Chapter 1

Introduction and Overview

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May 2012

This chapter should be cited as
Hahn, C.H. and D. A. Narjoko (2012), ‘Introduction and Overview’, in Hahn, C. H. And D. A. Narjoko (eds.), *Dynamics of Firm Selection Process in Globalized Economies*. ERIA Research Project Report 2011, no.3, pp.1-12. Available at: http:/www.eria.org/RPR_FY2011_No.3_Chapter_1.pdf

CHAPTER 1

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1. Background and Objective

This report consists of the nine papers that were submitted to the ERIA's research project "Dynamics of Firm Selection Process in Globalization" in fiscal year 2010. This project aims to examine firm- or plant-level adjustments in response to globalization, or trade and investment liberalization, utilizing micro data on seven East Asian countries. As in the previous microdata projects carried by out ERIA since 2008, the primary goal of this project is to enhance our understanding of the various dimensions of the causes, as well as the consequences, of the international trade and investment flows. It is our view that a better understanding of these issues is important not only for maintaining the current momentum toward a closer economic integration among countries but also for strengthening its linkage with economic growth and development of each country.

Since the 1990s, research in international trade has shifted its focus from country- or industry-level analysis to firm- or product-level analysis, and the accumulation of both theoretical and empirical research along the latter line has provided us with new insights into the causes and consequences of the aggregate trade and investment flows. This shift was first triggered by some new empirical regularities put forward by several pioneering studies[1], which could not be reconciled with traditional Hecscher-Ohlin theories or the new trade theories based on monopolistic competition and horizontally-differentiated products. For example, there were tremendous amounts of heterogeneity among firms or plants in productivity and other characteristics, even within narrowly-defined industries. Firms engaged in international trade were found to be superior to domestically-oriented firms in terms of productivity and many other economic performance measures. Furthermore, some of the important phenomenon at the aggregate level, such as rising disparity between skilled and unskilled workers, were found to be associated with between-plant reallocation of resources, and these between-plant reallocation was associated with international trade (Bernard & Jensen 1995 and 1999).

[1] Pioneering research in this regard includes Bernard & Jensen (1995, 1999).

Motivated by the above empirical findings as well as the earlier research on industry dynamics that emphasized the important role of resource reallocation in the aggregate productivity growth, Melitz (2003) theoretically showed that trade liberalization can improve aggregate productivity by triggering selection and reallocation among heterogeneous firms even when firm-level productivity is fixed. Taking the implications of the Metitz' paper as a theoretical framework, various authors further examined micro data and came up with new empirical findings, which further fueled back into the efforts to extend theoretically original Melitz' paper along various dimensions.

Bernard *et al.* (2011) review the development of empirical research on topics, such as extensive and intensive margin of trade, multi-product firms, firm-importing, product quality, trade intermediaries, foreign direct investment, intra-firm trade, labor markets, and firm export market dynamics. They summarize what these new empirical literature have found as well as what important, remaining issues are as follows.

> *"… Aggregate economic relationships such as the gravity equation are largely driven by the extensive margins of firm and products rather than the intensive margin of average exports per firm-product. Reductions in trade costs induce endogenous changes in internal firm organization as firms adjust their range of products, their decisions about whether to serve foreign markets through trade or overseas production, and their choices about whether to organize foreign production within or beyond the boundaries of the firm. To the extent that wages vary with firm revenue and only some firms export, firm heterogeneity provides a new mechanism for trade to affect wage inequality.*
>
> *… There remain many fundamental issues ahead, such as the microfoundations of trade costs, further exploration of the boundaries of the firm, and further consideration of the relationship between findings from disaggregated data and the economy's aggregate response to trade." (Bernard et al. 2011. p. 25)*

Against this backdrop, this report is a contribution to this growing literature based on experiences of seven East Asian countries: Japan, China, Korea, Indonesia, Malaysia, Philippines, and Vietnam. Analyses based on East Asia experience on the causes and consequences of trade and investment might be particularly revealing, not only because East Asia is a region that was most successful in terms of economic growth and development, but also because the process of economic integration within East Asian region and between East Asia and other regions have been one of the most rapid for the past decades. Furthermore, the diversity of countries included in this reports particularly in terms of the level of development allows us to examine and understand issues from both developing and developed country's perspectives.

