Summary of "Essays on foreign direct investment and multinational production"

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This dissertation aims to provide empirical and quantitative analysis on the impacts of policies and economic shocks on the activities of multinational enterprises (MNEs), with a specific focus on foreign direct investment (FDI) and international technology transfer associated with FDI. In Chapter 1, it raises the following three research questions and explains how to address them in subsequent chapters: (1) How do changes in trade and multinational production costs affect the decisions of MNEs regarding multinational production?; (2) how do international investment agreements (IIAs) affect FDI such that they could result in technology transfer to the host country?; and (3) how does the US–China decoupling affect technology transfer associated with FDI?

The first research question is addressed in Chapter 2. Chapter 2 quantifies three distinct effects of trade costs on multinational production: (1) the trade cost aversion effect, wherein reductions in import costs lead to a decrease in multinational production in a host country because it becomes more profitable for firms to export; (2) the input cost reduction effect, wherein decreases in import costs encourage multinational production as the cost of procuring intermediate goods from other countries decreases; and (3) the export-platform effect, wherein decreases in export costs in a host country promote multinational production because it becomes easier to export from a production base. To quantify these effects, I construct a quantitative general equilibrium model of trade and multinational production, incorporating the setting of input–output linkages. Utilizing the data for ten countries and seven industries in 2016, I first conduct counterfactual analyses to measure how multinational production in Mexico changes when import costs in Mexico decrease, allowing for a comparison of the conflicting effects of the (1) trade cost aversion effect and (2) input cost reduction effect. The results show that firms are more likely to establish production bases in Mexico, which indicates that the positive input cost reduction effect outweighs the negative trade cost aversion effect owing to the incorporation of input–output linkages, and that the input cost reduction

effects should not be ignored in analyzing the impact of trade policies and shocks. However, the changes in output vary among industries and do not necessarily increase uniformly. I also quantify the impacts of Brexit, revealing a negative impact on the welfare of the United Kingdom and EU countries. I also find that multinational production between the United Kingdom and EU countries increases when trade is restricted in correspondence with the decrease in trade, and it decreases when multinational production is restricted as well.

The second research question is answered in the study in Chapter 3. Chapter 3 estimates the industry-specific effects of IIAs on FDI by focusing on how intellectual properties are intensively used in industries (i.e., knowledge intensity). It also considers the country-level heterogeneity in the effects of IIAs by focusing on intellectual property rights (IPR) protection in host countries, and addresses the issue of why there is no consensus on the effects of IIAs in previous studies. Using data of US outward FDI for the period 1999–2018, I find that the IIAs between the United States and 56 countries promote FDI from knowledge-intensive industries into countries with weak IPR protection. This result supports the hypothesis that IIAs have a positive effect on FDI if IIAs substitute for the weak legal protection of IPR in host countries.

The third research question corresponds to the study in Chapter 4. Chapter 4 quantifies the impact of trade and technology transfer restrictions between the United States and China, technology protection policies in China, and export control laws in both countries through US–China decoupling. To achieve this, I develop a trade general equilibrium model that considers FDI involving the transfer of technology and intellectual property, allowing me to analyze the restriction of technology transfer. This model comprises final and intermediate goods sectors and assumes that only the intermediate goods sector utilizes technology capital. This assumption is reasonable because high-tech industries, the main targets of export control laws, are often found in the intermediate goods sector. Using this model, I conduct a counterfactual analysis of trade and technology transfer restrictions. This analysis is based on data for 89 countries in 2016. I find that the United States, China, and the world as a whole experience welfare losses when US–China bilateral decoupling and related policies restrict both trade and technology transfer. I observe that China's technology protection policy affects not only countries with significant technology transfer from China but also countries that heavily rely on technology capital in their production. Furthermore, countries with larger import shares from the United States and China experience more substantial declines in imports owing to the US and China's export control laws. However, these import declines do not necessarily result in welfare losses.

Finally, this dissertation reiterates the results of each chapter and discusses in detail the con-

tributions throughout the dissertation in Chapter 5. This dissertation contributes to the research field of MNEs by elucidating the complex mechanisms through which policies and economic shocks affect the activities of MNEs and provides a deeper understanding of the significance of impacts of policies that are important in the real economy, such as IIAs, Brexit, and US–China decoupling. The empirical and quantitative frameworks used in this dissertation can be applied to the analysis of other policies and economic shocks related to the activities of MNEs and can contribute to the development of future research.