Research Statement

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I am a Quantitative Macroeconomist whose research examines the role household and firm heterogeneity play in shaping macroeconomic outcomes. In this research, I utilize observations about micro behavior or outcomes to discipline dynamic macroeconomic models with rich heterogeneity. While my primary focus is macroeconomics, my research also contributes to the literature on Asset Pricing, the Theory of the Firm, and Incomplete Markets. Below, I summarize my recent projects and outline where I look forward to extending my research in the coming years.

In my job market paper, **Firm Investment with Shareholder Inequality**, I examine how household inequality over income and wealth jointly shape businesses' decisions about how to save for the future. With aggregate risk and uninsurable idiosyncratic household labor risk, households value payoffs differently across different future aggregate states. This presents a problem for dynamic firms. Firms want to maximize shareholder value, but shareholder value is poorly defined when shareholders disagree about the value of future payoffs. I resolve the firm's problem by modeling a mutual fund and an off-equilibrium private equity firm. These institutions jointly incentivize production firms to maximize their net market value (or their cum-dividend share price). While this model is written with a representative production sector, it can also extend to a setting with production heterogeneity. This mechanism is a significant contribution to the macrodynamic literature. Currently, there is no consensus approach for considering dynamic firms with heterogeneous households.

I use this model to examine the relationship between firm investment and household income inequality as this inequality increased from 1970 to 2010. I find that an increase in wage risk increases capital investment by firms, increases wages, and slightly lowers the volatility of consumption and output over the business cycle. These results are consistent with models where households directly own capital. In addition to these standard results, I can explain roughly 60% of the observed increase in the price-earnings ratio and 60% of the observed decrease in dividend yields.

Finally, I use the model to directly examine the role of wealth inequality by simulating an unanticipated wealth redistribution shock. I find that an unanticipated increase in wealth inequality via a transfer of shares to the rich leads to increased investment, higher capital stock, higher wages, higher output, and higher aggregate consumption. However, the strong headline numbers mask much worse outcomes for low-wealth households. The increased capital stock results in lower rates of return on savings, which makes it harder for low-wealth households to save their way out of poverty. Despite higher wages, poor households are much worse off in an environment with exogenously increased wealth inequality.

The most pressing goal for this research is to calibrate the model to match the wealth distribution more accurately. This will allow me to make more accurate claims about the role of changing income inequality over time. I also plan on utilizing the mechanism developed in this paper for other broad topics. I detail two extensions at the end of this research statement.

While the previous work focuses on shareholder heterogeneity, **Firm Size Distribution and the Increase in Markups** (with Rohan Shah) studies the role of firm productivity heterogeneity in shaping aggregate markups. There is a well-documented increase in markups observed in the United States between 1980 and 2016. However, the causes of these increased markups and corporate profits are less well understood. If markups are increasing because of collusion or other antitrust failures, the policy response would be very different than if markups are increasing because of changes to technology or changes to the composition of consumption bundles.

We write and calibrate a model to match the observed distribution of firms over productivity between 1986 and 2016. We find that the increase in productivity of the largest firms can explain roughly a third of the rise in markups observed in the data. This finding suggests that the concern about rising markups may be overstated. Policy targeting markups would likely cause inefficiencies by reducing the output of the most productive firms.

Ongoing research and future work. I am currently working on other projects related to household heterogeneity and firm behavior. I briefly detail two applications below.

I first apply my methodology to the **common ownership** literature. The theory of common ownership, primarily studied in the Industrial Organization literature, suggests that firms collude to maximize portfolio returns rather than optimizing their own returns. I investigate how this portfolio maximization motive changes aggregate investment, markup, and volatility over the business cycle. In an initial calibration, I find that common ownership increases output, aggregate consumption, and wages relative to a setting without common ownership. However, these results are from a poorly calibrated version of the model. I plan on accurately calibrating this to better understand horizontal ownership's role in macroeconomic dynamics.

Finally, I would like to extend my research to understand how different avenues of taxation can change firm and household behavior. Before this model, the literature did not have a consistent method for valuing the firm when heterogeneous shareholders own it. Therefore, existing models cannot accurately consider the implications of different tax schemes when firms make dynamic choices. For example, consider the double taxation question posed by taxing both dividend income and corporate profit. Taxing dividends or corporate profits are interchangeable when there is a representative household. But when there is a meaningful distribution of households who pay a progressive income tax on dividends, the effect of taxation may depend on who owns shares of the firm. The question becomes more complicated if capital gains are taxed differently, and the firm can utilize share buybacks to return profits to shareholders. This line of inquiry has clear policy implications and would fit nicely into my existing research strengths.