　　In recent decades, global trade has changed profoundly. The nature and structure of global trade have also changed enormously. One of the striking trends of trade in recent decades is the growing fragmentation of production or global value chains (GVCs). This is because of lower transportation costs, improved information technologies, and more open economies. Before the emergence of GVCs, most goods were generally produced entirely within a single country using domestically produced inputs. Nevertheless, the goods which generated in GVCs are multi-country products. That means that different stages of production are produced in different countries, which leads to GVCs with more and more countries involved. Moreover, in the global production network, countries import many intermediate inputs for production. These traded intermediate inputs sometimes cross the international border more than once and counted several times in the trade statistics. As the production networks have risen in the production process and several countries are involved in the production chains, that's why gross trade data may not be the accurate measures of real bilateral trade positions and do not give reliable information about the actual value-added created by a country in the global production process. Instead, trade in value-added data incorporates how much value that is added by a country in the production of any goods and services and that is the better reflection of global interdependences. Furthermore, the integration of GVCs in the production network is reducing the sensitivity of gross exports flows to exchange rate movements. If substitutability of domestic and foreign intermediate goods is lower, that may reduce the elasticities of gross trade. With the above-mentioned background, this dissertation consists of three independent

research paper on exchange rates, trade and global value chains. The first chapter of this dissertation investigates the impact of exchange rate volatility on gross exports as well as value-added exports for 11 Asian countries using the UNCTAD-Eora GVC database. There is a large empirical research on how exchange rate volatility affects trade. Almost all of them rely on traditional measures of gross trade data instead of value-added trade data. That's why, it is essential and critical to examine the impact of exchange rates on trade using value-added trade data as well as gross trade data. Due to the participation in global value chains and fragmentation in production process exporting countries use many intermediate inputs that are imported from abroad. This means that a final goods exported by the exporting country may contain a high percentage of foreign value-added and a correspondingly small percentage of domestic value-added. Therefore, the impact of exchange rate on trade should be different. In particular, the magnitude between gross exports data and value-added exports data. Additionally, value-added exports are better measures of the strength of demand spillovers and the competitiveness of relative price movements. Furthermore, value-added in final exports is really matters for job creation and value generation. By using a panel fixed-effects model, this chapter finds that exchange rate volatility does not affect the gross exports but affects the value-added exports negatively and significantly. The findings suggest that value-added exports are more sensitive to exchange rate volatility as compared to gross exports for these particular sample countries and time period. The findings of this chapter can act as important guidelines for the policymakers because value-added exports are more important compare to gross exports considering a country's job creation, value generation and wealth accumulation. The second chapter of this dissertation examines the link between exchange rates and exports in the presence of global value chains for 15 emerging countries by using aggregate as well as disaggregated sectoral data of bilateral exports. This chapter makes use of bilateral trade data from the WTO-OECD (World Trade Organization-Organization of Economic Cooperation and Development) ICIO (Inter Country Input Output) table from 1995 to 2011 (2016 edition). According to the conventional economic theory, a real depreciation of exchange rates can increase the net export flows of a country. Nevertheless, if the real depreciation of exchange rates does not increase net exports as much as the theory predicted, this raises the debate of disconnect argument between exchange rate and trade. The unresponsiveness of exports to exchange rate fluctuations has raised the question among the academics and policy makers as to whether the exchange rate elasticity of export volumes has changed, or even become zero. Fragmentation in the production process across the countries may be responsible for the disconnecting relationship between exports and the exchange rates. Therefore, formation of GVCs in the production process makes the relationship between exchange rate and trade more complex. Though emerging countries play a significant role in the world trade and GVCs but none of the previous studies address this issue empirically. Therefore, this chapter is specially focusing on emerging economies because of their significant and diverse role in GVCs.

However, emerging countries play a rapid role in the world trade. During 1980s and 1990s many emerging countries changed their development strategy from imports substitution to export led industrialization. As a result, during 2000s, emerging economies became the major exporters of intermediate goods, final manufactured goods and primary products. By using a panel gravity model and fixed effects estimation, this paper finds that participation in GVCs dampen the exchange rate elasticity of total exports and manufacturing exports by 52.43% and 47.95%, respectively for the case of emerging countries. Though service sectors' participation in GVCs are increasing over time but this study does not find any significant results for trade in service sector exports that participation in GVCs weaken the exchange rate elasticities of trade in service sector exports. The third chapter of this dissertation empirically estimates the exchange rate and income elasticities of value-added exports as well as traditional measures of gross exports for eight East Asian emerging countries. This chapter makes use of bilateral trade data from the Trade in Value Added (TiVA) database over the period of 1995 to 2011. Most existing elasticity estimates are based on the conventional measure of gross trade flows, but as new estimates of value‐added trade data have become available, they have opened the

