Chapter 1

Introduction and Overview

Chin Hee Hahn
Gachon University, Seoul, South Korea

Dionisius Narjoko
Economic Research Institute for ASEAN and East Asia (ERIA)

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CHAPTER 1

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CHIN HEE HAHN

Gachon University

DIONISIUS NARJOKO

Economic Research Institute for ASEAN and East Asia (ERIA)

1. Background and Objective

The objective of this report is to examine, utilizing firm- or plant-level micro data, the labor market effects of globalization and the mechanisms by which they operate, with a particular focus on the distributional effects of globalization. Specifically, this report aims to examine the effects of globalization—trade and foreign direct investment (FDI) liberalization, trade (exports and imports), international capital flows, outsourcing and traded intermediate goods—on labor market outcomes: wages and employment of firms as well as volatility and dispersion of wages. This report is the outcome of the ERIA research project *Impact of Globalization on Labor Market* done in Fiscal Year 2012, which was launched as part of a series of micro-data studies of globalization by ERIA started in 2008. Under this project, eight studies were conducted for eight countries in the Asia-Pacific region: Australia, Indonesia, Japan, Korea, Malaysia, the Philippines, Thailand, and Viet Nam.

As it is well understood, two notable and important economic trends have emerged during the past few decades. First, globalization has proceeded rapidly. Developing countries, in particular, have been increasingly exposed to international markets, resulting mainly from trade and FDI liberalization policies, deregulation, and technological progress, all of which contributed to a reduction in transaction cost in international economic activities. East Asia has been particularly noticeable in this regard. East Asian countries have been most rapidly integrated within the region as well as with the rest of the world through more liberalized trade and investment regime and also through increased trade and investment flows. Another trend is that in many middle- and high-income countries, wage and/or income inequality has also risen (Goldberg and Pavcnik 2007, IMF 2007). Did globalization cause the wage and income inequality to rise? If so, what are the mechanisms? If not, why? Do country specifics determine the effect of globalization on wage and income inequality? Are there any general lessons that we can draw from country experiences? What policies are needed to have the benefits of globalization more equally shared among economic agents and, hence, make the process of globalization contribute to economic growth and development on a more sustainable basis? These are the questions that run through this report.

Whether and how the wage inequality between skilled and unskilled workers is affected by globalization is a long-standing debated issue in international economics. The debate has been most active in the context of developed countries such as the United .States (US) where the relative wages of unskilled workers have secularly declined since the 1980s. Two competing explanations have been put forward as a cause for this phenomenon: trade and skill-biased technological progress. According to the standard Heckscher-Ohlin theory and its companion Stolpher-Samuelson theorem, international trade is expected to increase the relative wages of the skilled workers in a skill-abundant country while decreasing it in a skill-scarce country. So, the US as a skill-abundant country could be expected to experience a rise in skilled-unskilled worker wage inequality as a result of increased trade. An alternative explanation is that the rapid spread of computers and other information and communication technologies, which increased the relative demand for skilled workers in almost every industry, is the main cause. This latter view received wide support from many empirical studies which were conducted mostly in the 1990s based on industry-level data. The general consensus from early studies was that skill-biased technological progress, rather than trade, is the principal cause for the increase in wage inequality.

In fact, it may be more accurate to say that what was not widely accepted is the view that trade caused the observed rise in skilled-unskilled wage inequality *in the way the Heckscher-Ohlin theory predicted*. That is, there are important observations and results from empirical analyses which sit awkwardly with the predictions and assumptions of the Heckscher-Ohlin theory. First, while the H-O theory predicts that trade liberalization increases the wage inequality in skill-abundant developed countries and decreases it in skill-scarce developing countries, wage inequality rose not only in developed countries but also in many middle-income developing countries. Second, while the H-O theory predicts that the aggregate increase in the relative employment of the skilled workers occurs through the resource reallocation across industries, from low- to high-skill-intensity industries, most empirical studies have found instead that the within-industry increase in the relative employment of the skilled workers accounts for most of the aggregate increase in the skilled workers' relative employment. Finally, although the Heckscher-Ohlin theory is based on the assumption of free labor mobility across industries, many empirical studies found that the inter-industry labor mobility following trade liberalization is very limited.

