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Research Statement

I am a macroeconomist with interests at the intersection between the real and financial sectors of the economy. My research examines the micro- and macroeconomic implications of firm financial frictions and precautionary savings behavior across households. I conduct research using a combination of quantitative and applied econometric techniques.

Job Market Paper

In my job market paper, “Long-Term Debt, Default, & Policy Transmission during Severe Recessions”, I study how the maturity of long-term debt affects firm investment and the aggregate responses to recessions. I model debt maturity probabilistically, such that either none or all of a firm’s debt matures in a given period. I embed this maturity process into a dynamic general equilibrium model with firm heterogeneity and default risk.

In a calibrated version of the model, which replicates key moments of firm investment rates and leverage, I show that the maturity of long-term debt generates a persistent decline in firm-level investment. I conduct an empirical analysis on publicly traded firms that corroborates this effect. I examine the model dynamics under a severe recession, modeled after the 2020 recession. Over the recession, maturing debt has a larger effect on investment than in the steady state. This is primarily due to an increase in rollover risk: the benchmark lending rate rises, making it more expensive to maintain a given level of debt. I analyze policies styled after those implemented during the 2020 recession. A cash grants policy similar to the Paycheck Protection Program strengthens the recovery, but generates large general equilibrium effects that increase defaults. A policy that reduces long-term interest rates, which captures a key channel of quantitative easing, does prevent defaults, but has little effect on aggregate investment.

A novel features of probabilistic maturity is that it generates a substantive distinction between long-term, risky debt and short-term financial savings. Hence, in the model firms simultaneously borrow and save, in addition to investing in physical capital. Separating financial savings and debt has important implications for the model dynamics. For example, at the start of a recession firms with high net worth increase their borrowing to hold precautionary savings. This ensures that if they subsequently receive a large negative shock, they will not have to borrow when it is more expensive to do so. Such precautionary savings are consistent with empirical data, but cannot be captured by the standard long-term debt model.

Precautionary Savings & Business Cycles

In joint work with Aubhik Khan, “Growth, Risk and Business Cycles in an Overlapping Generations Economy”, I study precautionary savings behavior over business cycles in a quantitative model with lifecycle dynamics and uninsurable risk. Households are subject to persistent risk determining their labor force participation and, conditional on employment, their earnings. This income risk and the need to save

for retirement give households have several incentives to save that are absent in the canonical incomplete markets model. Business cycle dynamics strengthen precautionary savings motives. A brief shock to productivity growth, combined with a fall in labor force participation, allows the model to replicate the large decline in aggregate consumption and the weak recovery observed during the Great Recession.

In a separate work in progress on household savings dynamics, “Earnings Risk, Portfolio Heterogeneity, and the Racial Wealth Gap in the US,” I examine the racial wealth gap in the U.S. Recent empirical studies show that richer households have a higher average return on savings than poorer households, due to differences in portfolios. The lower return on savings among less wealthy households makes wealth accumulation more challenging. This compounds the challenges facing African American households, as they are less likely to be employed and earn lower wages than white households.

Firm Financial Frictions & Business Cycles

In “The Propagation Effects of Long-Term Debt Maturity on Business Cycles”, a companion paper to my job market paper, I explore how the financial frictions inherent in long-term debt alter firm decisions in dynamic stochastic general equilibrium. I compare business cycle dynamics in a model with probabilistically maturing, long-term debt, to an otherwise identical model with one-period maturity. When debt is long-term, the equilibrium economy is smaller on average, but is more volatile as measured by the coefficient of variation on output.

Future Work

I will continue the research begun in my job market paper in two ways. I plan on including a more substantive financial intermediary, subject to its own frictions. This would generate feedback effects from individual firm risk to aggregate financial conditions. Additionally, it would allow for a more robust assessment of quantitative easing. Relatedly, I intend on including nominal frictions into the model, which would allow the model to more fully capture the effects of debt overhang. This extension would also allow for an assessment of how conventional monetary policy interacts with probabilistic maturity.

I also plan on conducting further analyses of the underlying model behind my job market paper. One would endogenize the duration of debt and assess how decisions on duration influence investment. Separately, in the current model lenders can only influence firm behavior at origination. I intend to introduce loan covenants into the model, allowing lenders to discipline borrowers’ behavior throughout the contract. This would allow me to study how such covenants affect firms’ risk-taking and growth.

Additionally, Aubhik Khan and I are going to write a follow-up paper to our existing work. We will extend the model by introducing nominal frictions and monetary policy shocks to the environment. While there is growing literature on heterogeneous-agent New Keynesian models, none so far have incorporated overlapping generations, which, as our current work shows, is a key driver of precautionary savings and aggregate dynamics. In this extended model, we plan to assess several questions. First, how do nominal frictions affect price dynamics and household responses over business cycles? Additionally, we are interested in studying how marginal propensities to consume (MPCs) vary over the business cycle, and across household characteristics such as age. How does the distribution of MPCs respond to fiscal and monetary stimulus? What are the implications for aggregate dynamics?