opportunity of estimating value‐added trade elasticity. Before the emergence of GVCs, international trade was dominated by the exchange of final goods and intermediates goods used for producing final goods consumed domestically. In this context, trade elasticities are determined by the bilateral exchange rate and income of trading partners. Nevertheless, over time, international trade has become more complex, integration into GVCs in the production process involving more trade in intermediate goods that are then often re-exported thus increasing the relevance of exchange rate movements vis-à-vis third-party countries. That's why trade elasticities measured by gross trade data may not be reasonable proxies for trade elasticities measured by value-added trade data. The measures of value-added trade elasticities will give policymakers a better understanding of trade patterns and this will be useful to implement more adequate macroeconomic policies. By using the panel Autoregressive Distributed Lag (ARDL) model, this chapter finds that the estimated long run elasticities of value-added exports to exchange rate are higher than that of gross exports for all countries except China and Singapore. Correspondingly, the estimated elasticities of value-added exports to income are higher than that of gross exports for China, Indonesia, Malaysia, Philippines and Thailand. The income elasticities for Hong Kong, Korea and Singapore are higher for gross exports compare to value-added exports. Furthermore, long run exchange rate elasticities of gross exports as well as value-added exports are inelastic for China, Hong Kong, Korea, Malaysia and Thailand and elastic for Indonesia. Additionally, long run income elasticities of gross exports as well as value-added exports are elastic for Indonesia, Korea, Singapore, Philippines and Thailand and inelastic for Hong Kong and Malaysia. The only exception is China where the income elasticity of gross exports is inelastic but elastic for value-added

exports.

This dissertation looks at the effects on exchange movements on trade flows in the wake of ever-expanding global-value chain networks and international fragmentation of production. Expert use is made of recently available value-added trade measures (in goods, and also in services). It is a `three essay` style dissertation.

Chapter 1 investigates the impact of exchange rate volatility on gross exports and value-added exports for 11 Asian countries over the period of 2000 to 2016 using the UNCTAD-Eora GVC database. This chapter finds that exchange rate volatility does not affect the gross exports but does affect the value-added exports negatively and significantly. This implies that value-added exports are more sensitive to exchange rate volatility as compared to gross exports for this particular sample of countries. As value-added measures of trade are generally a better indicator for the impacts of trade on a country's job creation/destruction, these findings suggest that policymakers should monitor change in value-added trade more closely when considering the effects on XR volatility on their countries.

Chapter 2 examines the link between exchange rates and exports in the presence of global value chains for the case of emerging countries by using aggregate as well as disaggregated sectoral data of bilateral exports. This chapter makes use of bilateral trade data from the WTO-OECD ICIO (Inter Country Input Output) tables from 1995 to 2011. By using a panel gravity model, he finds that participation in GVCs dampens the exchange rate elasticity of total exports and manufacturing exports by 31% and 34%, respectively. Interestingly, and perhaps the most novel result, though the service sectors' participation in GVCs has been increasing over time, this has not seemed to dampen the XR elasticity for trade in service exports.

Chapter 3 estimates the exchange rate and income elasticities of value-added exports as well as traditional measures of gross exports for eight East Asian (not Japan) emerging countries using bilateral trade data from the Trade in Value Added (TiVA) database. In contrast to Ceglowski (RIE, 2019), who found very little difference in elasticities using either gross or value exports between the US and other OECD countries, he finds mixed results across his "Factory Asia" sample of eight nations. Thus, while the main conclusion of Ceglowski may hold for US bilateral trade pairs, this does not hold for Asia. This may be due to the large presence of global value chains in Asia.

本論文の評価

The first chapter has already been published in the Yokohama Journal of Social Sciences, Volume-24, Number 2, September 2019. He is now preparing the second and third chapters for submission to an international journal. All three essays make significant contributions to the trade in value-added literature.

以上のことから、本論文審査員一同は、本学府の博士号審査基準 1 に照らして Faruq Md. Omor 氏の学位請求論文"Three Essays on Exchange Rates, Trade and Global Value Chains"が博士（経済学）の学位を授与するに値するものと判断する。