We think that our understanding of whether and how globalization affects wage and income inequality remains far from being satisfactory. There are several specific reasons on why we think a further scrutiny of these issues is warranted, particularly for countries in East Asia. First, new theoretical frameworks such as heterogeneous firm trade theories, together with the increased availability of firm-, plant-, or even product-level datasets, allow us to conduct in-depth analyses of these issues. As surveyed by Goldberg and Pavcnik (2007), more recent studies begin to reveal new mechanisms by which globalization affects wage inequality. There could be interactions between trade and skill-biased technological progress, trade-induced compositional change in firm's product portfolio, and complementarity between imported capital goods and skilled workers. To the extent that these mechanisms are important in reality, trade should be viewed as complementary to, rather than competing with, skill-biased technological progress in accounting for the observed rise in wage inequality. Second, outsourcing and trade in intermediate goods have expanded over the past two decades. This trend has been most noticeable in East Asia. As shown by Feenstra (1996, 1999), international outsourcing can raise wage inequality not only in outsourcing developed countries but also in "outsourced" developing countries. Third, previous studies on ERIA member countries, particularly on East Asian countries, are relatively scarce. Most of the available studies are on developed countries or on several middle-income countries in Latin America. Furthermore, since East Asia consists of various countries ranging from skill-scarce, low-income, outsourced countries to skill-abundant, high-income, outsourcing countries, East Asia provides an excellent case for a set of country studies.

Although the primary focus of this report is on the effect of globalization on wage inequality among workers, assessing other distributional effects, broadly defined, of globalization is also within the scope of this report. One issue that is addressed in this report is the effect of globalization on wage inequality between firms. Helpman, *et al.* (2010) show that when trade raises wage inequality among firms through revenue reallocations across firms, it also raises wage inequality among workers in a class of models which satisfy certain properties. In this regard, the effect on wage inequality across firms could be a new channel by which globalization affects wage inequality among workers. In some countries, the wage inequality among firms, particularly between small and large firms, is *per se* a socio-political issue. Another issue is the effect of globalization on individual labor income risk. This is a topic for which existing studies are relatively scarce. If globalization increases wage volatility, it also serves as a new channel by which globalization affects welfare of domestic workers. Finally, in some country context, such as Japan and Korea, there is a concern that firms' overseas activities, though they may be beneficial by themselves, may not benefit domestic firms that are often small and supplying parts and components to globally engaged firms. This is probably one of the highlighted issues in policy discussions for which existing empirical research is most scant.

The rest of this chapter provides a synopsis of what follows and summarizes main policy implications that arise out of this report.

2. Summary of Country Studies

Hahn and Choi's paper examines the effects of output and input tariff reductions on within-plant wage skill premium in Korean manufacturing plants. They find evidence that output tariff reduction interacts differently with plants' R&D and investment behaviors, respectively, to affect wage skill premium. More specifically, output tariff reduction increases wage skill premium mostly in R&D-performing plants while reducing it mostly in plants making positive facility investments. While there is weak evidence that input tariff reduction increases wage skill premium, no such interactive effects are found. One story behind the results is that although both R&D and facility investments may respond to changes in profit opportunities due to output tariff reductions, R&D raises the relative demand for the skilled workers while facility investment, an activity of increasing production capacity, raises the relative demand for the unskilled (production) workers.

The results found in this study suggest that trade liberalization brings about not only benefits but also costs: increased disparity between skilled and unskilled workers in the labor market outcomes. The authors argue that a country liberalizing its trade should also consider strengthening general social protection scheme in order to make the benefits from liberalized trade more equally shared among economic agents. They go on further and argue that, although strengthening the general social protection scheme is considered to be a better approach than strengthening the trade adjustment assistance (TAA) program, which targets only displaced workers by free trade agreement (FTA)-related increased import competition, the relationship between TAA and general social protection scheme should be more carefully examined and discussed. Another point the authors make based on the study is that we can maximize the benefits from trade liberalization and make them more politically supported when trade liberalization is pursued as part of a broader growth strategy. Given the interdependence of trade, innovation, and income distribution, as shown in this study, key elements of such growth strategy should at least include trade policy, innovation policy and redistribution policies. Establishing an effective policy governance scheme for such a strategy is likely to be an important issue.

Using establishment data of medium and large Indonesian manufacturing, Takii and Narjoko examine how greater exposure to international trade and foreign direct investment affects the extent of skill premium in wage and a firm's employment intensity. Takii and Narjoko used recent data, i.e., for the period 2000-2008, to capture the more open trade and investment in the country for the post-1997/98 Asian financial crisis period. The descriptive of their paper says that over this period, on average for the whole manufacturing, there is a declining pattern in the relative (skilled to unskilled) wage with a slight increase in the trend of skilled employment. Moreover, by comparing the descriptive statistics between different groups of plants, Takii and Narjoko find that plants involved with international trade and/or with foreign ownership pay higher wage to their skilled workers and employ more of these workers compared to local and domestic-oriented plants.

The econometric estimations of Takii and Narjoko find that tariff cut for the group of intermediate inputs in Indonesian manufacturing significantly reduced statistically the extent of relative wage for the period 2000-08. This confirms the earlier finding by Amiti and Cameron (2012) who also examined the impact of tariff cut on relative wage in the industry using 1990s data. This means the gap in the wage of skilled and unskilled workers in the industry has narrowed over time, which is consistent with traditional trade theory which predicts that liberalization will reduce the relative demand for skilled workers in a less-skilled worker abundant economy.

