Research Statement

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My research areas are macroeconomics and international finance. I have been mainly working on the field of open economy macroeconomics throughout my Ph.D. studies. My main interest is to explore the international business cycle and the dynamics of international relative price movements.

My job market paper, "Product Variety, Firm Entry and Terms of Trade Dynamics," explains the anomaly of the terms of trade dynamics in response to a positive productivity shock using a Dynamic Stochastic General Equilibrium (DSGE) model. Recent evidence in the empirical literature has suggested that the terms of trade tends to improve or appreciate in response to a positive domestic productivity shock. However, in the theoretical literature, standard two-country real business cycle (RBC) models imply that the terms of trade worsens, i.e., the relative price of domestically-produced goods decreases, in response to a positive domestic productivity shock. In my job market paper, I build a model that can account for the dynamics of the terms of trade observed in empirical findings. I construct a two-country DSGE model augmented with heterogeneous firm-specific productivities and a non-homothetic preference but incorporating both the income effect and markup effect. Unlike previous studies, I explain the dynamics of the terms of trade through the channel of relative cutoff firm-specific productivity that determines the optimal export decisions of the firms. Depending on the asset market structure, two competing effects, i.e., the income effect and markup effect, have different implication to the terms of trade dynamics. Under the assumption of financial autarky, the income effect is bigger than the markup effect and the terms of trade depreciates in response to a positive aggregate productivity shock. However, if we allow for the trade of state-contingent or non-state contingent bonds, the income effect is mitigated and the markup effect appreciates the terms of trade, which is in line with the empirical findings. This paper contributes to our understanding of the implications of financial openness on the terms of trade dynamics. The theoretical analyses conducted in this paper suggest
that the terms of trade movement varies across different stages of asset market integration. If the level of asset market integration becomes higher, the markup effect becomes more important than the income effect and the channel of relative cutoff firm-specific productivity works to appreciate the terms of trade.

Second paper, "News-Driven International Business Cycles," analyzes the international transmission effect of the news about future U.S. productivity on the Canadian and Japanese economy. First, using the Vector Error Correction Model (VECM), I estimate the impulse responses of the Canadian and Japanese macroeconomic variables to the US news shock. Next, I develop and estimate a two-country real business cycle (RBC) model with the preference that reduces the wealth effect on the hours worked and investment adjustment cost to generate booms in Canadian and Japanese variables in response to a news about future US total factor productivity (TFP). I find that international macroeconomic positive comovements between the US and Canada/between the US and Japan can be generated by the news about future TFP in the US. Unlike previous studies, I make a tight link between the data and the model, which was lacking in the previous literature of news-driven international business cycles, especially in their diffusion process of the news about future TFP. I take into account the fact that the Canadian and Japanese TFP are also responding to the US news significantly. For this objective, I feed the Canadian and Japanese TFP responses to the US news into the model. By conducting a counterfactual experiment assuming a zero response of the Canadian or Japanese TFP to the US news shock, I show that the responses of the Canadian and Japanese TFP to the US news are important to explain the comovements between the US and Canada/between the US and Japan. Using impulse response matching estimation, I estimate the model parameters. Estimated value of the preference parameter indicates that eliminating the wealth effect on hours worked is important to explain the comovements. I also find that low elasticity of substitution between domestically produced intermediate goods and foreign produced goods can also help explaining the domestic boom created by the news shock, which highlights the importance of analyzing in an open economy setting.

My future research plans include further working on the projects of international business cycles and relative price movements. In order to deepen the idea of my job market paper, my plan is to explore the ability of the model augmented with non-homothetic preference and heterogeneous productivities to explain the volatilities and international comovements of macroeconomic variables. In my job market paper which explains the dynamics of the terms of trade, I find that there are two important effects to explain the observed dynamics of the terms of trade: the income effect and the markup effect. I also find that the relative importance of these two effects differ across different asset market
structures. First, I would like to analyze if the comovements can be explained using these two effects. Second, since how the asset market structure matters for explaining the comovements is ambiguous, it would be a great interest to structurally estimate the full model. The other research plan of my interest is to empirically test the change of the distribution of firm-specific productivities using a large set of panel data in response to an aggregate productivity shock.