Research Statement
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My fields of interest are macroeconomics and asset pricing. This research statement first details my job market paper. I then summarize my projects on consumption-based asset pricing models and my work in progress about Chinese firms' exposure to political risks. I conclude with my plan for future research.

"Labor Adjustment Cost: Implications from Asset Prices" (Job Market Paper)

This paper presents and rationalizes the empirical fact that firms with higher hours growth are associated with lower equilibrium equity returns. I argue that this empirical fact concerning labor input and asset prices matters for macroeconomics and asset pricing.

Labor input is an essential and integral component in a firm's optimization. At the micro-level, firms' decisions of labor input take place along two dimensions. Regarding employment (extensive margin), firms determine what and how many workers to hire/fire. Concerning hours (intensive margin), firms make choices and adjustments concerning working shifts/lengths. These decisions by nature are forward-looking and time-varying. Therefore, a firm's labor input contains information about its equity returns and cash flows in the future. Moreover, patterns in labor input across firms can reveal conditions of and changes in the aggregate economy.

In this paper, I study empirically and quantitatively whether the firm's labor input choices of hours and employment manifest a source of macroeconomic risk that is priced in the cross-section of equity return in the presence of labor adjustment cost. I show empirically that firms with high hours growth are associated with low equity returns. To elucidate the underlying economic mechanism and to quantify the impacts of hours and employment on equity return, I develop a production-based asset pricing model with dynamic labor input that is explicit about hours and employment. The model reveals and recovers a macroeconomic shock that reduces firms' adjustment cost and affects representative households' marginal utility. Using the simulated method of moments (SMM) procedure for structural estimation of the model, I quantitatively reproduce dynamics between hours and employment, relative magnitudes of adjustment cost, and equity return predictability of labor input. To further understand the economic forces in the model, I perform empirical investigations of and find supportive evidence for the model's implications about aggregate business cycle fluctuations and firm-level real quantities and asset prices.

The model rationalizes the negative relationship between hours growth and equity returns with two key ingredients, which are (1) the labor adjustment cost that is explicit about hours and employment, and (2) the adjustment cost shock that lowers adjustment cost at the micro-level and affects representative households' marginal utility at the macro-level. In the economy, a positive adjustment cost shock lowers the adjustment cost for all firms and hence promotes adjustment along all dimensions of production inputs. Therefore, the positive adjustment cost shock encourages aggregate investment, redistributed from and contractionary to aggregate consumption. At the firm level, firms who adjust hours and/or employment in face of the positive adjustment cost shock benefit from the lowered adjustment cost. As a result, these firms pay out relatively more in the cross section when the aggregate consumption is low. Combining these two forces, firms with higher hours growth are less risky and hence associated with lower equilibrium equity returns.

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In summary, this paper illustrates how my asset pricing empirical results of labor input and equity return can identify a macroeconomic shock. In particular, the cross-sectional equity returns additionally shed light on the dynamics of hours and employment, on the structure of labor adjustment cost, and on the properties of a recovered aggregate shock that matters for both macroeconomics and asset pricing.

A Series of Papers on Consumption-based Asset Pricing Models

"Labor Commitment" I propose a novel economic mechanism that matches the procyclical labor hours and countercyclical risk premium observed in business cycle fluctuations. I first build a neoclassical model utilizing the concept of labor commitment, a measure of a representative agent's growing, income-generating stock of labor. In the model, the utility is nonseparable between consumption and labor. Hence the intertemporal marginal rate of substitution (IMRS) in equilibrium increases in the labor-consumption ratio growth. I next validate the model using U.S. postwar aggregate data and test the model's mechanism via the lens of asset pricing. I examine implications of the economic mechanism using cross-sectional equity returns. I find that, the equilibrium stochastic discount factor implied unconditional linear factor model performs about as well as the Fama-French three-factor model in explaining cross-sectional portfolios. Furthermore, I find that conditioning on growth in the labor-consumption ratio improves various unconditional models more than *cay* and durable consumption growth.

"Consumption of Stockholders and Nonstockholders: New Evidence from the PSID" (Joint with Marianne Baxter) We estimate risk aversion of stockholders and nonstockholders using data from the Panel Study on Income Dynamics (PSID). Our theoretical framework utilizes recursive utility and long-run risk. To our knowledge, our paper is the first to use reliable information from a single panel dataset to measure both consumption and stockholding status, as well as earnings and wealth. We estimate stockholder risk aversion in the range of 6 to 12 – much lower than found in most prior analyses, and much closer to levels considered "reasonable" by macro and finance economists.

"The Hours Premium in U.S. Asset-Pricing" I study the relation between hours growth and equity return from the household side in a representative agent framework. This paper proposes a single macroeconomic factor based on the growth in hours of aggregate labor input, and examines whether this macroeconomic factor represents a source of risk. I start from the empirical observation that the hourly wage and salary has been relatively flat for several decades and build a theoretical framework with limited participation in asset markets. The model is consistent with the story in which fluctuations in aggregate hours is a source of aggregate risk because of a limited risk-sharing mechanism between households whose consumption is mostly supported by labor income and those who support their consumption by both labor and asset income. Supported empirically, the single risk factor explains about 70-percent of Fama-French 25 portfolios equity returns.

Chinese Firms' Exposure to Political Risks

In this project, I investigate how much and what kinds of political risks are associated with Chinese firms. The paper start by defining and measuring political risks. Using web-scraping and textual analysis, I construct my dataset including Chinese firms that are either listed in NASDAQ, NYSE, and AMEX, or traded in Over-The-Counter (OTC) markets as American Depositary Receipts (ADRs). Therefore, the dataset contains a broader universe of Chinese firms that are available in the standardized financial reporting system. Then firm-level political risks are quantified as the intensity of political risks-related discussions in a firm's quarterly conference call participated by both the management team and the institution analysts.

Next, I validate the empirical definition and measurement, and obtain the following preliminary results. First, the implied aggregate time-series of political risks recovered from my dataset resembles the Economic Policy Uncertainty (EPU) index in China with a correlation coefficient of 0.53 and varies intuitively over time. I categorize the political risks associated with the management team's presentations to be voluntary disclosure and those associated with institution analysts' questions to be market following. My result suggests that the political risks derived from voluntary disclosure are twice as large as the political risks derived from the market following. This result is surprising in that traditional views would suggest voluntary disclosure be not informative due to associated private and social costs.

Plans for Future Research

Most of my current work is concerned with the interplay between macroeconomic variables and asset prices. One of the objectives of my research agenda going forward is studying the impact of labor input on equity returns in a general equilibrium environment. Another branch of future research is planned to continue my efforts in bringing cutting-edge machine learning techniques to solving economic questions. For example, using more algorithmic and sophisticated natural language processing tools on Chinese, I would be able to extend my work in progress "Chinese Firms' Exposure to Political Risks" along two dimensions. First, the universe of Chinese firms could additionally include all firms listed on the Shanghai (SSE), Shenzhen (SZSE), and Hong Kong (HKEX) Exchanges; second, besides earnings calls, the textual analysis could include additional contexts in standardized financial reports.