Research Statement

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My research interests lie in macroeconomics, wealth and income inequality and development economics. I use macroeconomic tools to study behavior concerning physical and human capital, and health, and their implications on wealth and income distribution. I am also interested in the micro foundations of firm and household behavior. My future work will be open to any interesting development questions, but the immediate focus follows my current research lines. I will deepen my research on wealth distribution and investment, exploring dynamics of emerging industries, and studying the impacts of health shocks on physical and human capital based on the framework established in my dissertation. I will particularly focus on issues about economic growth and development. In this statement, I will go over the three chapters of my dissertation on wealth inequality and two topics for future researches.

Firm Heterogeneity and Wealth Distribution

In this paper I study how firm heterogeneity affects wealth distribution through entrepreneurial income and capital gains. As shown in Hottman, Redding and Weinstein 2016, size distribution of firms is highly skewed. Top 1% of firms in a product group on average have market shares of 50%. I develop a dynamic general equilibrium model with heterogeneous households and multiproduct firms. Each product has its own rate of return and scale, which result in heterogeneity in the rate of return and size of firms. Firms with larger scope of products benefit more from stricter control in product quality and thus grow faster than the others do. Households need to pay a premium to firm owners to invest in their firm, which can be interpreted as capital gain. Wealth of households, especially entrepreneurs, accumulates partly because of entrepreneurial income, which is their claim on their firm's profits, and partly because they receive capital gain. Firms in the model have two dimensions: its rate of return and the firm size. The premium increases in both, which allows households to sort into different firms based on their wealth.

The distribution of product space is calibrated with Nielsen barcode dataset. The simulation shows that the firm heterogeneity in its two dimensions results in a severe wealth inequality. The model can explain 90% of the rise in top wealth concentration between 2003 and 2012 in the United States. The result is consistent with findings in Saez and Zucman 2016 that the upswing in the top 1% wealth share is due to the rise in the top 0.1% and that the increase in wealth inequality is not due to rate of return differential on corporate stocks. Counterfactual exercises highlight entrepreneurship as the main driver in wealth equality and show that

fluctuations in risk free rate of return and access to new investment opportunities reduce wealth inequality, of which each may offset up to half of the effect of entrepreneurship.

Vital Health Shocks and Wealth Dynamics

This paper studies how households' cumulative health shocks affect their health investment, health insurance premium, and wealth. We develop a rich lifecycle model of endogenous health capital, insurance premium and wealth, with a diffusion income process and Poisson health shocks. In this model, health shocks affect a household's wealth through three channels. It increases medical spending, lowers productivity and thus income, and increases the probability of death. Theoretical results show that households tend to invest more in health and insurance when their health stock is high. This implies that vital health shocks may facilitate top concentration in wealth distribution. We categorize major vital diseases into five categories and estimate with their respective incidence rates and death rates a single Poisson process to represent health shocks of vital diseases. We then quantify their effects on wealth distribution.

Effects of Risk Aversion Heterogeneity on Income and Wealth Distribution

This paper is a complement to ***Firm Heterogeneity and Wealth Distribution*** where households are risk-neutral due to linear utility. In this paper I study the effects of households' attitude to risk on wealth distribution by introducing heterogeneity on the risk aversion parameter of Epstein-Zin preference. A simple two-period model reveals that risk aversion heterogeneity exacerbates wealth inequality. Households with relatively low level of risk aversion or high level of wealth are more exposed to risk. As risks in investment opportunities are realized, the variance of income among relatively wealthy households are larger than its counterpart among poor households, which leads to a heavier top concentration in wealth distribution.

Future research

Acquisition versus Innovation: How Leading Companies Emerge in New Industries

This research follows the line of ***Firm Heterogeneity and Wealth Distribution***. During the research on that, I notice that many of those who are climbing up from low to the top on wealth distribution are from hi-tech companies. Old industries seem not provide such mobility. This inspires me an idea on wealth distribution where emerging industries drive wealth inequality by generating wealth entrepreneurs at a fast rate. Wealth inequality increases faster when more emerging industries appear. The key of this theory is to understand the mechanism behind the dynamics of the young firm and the emerging industry. The process of a new company emerging as leading can be roughly divided into three stages. The first stage is characterized as single product, high risk and fast growth. The second stage features slower

growth in scale, higher growth in scope. The third stage exhibits slow growth and high market power. Two different strategies are available: acquisition featuring high cost and low risk, and innovation featuring low cost and high risk. I expect that innovation is more common among early stages while acquisition prevails at later stages.

Inalienability of human capital and health shocks

This research follows the line of ***Vital Health Shocks and Wealth Dynamics***. During the research on that, I notice that there is a fundamental difference between physical capital and human capital: alienability. Physical capital is alienable, in the sense that even its rate of return is maintained, and affected by estate tax while human capital is inalienable. Thus, health shocks have different effects on them. When the health shock hit, physical capital can be transferred to the heir and is affected by tax. But human capital may be destroyed. This implies that the return of human capital is riskier, the depreciation of human capital is higher, and the owner of valuable human capital may have more health-related expenditure. This theory may help explain why lawyers, doctors and stars are common on the top of income distribution but underrepresented on the top of wealth distribution.