

Research Statement

Jacob Orchard: University of California, San Diego

I decided I wanted to become an economist when I was 16; it was 2008, the recession had not only toppled Wall Street firms, but also my family's business and taken what little remained of our net worth. My research focuses on how to understand the macroeconomic forces that affected my family then, and can have heterogeneous impacts on families and individuals in the future. My preferred research method is to leverage detailed micro-level data to examine the effects of macroeconomic shocks and government policies, and then to discipline these empirical findings using rigorous macroeconomic theory and quantitative models.

In my Job Market Paper, **Cyclical Demand Shifts and Cost of Living Inequality**, I examine the heterogeneous impacts of recessions on the price indices of low- and high-income households. I argue that higher inflation rates for poor-households is a feature of recessions. I match by hand micro-expenditure categories from the Consumer Expenditure Survey (CEX) with disaggregated price series from the Consumer Price Index (CPI). I use my constructed data set to establish two novel-facts: the products that poor households buy more intensively (compared to rich households) increase in price during recessions, and the aggregate share of spending devoted to these products is counter-cyclical. I propose an original mechanism that explains these joint-facts: during recessions, households hold off on buying luxury items (e.g. boats, vacations), but continue buying necessities (such as groceries). This shift in demand along with some curvature in the production possibilities frontier implies that macroeconomic shocks that affect expenditure also affect the relative prices of necessities and luxuries. Low-income households have higher inflation during recessions since they spend a larger fraction of their budget on necessities than rich households.

Recessions are not the only macroeconomic force that can cause inflation to differ across households. In my working paper, **Household Inflation and Aggregate Inflation**, I construct household level inflation rates using the CEX and CPI along with detailed barcode level data from a large representative survey of households. I find that not only do inflation rates differ markedly across households, there is also a robust correlation between the aggregate inflation rate and the cross-sectional dispersion of household inflation rates (this correlation is independent of the unemployment rate, which is the focus of my JMP). I also investigate how a household is affected by a "household" level inflation shock and find that an inflation shock leads to a persistent increase in the household's price index; I also find that households react by reducing their nominal consumption, similar to having been hit by a wealth shock. My findings suggest that household inflation shocks make it harder for households to smooth consumption and the same types

of macroeconomic forces that increase inflation also increase the variance of household inflation shocks.

In the 2000s and 2010s, aggregate inflation has been more muted than analysis using the traditional Phillips curve would suggest. In ongoing work with Munseob Lee, **Measuring Welfare Gains from the Rise in Online Shopping**, we suggest that one reason for this fall in trend inflation is a fall in retail markups due to the emergence of online shopping. We construct Exact Price Indices (see Feenstra 1994) across cities and product groups using a scanner data-set that crucially includes both household online purchases and purchases from traditional retailers. We find a large decrease in the price index of products/cities that had higher increase in online shopping activity and this decrease comes exclusively through lower prices (rather than increased product variety). We combine our household level scanner data-set with barcode level wholesale costs and argue that the fall in prices is due to lower markups. Inflation could be higher in the coming decade as the rate of increase of online shopping slows and markups equalize.

My research also examines how governments can directly impact the business cycle. In ongoing work with Valerie Ramey and Johannes Wieland, **Micro MPCs and Macro Counterfactuals: The Case of the 2008 Rebates**, we reexamine the critically important question marginal propensities to spend (MPC) out of tax rebates. While some past studies have found that households spend up to 70 percent of their rebate, we find that MPCs of that magnitude lead to unrealistic counterfactuals at the Macro level. To create counterfactuals, we use the literature's estimates of MPCs to calibrate a medium-scale New Keynesian model and use it to calculate the implied counterfactual path of consumption and other variables had there been no tax rebates. We also replicate leading past studies that estimate the micro-level MPCs and find that some of their assumptions (such as random treatment timing) are implausible.

In future work, I will continue to examine the heterogeneous impacts of macroeconomic shocks and government policies. For example, race and macroeconomics is a vital research area that is only beginning to be explored. In past published work with Joseph Price, **County-level racial prejudice and the black-white gap in infant health outcomes**, we found a strong relationship between the level of surveyed racial prejudice in a county, and the black-white gap in premature and low-birth weight babies. In future work, I plan on continuing to understand racial disparities through the lens of macroeconomics. Specifically, I want to examine how a combination of bequests, subsistence level-consumption, and historically low-wealth levels due to slavery and Jim-Crow can lead to the persistent gap in racial wealth and income levels that we see today. Other research plans include using using detailed wage micro-data to study the link between inflation and wage dispersion.