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## PRESENTATION BRIEF

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### **Price Volatility Faced by Black and White Households**

*Munseob Lee, University of California, San Diego*

*Claudia Macaluso, Federal Reserve Bank of Richmond*

*Felipe Schwartzman, Federal Reserve Bank of Richmond*

*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.*

The Federal Reserve Act tasks the Federal Reserve with promoting “the goals of maximum employment, stable prices, and moderate long-term interest rates.” When it comes to prices, conversation often focuses on the inflation rate—how much prices are, on average, increasing from one year to the next. As the United States faces its highest inflation in 40 years, that rate is frequently in the headlines.

But there are other ways to look at price stability. Instead of calculating how much prices increase from one year to the next as a percent, we can look at how variable those price increases are. We call this “price volatility.” How often does the price of a product change, and how predictable is that change? Ultimately, households care about the price volatility not just for individual goods or services but for their whole consumption basket—all the things they buy at any of the establishments that are accessible to them. Price volatility makes it difficult for households to evaluate how much their income will be worth—in other words, how much their money will buy month to month. So, price stability is of special importance to households with lower earnings, which may rely on regular pay checks for necessary purchases.

It turns out that some goods and services experience more price volatility than others. For example, prices of basic energy products (natural gas, electricity, heating oil) are generally more volatile than prices of other goods and services. These goods are commodities, sold in very competitive markets where prices adjust every day to reflect current conditions. In contrast, prices for services such as health or education are adjusted infrequently, typically once a year, and by more predictable amounts.

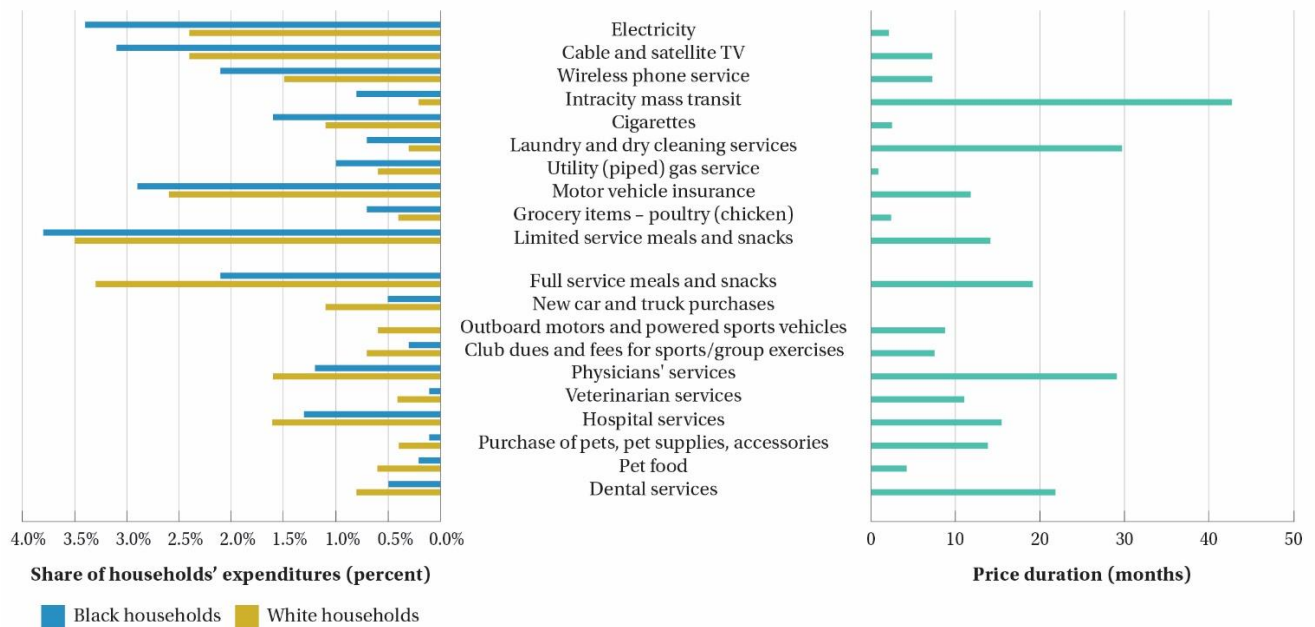
How much price volatility a household faces depends on how it spends its money—do larger shares of its expenditures go to items with more price volatility? In a recent [paper](#), we analyze the price volatility faced by Black and White households.<sup>1</sup> To do this, we combine two sources

