Research Statement
Yuan Liu
UCDavis

New York Times Columnist Thomas L. Friedman asserts in his bestselling book “The World Is Flat” that we are in a wired World 3.0 where information, products, and money can move around the planet more freely than ever before. However, looking at the data, international economists are often amazed not at how big the international flow of products and assets is, but how small. Most economic activities that could be conducted either within or across borders are still heavily concentrated domestically. Around the globe, only about 15% of the portfolio investments are across borders. Investors put most of their money within borders despite the benefits of diversifying internationally. This phenomenon is recognized as home bias puzzle in the literature.

My thesis is about home bias in equity portfolios. We show that a deep understanding of the puzzle requires proper attention to the first stage participation decision as well as the heterogeneity among individual investors. We also shed light on the cross country difference in equity home bias by relating the puzzle to wealth inequality. These works not only provide theoretical foundations to existing empirical evidence but also document some new stylized facts.

Existing works in the literature of equity home bias all explain why investors hold more home equities than foreign equities conditional on positive holdings of both. However, they ignored the fact that a large number of investors own only home equities. My job market paper, “Extensive and Intensive Margins of Equity Home Bias: Theory and Evidence”, is the first to show that a majority of equity home bias is attributable to the extensive margin, which we define as the proportion of equity holders who do not participate in the foreign equity market. This type of bias calls for a different type of explanation than the usual intensive margin bias, which refers to the home biased portfolio conditional on positive holdings of both home and foreign equities. This research provides an entry cost based explanation to the extensive margin bias. It helps explain the nature of overall bias by also showing the portfolio heterogeneity among participants. We incorporate wealth heterogeneity, entry cost, and endogenous information acquisition into a rational noisy expectations model to generate both limited participation and portfolio heterogeneity among participants. The model can replicate the share of foreign equities in US equity portfolio in both margins. It makes predictions consistent with the following stylized facts: first, the participation rate is lower in the foreign market than in the home market; second, participation increases in wealth; third, the share of wealth invested in equity increases in wealth; fourth, information acquisition increases in wealth. Finally it also uncovers a new surprising fact: households with foreign equity holdings reduce the degree of international diversification as wealth increases. Investors increase the share of wealth in both home equities and foreign equities as wealth increases. However, the former increases faster because the marginal information cost increases more slowly at home.

Investors are reluctant to buy foreign equities despite the theoretical gains from international diversification. Even when they cross borders, they prefer nearby foreign countries which have high correlations in returns with the home country. This is another puzzling aspect of international portfolio diversification. If investors look for diversification opportunities across borders, they should want to buy equities in countries less correlated with the home country to gain more
diversification benefits. Researchers use gravity equations to explain this geographical pattern of bilateral financial flows and asset holdings, interpreting distance as a proxy for information cost. Another work of mine, “Asymmetric Information Cost, Wealth Heterogeneity and International Portfolio Diversification”, provides theoretical foundations for such an argument. In our multi-country rational noisy expectations model, investors concentrate their cross-border equity investments in nearby countries which are highly correlated in returns with the home country because they have more information about these countries. Information about these nearby countries costs less since they share more common risk factors with the home country.

The past several decades have witnessed a fall in equity home bias as well as a rise in wealth inequality across countries. Another paper of mine joint with Ju Hyun Pyun from Korean University, “Equity Home Bias and Wealth Inequality Across Countries: Theory and Evidence”, links these two phenomena. It provides new insight into the international portfolio diversification puzzle by introducing wealth inequality into the discussion of cross border equity holdings. The two-country rational noisy expectations model, which features wealth heterogeneity, entry costs and endogenous information acquisition, predicts that foreign equity holders belong to the top wealth group. Therefore a country where the top wealth group owns a larger share of total wealth hold more foreign equities and exhibits a lower degree of equity home bias. Our empirical results support the theoretical predictions. We confirm that measures of wealth inequality in the host country are significant explanatory variables in a gravity regression of bilateral equity holdings. The gravity equation can explain about 10% more of the variance in bilateral equity holdings with the wealth inequality measures. These measures have also a significant negative impact on a country’s degree of equity home bias.

The field of international finance is riddled with empirical regularities at odds with theory. Equity home bias is just one of them. The benchmark theory assumes complete risk sharing, where as I believe that all the puzzles point to the lack of international risk sharing. My new project, “Household Heterogeneity in Risk Sharing and International Real Business Cycle”, aims at introducing endogenously household heterogeneity in risk sharing into a canonical two country DSGE model to shed light on several international real business cycle anomalies. Each country is populated by infinitely many agents. Agents are endowed with different amounts of wealth, and must pay an entry cost for international asset trading. Therefore, there are a group of poor agents who do not participate in risk sharing and eat whatever they have. Agents at the middle of the wealth distribution participate in domestic but not international risk sharing. Due to limited risk sharing, countries can not perfectly pool the products and re-distribute them such that the marginal utilities are equal across agents. This model has the potential to examine the dynamics of wealth heterogeneity and wealth distribution.

In an increasingly integrated global economy, where enormous amounts of information around the globe are accessible, I believe that there are still tangible and intangible barriers to international trade in assets and goods due to the heterogeneity across agents and across countries. I also believe that a deep understanding of international macroeconomics must be based on the recognition of microfounded heterogeneity. The process of globalization is accompanied by an increase in inequality. This phenomenon calls for studies of the dynamics of wealth distribution theoretically and empirically. In the future, I will continue my explorations in these topics. I hope my research can contribute to a better understanding of the international economic society.