The topics addressed in each paper are diverse, but all papers try to empirically assess the causes and/or the effects of international trade and investment and clarify the adjustment mechanism of firms or plants along various dimensions. While some papers employ explicit measures of trade liberalization policies and others leave these aspects in the background, the results from all papers are appropriate for understanding the causes and/or the effects of trade and investment liberalization. We believe that while all papers are addressing new issues at least in the context of each country, some papers are probably one of the early attempts to examine the issue from a global perspective.

Below, we provide a synopsis of what follows and summarize main policy implications that arise out of this report.

2. Summary of Country Studies

We classify the nine papers into the following three groups: 1) *Export Market Dynamics, Finance, and Intermediaries*, 2) *FDI Spillovers and Adjustment of Production Network*, and 3) *Plant Exit, Mark-up and Labor Market*.

2.1. Export Market Dynamics, Finance, and Intermediaries

The first two chapters examine export market dynamics focusing on the role of finance. Recent studies based on transaction-level customs data often matched with firm-level data have found an important role of the extensive margins of trade in explaining aggregate trade pattern: the cross-sectional variation in bilateral trade flows or the long run changes in aggregate trade over time. Meanwhile, the contraction of trade credit in many countries was believed to be one of the main reasons for the collapse of global trade flows in the aftermath of the recent global financial crisis. Against this background, there has been a growing attention to the potential role of finance in explaining the variations or changes in the aggregate trade flow.

Tang and Zhang's paper, "Exporting Behavior and Financial Constraint of Chinese Firms" examines the role of financial constraint in explaining changes in extensive margins of trade, by matching the firm-level dataset and the HS 8-digit level customs datasets. If there are various fixed costs involved to enter export market, financial constraint could matter for changes in firm-product-country extensive margins. They find that financial constraints, proxied by liquidity and leverage ratios, do matter for firm's export participation and country extensive margin, but not for product extensive margin. The results are indicative of the existence of distinct fixed costs at various margins, although the authors do not provide a detailed discussion in this regard. However, as the authors argue, a better understanding of the linkage between extensive margins of trade and financial constraint improves our knowledge on how the aggregate economy responds to trade liberalization or other macroeconomic shocks, contributing to a better policy response to such events or shocks.

Inui, Ito, Miyakawa, and Shoji's paper, "Export Dynamics and Information Spillovers through the Main Bank", also examines the linkage between finance and export market dynamics (i.e., changes in extensive and intensive margins of exports). However, they focus on a somewhat new aspect of the role of finance: information provision role of banks. The authors' view is that in the case of Japanese main bank system, banks not only perform a loan-provision role but also an information-provision role. They explain the incentive of Japanese lender banks to provide information to client firms. In so far as the Japanese main banks can work as a conduit of information related to export markets, banks' previous exposure to client's export markets is possibly related to the changes in various margins of trade.

Consistent with this hypothesis, they find that the measure of bank's information on export market is positively related to firm's export participation. However, they do not find a clear evidence that such information has a positive effect on the intensive margins. These results suggest that bank's information provision to client firms probably reduces the fixed cost of export market entry. Based on these results, the authors argue that it may be effective to involve banks in the export promotion campaigns or business matching events supported by the Japanese government.

Chuc, Anh, Anh, and Mai's paper, "Innovation and Choice of Exporting Modes under Globalization", examines the export mode choice (direct versus indirect exporting) as well as export participation, utilizing Vietnam's firm level panel data. For many developing countries including Vietnam, how to make SMEs participate in exporting is an important issue. In the literature, it has been reported that trade intermediaries play an important role in export market participation particularly for developing countries. Empirical examination of firms' choice between direct and indirect exporting shed light on this issue. In the descriptive analysis of their paper, the authors report several interesting findings. First, there is a significant share of indirect exporters among Vietnamese SME exporters although the share of direct exporters are the largest. Second, firms tend to make a transition from indirect to direct exporters over time, rather than the other way around. Third, firms that choose direct exporting tend to use imported materials and equipment more frequently and employ more skilled workers. Finally, exporters in general and direct exporters in particular face more difficulties in credit access. The authors provide various policy suggestions to promote SME export participation.

2.2. FDI Spillovers and Adjustment of Production Network

For many developing countries, attracting FDI has always been a key policy agenda. Accordingly, many Asian developing countries liberalized their foreign investment regime and used various "carrots". One key rationale for the existence of such carrots was that FDI has a positive spillover effects. A large amount of literature has found evidence in favor of the backward spillovers, but evidence in favor of the forward spillovers is scarce. Under this context, Takii and Narjoko's paper, “FDI Forward Linkage Effect and Local Input Procurement”, examines whether FDI has forward spillover effects and whether these effects are stronger for firms at the downstream that source input locally. Underlying this analysis is the presumption that foreign firms operating locally produce higher-quality, lower-cost inputs than imported inputs, and/or increase the availability of inputs. Under these conditions, the downstream firms that source inputs locally are more likely to benefit from them. Utilizing Indonesian plant-level dataset, the authors find evidence supportive of their hypothesis. In addition, the authors find a strong evidence for a backward spillover effects.

