I am a macroeconomist with a particular focus of research on the interactions between household consumption-savings behavior, inequality and the aggregate economy. I have been studying the reasons underlying the shortage of household savings, as well as its implications on labor market allocations. During this process, I have developed quantitative tools to answer questions on inequality that are of direct policy relevance.

In my job market paper "**Precautionary Mismatch**," which is joint with Xincheng Qiu, we study how sorting between workers and firms, and consequently labor market efficiency, can be influenced by workers' wealth holdings. Following the recent literature on multidimensional skill mismatch, we construct a measure of worker-job mismatch and find that it tends to be more pronounced for wealth-poor workers, even after controlling for a variety of confounding factors associated with wealth inequality. Moreover, we find that this relationship can be explained by the fact that wealth-poor workers accept jobs more quickly. The empirical findings point to a theory where search frictions hinder perfect worker-job assignment, and workers use savings and job search strategy to self-insure. With this in mind, we construct a structural framework with three key elements: two-sided heterogeneity (so that sorting can be studied), search frictions (so that sorting is imperfect and mismatch arises) and incomplete markets (so that workers need to accumulate wealth to self-insure). Our framework organically nests three workhorse models in macroeconomics and labor economics: Becker's assignment model, Diamond-Mortensen-Pissarides random search and matching model, and Bewley-Hugget-Imrohoroglu-Aiyagari incomplete markets model.

The key mechanism of the model works through the interaction between precautionary motive and search frictions. Because of search frictions, there exists a trade-off between the speed of forming a match and the payoff from the match. As workers are risk averse, this trade-off is weighed in favor of speed when workers have low wealth holdings. Meanwhile, a lack of wealth puts workers in a lower bargaining position, suppressing their wages. This in turn induces a wider range of jobs to accept these workers, leading to heightened levels of mismatch and further deviation from the efficient allocation.

We calibrate the model so that the model-implied elasticity of job finding rate and re-employment wages with respect to wealth matches with those in the data. Using the calibrated model, we find that there is a substantial effect of wealth holdings on wages and productivity, especially for high-skilled workers. In particular, for the highest-skilled workers, the earnings gap and productivity gap between the wealthiest and the wealth-poorest amount to 31.5% and 42% respectively. In addition, there is substantial missing output due to mismatch – an efficient allocation of currently employed workers would increase overall output by 2.6%, roughly 1-year's GDP growth.

We use the model to study the effect of a policy which redistributes wealth from the old to young labor market entrants, as workers typically start their life with little savings and therefore

limited capability to self-insure. We find that in spite of an increase in unemployment and a mild drop in labor market output, sorting as well as labor productivity improves, with most of the improvement coming from a reduction in under-employment of high-skilled workers. Moreover, as higher wealth translates into higher wages for young workers, it in turn boosts their savings and consumption in the long run.

In a related work joint with Xincheng Qiu "**Identifying Labor Market Sorting with Non-productive Heterogeneity**," which is currently in progress, we develop a method to identify labor market sorting in an environment where workers and jobs form matches based on characteristics that are unobserved (to economists). Inspired by our previous joint work, we focus on a more challenging setting where nonproductive characteristics such as workers' savings play a role in matching decisions. Workers can be partially ranked based on their wealth holdings and wages relative to their co-workers, and then globally ranked based on their transitions to other firms. Meanwhile, firms can be ranked based on the differences between wages paid and workers' reservation wages as in Hagedorn, Law and Manovskii (2017). We plan to use information on wages, labor market transitions and wealth in Danish administrative matched employer-employee data and apply the identification method to the model developed in our previous joint work, and revisit the effect of wealth on labor productivity.

In my third work in progress "**Unexpected Expenditure and High-cost Credit**," I study the reasons underlying the pervasive use of high-cost consumer credit such as payday loans in the US, and its connections with the lack of liquid savings in US households. From household survey data I find that a majority of high-cost credit borrowers have recently experienced a series of unexpected emergencies, such as accidents, repairs, and hospital visits, which disrupt their savings plan. This suggests that non-discretionary expenditure shocks should be the key to understanding the borrowing behavior of liquidity-constrained high-cost credit borrowers – in a standard incomplete markets model absent this type of shock, wealth-poor workers have strong precautionary savings motive and would thus be able to accumulate a stock of savings. I plan to analyze the components of expenditure using PSID and CES data and test whether expenditures are more concentrated towards non-discretionary categories for the wealth- and income-poor. In doing so I also expect to provide a micro foundation for discount rate heterogeneity which is commonly used to explain wealth inequality in the literature.

I will continue to expand my research portfolio based on the pipeline laid out above, and aim to answer more questions of policy relevance based on the insights generated from the aforementioned papers. I also expect to make further contributions on the discussions of how inequality matters for the macroeconomy, and how macroeconomic aggregates matter for inequality.