

DISSERTATION PROPOSAL

Cross-Sectional Phenomena and New Perspectives on Macro-Finance Puzzles

Cédric Ehouarne

Friday, September 11, 2015

10:00 am

228-H GSIA

The U.S. subprime mortgage crisis of 2007-09 is a prime example of how the actions of a small group of economic agents – subprime borrowers defaulting on their mortgage – can spill over to the whole economy. Such a situation points to the need to understand the forces behind cross-sectional heterogeneity and study how they relate with aggregate variables. This dissertation seeks to better understand the U.S. Business Cycle dynamics at the cross-sectional level and shed new light on classic puzzles in macroeconomics and finance. My dissertation is comprised of three chapters that deal with heterogeneity among households, regions, and firms respectively.

In the first chapter, titled “The Cyclical Nature of Consumer Finance”, I study both theoretically and empirically the cross-sectional changes in consumer finance over the Business Cycle. Using the triennial Survey of Consumer Finances over 1995-2013, I compute novel *cross-sectional* time series of household leverage, borrowing limits, and interest rates in unsecured credit markets. I show that recessions are marked by sizable drops in the *dispersion* of leverage and borrowing limits, and they are uncorrelated with changes in the distribution of cost of borrowing. Furthermore, the *amount* of heterogeneity in risk-sharing opportunities is large compared to what typical incomplete-market models would assume. I explain the data through the lens of a dynamic stochastic general equilibrium model with heterogeneous agents, incomplete markets, labor-based production and unsecured credit default risk. I estimate the steady-state model by SMM and show how multi-dimensional heterogeneity in earnings, impatience and attitude toward default risk gives rise to a large dispersion in the distribution of leverage *and* interest rates, while at the same time explaining their apparent disconnect. Turning to Business Cycle analysis, I will investigate how idiosyncratic labor productivity jumps can explain the *joint* cross-sectional dynamics of leverage, interest rates, default rates and unemployment through a simple aggregate demand channel. At the heart of this theory is the treatment of unemployment: goods and labor markets are frictionless, there is perfect competition among firms and prices are flexible. Yet, unemployment is an equilibrium outcome due to the lack of consumption from credit-constrained households. In fact, if markets were complete, there would be no unemployment in this framework. This mechanism gives rise to a rich and novel interplay between labor risk and credit risk.

In the second chapter, titled “The Geography of Risk”, I study the cyclical movements in the geographic *dispersion* of employment, credit, and default. Using the state-level data from the Bureau of Labor Statistics during the period 1976-2015, I show that the standard deviation of unemployment rates across U.S. states is *countercyclical*, highly *volatile* and *asymmetric* over the Business Cycle: it jumps at the onset of a recession and slowly decays during the recovery. A look at the FRNY regional data over the sample period 1999-2014 reveals that geographic labor risk is associated with spikes in the interstate dispersion of default rates, delinquency rates and negative growth rates in total

consumer debt. To understand the forces behind the *joint* dynamics of employment, credit and default across time periods *and* U.S. states, I develop and will numerically solve a fully dynamic stochastic general equilibrium with incomplete markets, tradable and non-tradable goods, and two layers of heterogeneity – one at the household level, and another one at the state level. I model geographic volatility shocks as idiosyncratic labor productivity jumps with state-level time-varying frequencies and will investigate their ability to generate economy-wide cycles through interstate trade spillovers. I will then use the theory to quantify the magnitude of these spillovers during the recessionary episode of 2007–09.

In the third chapter, titled “The Market Price of Capital Misallocation” (joint work with Lars-Alexander Kuehn and David Schreindorfer), we study the aggregate business cycle and risk premia implications of a dynamic, stochastic general equilibrium model with firm heterogeneity. In our model economy, firms face irreversible investment decisions, exit, and persistent idiosyncratic and aggregate productivity shocks. The representative household has Epstein-Zin preferences. We solve for the equilibrium dynamics of the Epstein-Zin pricing kernel by aggregating dividends and firm values across heterogeneous firms to obtain consumption and wealth. In contrast to the existing literature, our model shows that the misallocation of capital across firms matters for aggregate consumption and risk premia. In bad times, large unproductive firms disproportionately reduce aggregate consumption and wealth. Epstein-Zin preferences magnify the price of misallocation because the household cares about long-lasting consumption distortions. Consequently, the welfare costs of capital misallocation and aggregate risk premia are large. A crucial feature of our model is that the firm size distribution has time varying excess skewness and kurtosis.