Hayakawa and Matsuura’s paper, “Interdependence in Multinational Production Networks: Evidence from Exit of Overseas Affiliates”, examines Japanese MNE’s decision to shut down their overseas affiliates. As well known, international production networks by multinational corporations have rapidly been formed for the past two decades or so, including those by large Japanese corporations in East Asian countries. A growing attention is paid to the issue of what role the global or regional production networks play in influencing the response of an economy to the macroeconomic shocks or trade liberalization. The distinctive and important role of international production networks has been often supported by many empirical studies which find that intra-firm trade accounts for a large and growing share of trade and that these types of trade flows are more resilient to macroeconomic shocks, such as the recent global financial crisis. The key finding in this paper is that MNEs are more likely to shut down affiliates which could potentially be more easily replaced by other affiliates. One implication from this study is that a consolidation of MNE’s affiliates is expected as countries’ markets are more integrated with each other.

2.3. Plant Exit, Mark-up, and Labor Market

Trade liberalization has differential effects on firms. As shown in Melitz (2003), trade liberalization creates winners and losers. The winners are current exporters and highly productive non-exporters, and the losers are least productive non-exporters. This reallocation process following trade liberalization brings about aggregate improvement in productivity. Aldaba's paper, "Surviving Trade Liberalization in Philippine Manufacturing", takes Melitz's paper as a broad theoretical framework and empirically examines one aspect of Melitz' theoretical prediction: the effect of the changes in actual trade policy measures on firm exits. As measures of trade policy, she uses MFN tariff rates, effective measures of protection, and ASEAN tariff rates. She finds that trade liberalization has a differential effects on firm exit probability depending on the level of productivity, which is broadly consistent with the theoretical prediction.

Lee and Choi's paper, "Export Intensity, Markup and Productivity: Micro-evidence from the Korean Manufacturing", examines the effect of exporting on markup and TFP. A particular attention is given to the effect of export intensity rather than export participation. Utilizing a generalized propensity score matching methodology, the authors find that the pro-competitive effect and the productivity-enhancing effect from exporting are found for a subset of firms. In particular, they find an inversely U-shaped relationship between export intensity on the one hand and markup and TFP on the other. Based on these results, the authors questions the plausibility of the hypothesis that exporters with higher export intensity experiences faster productivity growth than exporters with lower export intensity.

Hahn and Park's paper, "Skill Upgrading, Technology Choice, and the Role of Exporting in Korean Manufacturing Sector", examines the effects of exporting as well as R&D on the within-firm skill intensity utilizing plant-level data. While the causes of the rising disparity between skilled and unskilled workers in terms of wages and employment has traditionally been attributed to skill-biased technical progress rather than trade, a growing attention is paid to the possibility that trade and skill-biased technical progress are not competing, but complementary explanations for the growing labor market disparity. The authors show that during the 1990s both exporting and R&D contributed to within-plant skill upgrading. They further show that there exists a bi-directional causal relationship between exporting and R&D particularly at their extensive margins.

Finally, Lee's paper, "Exporting, Productivity, Innovation and Organization: Evidence from Malaysian Manufacturing", examines various relationships exiting among exporting, productivity, innovation, and measures of organization. He finds evidence that exporting causes innovation: process innovation in particular. In addition, he also finds evidence indicating that there are organizational changes, such as decentralized decision making, associated with exporting.

3. Implications for Policy

The results of the studies provide useful input for policy makers. In general, what seems to have emerged from these studies is a direction of policies that is able to give just a ‘right’ balance between, first, policies to maximize the benefit from liberalization in trade and investment regime and, second, policies to minimize the adverse impact from the losers of the more opened economy. The studies conducted in this project also highlight the importance to focus on detailed and targeted policies, either those of services sectors or those which are rather specifically targeted to a group of firms. The following elaborate the more detailed policy suggestions coming out from the results of the studies.