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<sup>1</sup> We define as “Black” all Current Population Survey (CPS) respondents who identify as “African-American or Black, alone” and as “White” all CPS respondents who identify as “White alone.” Including respondents who identify as multiracial does not change our results, but we restrict our definition to single-race individuals to be consistent with other analyses.

of data. The first is the Consumer Expenditure Survey, from which we obtain expenditure shares across product categories for Black and White households. The second data source is a measure of “price duration” (how many months a price lasts without changing) for each product category, calculated by [Nakamura and Steinsson \(2008\)](#).

Figure 1: Expenditure Share Differences and Duration of Prices



Source: Expenditure shares are the authors' calculations from the Consumer Expenditure Survey. Price durations are calculated by Nakamura and Steinsson (2008).  
 Note: The selected categories represent the categories with the largest differences in expenditure shares between Black and White households. Price duration represents the number of months a price lasts without changing. Price duration for cars and trucks is estimated to be zero, meaning the price changes every month.

The data show that Black households' and White households' expenditures are concentrated in different types of purchases. The accompanying figure shows the consumption items with the largest differences in expenditure shares between Black and White households. The first 10 categories are those to which Black households devote a larger share of their expenditures than White households (notice that the blue bars which represent Black households are longer than the gold bars which represent White households). Many are necessity goods, such as electricity, wireless phone service, and car insurance. These 10 categories account for 20 percent of Black household expenditures and 15 percent of White household expenditures.

The second 10 categories in the figure (notice that the gold bars which represent White households are longer than the blue bars which represent Black households) are those to which White households devote a larger share of their expenditures than Black households. These tend to be more discretionary items, such as dental services, pet food, and full-service restaurant meals. White households devote 11 percent of their spending to these categories, while Black households devote 6 percent.

Comparing the price durations of these expenditures, we find that the median price duration of the 10 categories to which Black households devote more expenditure share than White households is 7 months, much shorter than the 12 month median duration of the next 10 categories that make up a larger proportion of White households' spending. In other words, the prices of goods to which Black households devote larger shares of their expenditures last without change for only 7 months, while the prices of goods and services to which White households devote larger shares of their expenditures stay for 12 months. Black households devote a larger share of their spending to goods and services with prices that change more often.

We can also calculate the price volatility for Black and White households by taking into account all of their purchases (their "consumption basket"), not just the ones in the figure. The mean duration for Black households' consumption basket is 8.07 months, while the mean duration for White households' consumption basket is 8.51 months.

Given the differences in consumption patterns, we can calculate the volatility of effective consumer price inflation Black and White households face. To do this, we bring in additional data on the item-level consumer price from the Bureau of Labor Statistics. After calculating effective consumer price inflation separately for Black and White households, we calculate standard deviation of it. It turns out that standard deviation of inflation is 8 percent higher for Black households than White households. The headline inflation rate misses this heterogeneity in price volatility across race, with Black households being more susceptible to uncertainty about inflation.

To conclude, we find that Black households are more exposed to inflation fluctuations than White households. The differences, while not overwhelming, are not trivial either. For example, if prices paid by White households increase by 7 percent over a year, our calculations suggest that one may expect them to increase by 7.5 percent for Black households. In our research, we examine how this informs the trade-off between inflation and unemployment stabilization for White and Black households. The result implies that when evaluating trade-offs between inflation and unemployment, one ought to keep in mind that the costs of inflation may be borne disproportionately by the more disadvantaged group.