Executive Summary

Rising inflation rates have become a significant economic phenomenon in recent years. This thesis examines inflation heterogeneity among demographic groups in the United States. The paper's main objective is to analyze the variations in inflation rates experienced by different households and demographic characteristics. The study is based on data from the Consumer Expenditure Surveys (CE) conducted by the U.S. Bureau of Labor Statistics (BLS) and focuses on the years 2004 to 2021. Additionally, this thesis analyzes the effect of COVID-19 on inflation heterogeneity in 2020 and 2021.

The analysis employs the concept of household-specific inflation rates, popularized by Hobijn and Lagakos (2005), which allows for a granular examination of inflation disparities across various demographic groups. This approach accounts for differences in consumption baskets by using the CE data to determine expenditure shares. These shares are matched with the Consumer Price Index (CPI) data for each expenditure category to calculate household-level inflation rates. The study compares two aggregate inflation measures: the plutocratic index, which considers households' expenditures, and the democratic index, which treats all households equally.

The analysis of aggregate inflation reveals disparities between the Consumer Price Index for All Urban Consumers (CPI-U), plutocratic, and democratic inflation measures. The latter consistently portrays higher inflation rates, suggesting that inflation is higher for households with lower expenditures. Over the sample period of 2004-2021, the average difference between the democratic and plutocratic indices was 0.07 percentage points. Furthermore, the CPI-U tends to be consistently higher than the plutocratic index, indicating a potential substitution bias resulting from changing consumption patterns and preferences (Hobijn & Lagakos, 2005).

Examining household-specific inflation rates provides insights into the representativeness of the CPI-U for the U.S. population. Notably, healthcare spending has increased continuously over the years, potentially due to population aging. Gasoline, tobacco, and education exhibit above-average inflation rates compared to the CPI-U. The analysis indicates that volatility in inflation rates across expenditure categories exists.

The investigation of inflation heterogeneity among different demographic groups is based on the following characteristics: income, race, age, and region.

The regression analysis, which controls for year-fixed effects, indicates significant relationships between demographic characteristics and household inflation rates. Notably, the bottom income quintile experiences higher inflation than the top quintile. White households experience the highest inflation rate among racial categories, and differences in inflation rates are also observed among age groups and regions. However, the low R-squared value suggests that other unaccounted factors play a substantial role in explaining inflation variation among households. These results align with previous studies undertaken by Michael (1975) and Kaplan and Schulhofer-Wohl (2017).

The analysis of inflation rates during the COVID-19 pandemic (2020-2021) highlights the challenges of accurately capturing changing consumption patterns. Quarterly inflation rates differ significantly from the CPI-U, particularly in the early stages of the pandemic. Lockdowns and social-distancing measures immediately affected consumer expenditure patterns, leading to a potential weighting bias in the CPI-U calculation. In 2020, the calculated annual inflation rate was 0.72 percentage points higher than the official CPI-U, and in 2021, it was 0.29 percentage points higher. As highlighted by Cavallo (2020) and Seiler (2020), these findings underline the need to incorporate alternative data sources and methodologies to produce more robust inflation measures during periods of significant economic disruption.

The study contributes to the literature by offering insights into inflation heterogeneity and its dynamics. The study acknowledges the limitations of assuming uniform prices paid for goods within expenditure categories, aggregating expenditures into broader categories, and not fully eliminating the substitution bias. Therefore, the results of this thesis potentially underestimate inflation heterogeneity.

In conclusion, this paper sheds light on inflation heterogeneity by analyzing household-specific inflation rates. The results offer valuable insights into how inflation impacts various demographic groups, emphasizing the need for further research on specific expenditure categories and policy implications.