First, it is important to develop financial sector, at the same time when a country liberalize its investment and trade regime. This is especially for banking sector, for the role it plays as a financial intermediary to support export. Tang and Zhang (Chapter 2) found the dependency of exporters in China to increase their exporting country destinations. Tang and Zhang further suggest that re-examination of the functions of banks to support exports is needed, for the reason that many ‘capable’ firms (i.e., high productivity firms) are not able to export simply because they do not have sufficient funds to pay the (expensive) upfront fixed cost for exporting. This seems to be a general basic, not only in China as Tang and Zhang report it, but also in Japan as reported by Inui et al. (Chapter 3). The main topic and results of the study by Inui et al. suggests that banks could play more important role rather than just institutions of financial intermediary; banks could also be a conduit of information about export markets. Policy implication from this is clear, that is, governments need to take banks on board to its export promotion policy. Further, and this supports the idea of realigning the function of banks to be the intermediaries of exporters, Inui *et al*. suggest that banks need to put more efforts in supporting services for the firms that are capable to export.

The idea to steer banks, or other financial institutions, to support firms to export is warranted for the reason that it is very expensive for a firm to start its export. Furthermore, and perhaps more importantly, much of this expensive cost is due to information asymmetry associated with uncertainty about costs and profitability from exporting (Greenaway and Kneller 2004). In other words, some realignment in the functions of banks or other financial institutions to support export can be put in the perspective to reduce the information asymmetry. More support for this policy is given by findings of the other chapters in this project. Lee and Choi in Chapter 8 find the cost to export is expensive not only because of some exporting fixed-cost component a company has to pay, but also because of high coordination and control costs. Meanwhile, and as summarized earlier, Nguyen et al. (Chapter 4) highlight the large extent of the information asymmetry by their finding that SMEs in Vietnam firstly use the services of other firms to indirectly export before switching to be direct exporters after a couple of years.

Second, it is also important to keep promoting policy to encourage export, for the reason it facilitates firms to increase their productivity. Hahn and Park in Chapter 9 demonstrate this. They find that exporting firms experience much faster skill upgrading than non-exporters and this process is accelerated when the firms' export participation is accompanied by more intensive innovation activities.

Third, policy to invite foreign direct investment (FDI) could be designed to be rather specifically, with an intention to tackle some unique or narrowly targeted objective. This is inferred by the results of the studies conducted by Takii and Narjoko (Chapter 5) and Hayakawa and Matsuura (Chapter 6). Takii and Narjoko suggest a FDI policy approach that specifically target firms in upstream industries. As summarized, this is based on their finding of FDI spillover through forward linkages that gives more availability of high quality inputs locally, which in turn helps local firms to procured these inputs at much lower costs. Based on their findings on the pattern and determinants of the disappearance of Japanese firms' affiliates, Hayakawa and Matsuura indicate that a country should encourage the creation of more industrial agglomerations in order to increase the survival chance of affiliates in setting of regional production networks.

Fourth, clear and measured strategies, or policies, are needed to mitigate the adverse impact of trade and liberalization. Policy makers, in practice, tend to focus on policy actions to protect the loser of the adverse impact. However, what seems to have appeared from the experience of many countries indicate that policy to ‘protect’ the loser tend to be unfavorable for the welfare of the whole economy, that is, very costly, often prolong the adjustment period, and distort competition (Noland & Peck 2003). At the same time, many studies suggest that the benefit of liberalization usually occur only in medium or longer term. Evidence confirms this, where policies are better directed at facilitating adjustments, especially adjustments in labor market, and addressing information asymmetry as well as market entry that may inhibit the creation of new firms and growth (Hoekman & Javorcik 2004). Policy suggestions coming out from some studies in this project are either reflect this policy this framework and therefore suggest policies to be clearly defined and targeted in order to mitigate the adverse impact of the liberalization.

Aldaba in Chapter 7 suggests that policy need to enhance productivity and to foster domestic firms to have a link with foreign firms. In the context of her study, this implies that government should not protect firms that have low productivity from disappearing/going bankrupt. How to match local to foreign firms to form joint-venture firms are also implied, as one way to increase productivity and hence, survival. In Chapter 9, based on their findings that the skill upgrading because of firm’s export activities benefit more the skill workers rather the unskilled ones, Hahn and Park support the what so-called trade adjustment assistance (TAA). Hahn and Park, however, suggest a modification of traditional TAA in which it needs to take individual worker as the target and the basic unit of the TAA program. This is for the reason that, as they also find in their studies, trade liberalization may cause different impact even among the winners (i.e., exporters), which is not suitable with the traditional TAA program that is usually designed to be triggered by an adverse impact in output of the affected firm.

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