goods and services, a lower housing expenditure share reduces the estimate of general inflation.

that inflation differences across income groups could be larger if other goods and services are taken into account. That said, the scanner data used in this prior research account for only about

Figure 2: Average annual inflation by income group, 1985 to 2019



Source: Authors’ calculations from the American Housing Survey, the Consumer Expenditure Survey, and selected components of the Consumer Price Index. Income quintiles are based on the national distribution of household income.

10 percent of the household consumption basket, and rent accounts for an additional 30 percent. As a result, differing inflation rates across income groups have still not yet been explored for the goods and services accounting for more than half of household expenditures. More research on these other types of household consumption would improve our ability to assess differences in inflation across groups.

We have shown that differences in rent growth and the fraction of expenditures devoted to housing have not led to material differences in inflation across income groups over the past three decades. This result may be fairly surprising given prior research that has found substantial differences in housing costs between metropolitan areas where high-income households tend to live and areas where low-income households tend to live ([Moretti 2013](#); [Gyourko, Mayer, and Sinai 2013](#)). It turns out that these geographic differences in housing costs overstate the differences in rent inflation faced by households in different income groups. One plausible explanation could be that housing quality has increased more in areas where high-income households tend to live, leading to differences in average rent even though constant-quality rent changes have been similar. In addition, income sorting across locations will exaggerate average differences in housing costs across groups. Specifically, as lower-income households respond to rising rents by moving to less expensive locations, the average rent paid by this group will put a growing weight on lower-rent areas while the average rent paid by high-income households will put a growing weight on higher-rent areas. Thus, differences across groups in average rent paid can increase, even as rent growth holding location choice fixed does not. More research to understand why large rent differences

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across metropolitan areas have not led to large differences in rent growth across the income distribution would be fruitful.