

Research Statement

Michael Carter

I am a quantitative macroeconomist who studies the role that household and firm heterogeneity play in shaping macroeconomic outcomes. I specialize in writing micro-founded heterogeneous agent models that link the observed distribution of households and firms to aggregate prices and outcomes. While I primarily approach research questions through a Macroeconomic framework, I study topics across a variety of fields, including Public Economics, Finance, and Industrial Organization.

In my job market paper, **Firm Investment with Shareholder Inequality**, I examine how income and wealth inequality jointly shape corporate investment decisions. Over the last 40 years, household income and wealth inequality have both increased significantly. Over the same period, capital relative to GDP has risen by roughly 5%, while household financial wealth relative to GDP has increased by 35%. Standard models predict that income inequality will drive capital accumulation as a form of precautionary savings, but they cannot explain the growing divergence between capital stock and financial wealth.

To address the widening gap between capital stock and financial wealth, I model households that save through a stock market and allow dynamic firms to own and operate capital. However, this presents a complex technical problem. With uninsurable aggregate and idiosyncratic risk, each household has a unique valuation of payoffs across aggregate states. This variation of valuation of future returns means that firms no longer know how to maximize shareholder value because each household values alternate capital investment plans differently.

I resolve the classic problem of shareholder disagreement by modeling a mutual fund and an off-equilibrium private equity firm. These institutions jointly ensure that production firms maximize their net market value (or cum-dividend share price). While this model is written with a representative production sector, it can also extend to a setting with production heterogeneity. The ability to model heterogeneity among both households and firms significantly contributes to the quantitative macroeconomic literature.

I use my model and data about household inequality to study the importance of income inequality in determining aggregate outcomes. I find that the observed increase in wage inequality from 1970 to 2010 generates increased capital investment, higher wages, and lower volatility of consumption and output over the business cycle. I also explain the disproportionate increase in wealth relative to GDP. In the model, the wealth-to-GDP ratio increases by 40% (35% in the data), while the capital to output ratio only increases by 20% (5% in the data). The model also matches observed changes to financial moments. I can explain nearly 100% of both the observed decline in dividend yields and the observed increase in the price-to-earnings (PE) ratio.

Finally, I use this model to examine directly how wealth inequality changes corporate behavior. I study a one-time, unanticipated wealth redistribution where shareholding is seized from all households and redistributed equally. Investment falls because there are no longer wealthy, patient households as the primary holders of the firm. Lower investment leads to a drop in GDP of roughly 2.5%. However, the recession generated by this wealth redistribution policy is incredibly persistent. A standard TFP shock sees output back at the baseline level within 2-3 years. In contrast, a recession caused by redistribution has a half-life of approximately 80 years. This experiment serves as a warning to policymakers who only consider household-level outcomes when evaluating redistributive policies.

In another working paper, **How Do Evolving Common Ownership Motives Shape Capital Investment?**, I study the interaction between common ownership and capital investment in the US economy. The common ownership hypothesis suggests that firms owned by a pooled set of shareholders will compete with each other less vigorously to increase their shareholders' portfolio profits. Most of the research on common ownership is around the existence or implementation of common ownership frictions in specific markets. In contrast, this paper studies the implications of common ownership on macroeconomic outcomes.

This paper's contribution is twofold. First, I contribute to the common ownership theory literature by developing a closed form expression for markups under common ownership frictions with nested product differentiation. This functional form results in lower markups than otherwise predicted by the literature while also better matching market structures in an aggregate setting. The second contribution links the existing micro-focused common ownership literature and declining business dynamism. I find that increasing the common ownership friction results in decreased capital investment, rising markups, a falling labor share of output, and a growing wedge between the wealth-to-GDP ratio and the capital-to-output ratio.

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 rising 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 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. My future research continues along the theme of studying shareholder-firm interactions to better understand macroeconomic outcomes.

Leveraging work in my job market paper, I examine **How Changes to the Tax Code Influence Corporate Investment and the Wealth Distribution**. While there is a rich literature studying this interaction, structural analyses of taxes and corporate behavior have always been limited by the issue of shareholder disagreement. In models that cannot overcome shareholder disagreement, there is no clear way for household taxes to influence firm behavior. Leveraging the model in my job market paper, I can study how different types of taxes pass through from household preferences to corporate behavior. When there is a meaningful distribution of households who pay a progressive income tax on dividends, the effect of tax changes 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.

The fully calibrated version of this paper will be a powerful tool for evaluating tax policy. Existing approaches to evaluating tax policy generally require either a trivial production sector or a representative household sector. In either case, these simplifications typically prevent us from understanding how tax policy shapes corporate investment or wealth inequality. With my model, I can deconstruct how dividend, capital gains, corporate income, and share repurchase taxes all differentially impact economic growth, volatility, and inequality.

In related research, I seek to understand **Who Benefits from Share Repurchases**. I leverage a new dataset from Amel-Zadeh, Kasperk, and Schmalz (2023) of shareholding over the last 20 years to measure who buys, sells, or holds shares. My initial findings suggest that share repurchases decrease relative shareholding by large financial blockholders (like Fidelity or Blackrock) and increase relative shareholding by managers. Because smaller investors tend to hold financial wealth through institutional investors, share buybacks tend to give cash to small investors and control to large investors. Financial regulators should be cognizant of the distributional effects of share repurchases when making policy change recommendations. Share repurchases don't just return value to shareholders – they change who holds corporate wealth.

I also plan to continue working in the common ownership literature. The first of these papers I am currently working on studies **Common Ownership as a Market-Value Maximizing Strategy**. The common ownership literature is primarily founded on the idea that firms maximize the portfolio profits of their owners, weighted by shareholding. However, managers regularly claim that they do not consider portfolio effects when running their firms. I propose a model where firms endogenously choose to compete less vigorously with each other as a market value-maximizing strategy. As a firm increases its cross-firm profit weights, it provides more value to portfolio holders and less to those not diversified. The optimal profit weights then depend on market structure and the distribution of shareholding in the market. While this method of calculating profit weights is less universal, it may help explain why evidence of common ownership varies across industries.

Finally, I am working on a paper that studies **What Earnings Call Investor Questions Teach Us About Common Ownership**. This paper leverages the fact that investors can publicly question firm management about corporate strategy during earnings releases. I specifically

focus on the airline sector where changes to capacity (or quantity of seats) requires significant capital investment announced many quarters in advance of a proposed change. When airlines grow, they tend to become less profitable and lower profits of their competitors where they overlap. If the common ownership hypothesis is true, we would expect large, institutional investors to lobby against capacity growth during earnings calls. Both analysts and airline executives refer to limiting industry capacity growth with the term of industry, "capacity discipline." While the analysis is still in progress, I expect this research to provide additional evidence of common ownership friction in the airline sector.