Takii and Narjoko also find an interesting pattern (relationship) suggesting that the tariff cut has made local plants with low share of imported input as well as non-importing plants hire more skilled workers. A possible explanation for this is that it is a result of an efficiency measure adopted by the plants in response to more pressure from foreign competition. The declining trend in the relative wage has made it easier for these plants to hire more skilled workers.

Aldaba's paper examines how openness to trade affects wage skill premium within firms in the Philippine manufacturing sector. As measures of openness, she considers industry-level trade policy variables—effective protection rate (EPR), output and input applied MFN tariff rate, and ASEAN CEPT tariff rate—as well as the firm-level export share. She first starts by showing that the wage skill premium in the aggregate manufacturing sector has been declining for the past decades. The main empirical results of her econometric analyses are as follows. Foremost, trade liberalization, as measured by the reduction of EPR, decreases the wage premium. Her interpretation of this result is that in the face of more intense foreign competition due to trade liberalization, an import-substituting firm may decide to concentrate on the low value added stage of the production process, which requires relatively less skilled workers. She finds qualitatively similar results when she uses ASEAN tariff rate as a trade policy measure. However, she finds a rather contrasting result that the reductions in ASEAN tariff rates are associated with increases in wage skill premium in skill intensive firms.

Based on the results, Aldaba emphasizes the need to transform and upgrade manufacturing and shift toward more diversified and sophisticated export products, which would require climbing the industrial ladder and moving into higher value added sectors as sources of production advance. To drive the demand for skilled labor and skill intensive manufacturing processes, she argues that technological upgrading, along with further upgrading of education levels, promoting productivity growth, and increasing technological capability, would be required.

Thangavelu's paper examines the impact of trade and technology on the wage gap of skilled and unskilled workers, utilizing a firm-level dataset for the Vietnamese manufacturing sector. It is found that trade tends to have skill-biased effects in terms of increasing the returns of skilled workers relative to unskilled workers. It is also found that firms that adopt new technologies and restructure their organization are likely to experience an increase in the wage gap between skilled and unskilled workers. He goes on to examine whether skill-biased technological changes are induced by globalization and finds some evidence consistent with this hypothesis. That is, he finds that firms that are part of international production networks are likely to undertake more restructuring.

Based on the results, the author also suggests that government has an important role in managing the negative effects of globalization without sacrificing its positive effects. In this regard, the author emphasizes general human capital development as well as training and skill-upgrading programs, to be crucial in moving unskilled workers displaced by technological changes and globalization to more productive sectors in the economy.

Kohpaiboon and Jongwanich's paper examines, using firm level data from Thai manufacturing, the effects of both the engagement with global production networks and the reductions in tariffs on wage skill premium within firms. They particularly focus on the effects of engagement with global production networks by arguing that there is growing concern among developing countries' policymakers that participating in global production sharing could make their enterprises trapped in low-skilled or low quality workers and retard technological advancement. They find that the engagement with global production networks increases wage skill premium in skill-intensive firms. With regard to the effect of tariff reduction, they find that output tariff reduction reduces wage skill premium within firms.

Based on the results, the authors argue that being a part of the global production sharing can bring in various benefits which include not only technological improvement but also the opportunity of moving up to more skill intensive activities. The authors emphasize, however, that this opportunity may not be available to those firms that are less skill-intensive. The authors suggest that policy focus should be on providing adequate and qualified skilled workers supply to allow firms to benefit from the global production sharing.

Palangkaraya's paper aims to contribute to a better understanding of the effects of globalization on domestic economic performance by considering a less frequently investigated channel through which globalization may affect the welfare in the domestic economy. Specifically, he estimates the effect of the domestic economy's exposure to international competition on individual labor income risk in Australia. In theory, globalization may result in domestic workers facing higher economic uncertainty and income and, therefore, experiencing a reduction in their welfare even if it does not reduce average income. If such welfare reducing effect from increased income risk due to globalization is significant and if it is not recognized in the policy making process, the resulting domestic policy response to globalization may be sub-optimal. He finds statistically and economically significant evidence that increased import penetration is associated with increased permanent income risk. The effects appeared to be stronger in manufacturing than in services. However, the evidence is mixed for transitory shocks.

Based on the results, the author emphasizes the need for taking the above negative impacts into account in formulating trade liberalization strategies. The author suggests specifically that it is important to make sure that there exist institutional mechanisms which can mitigate possible adverse income shocks and, hence, help achieve a fast and smooth labor reallocation process in the process of trade liberalization.

Lee's study empirically examines how various aspects of globalization— exporting, employment of foreign workers, foreign ownership, and trade liberalization— affect wage inequality, both between and within firms, using three firm-level datasets from the Malaysian manufacturing sector. This topic is of particular importance for Malaysia given the country's export-oriented development strategies and its continued reliance on foreign labor. Regarding the effect on between-firm wage inequality, he first finds some, albeit relatively weak, evidence that firms that export pay higher wages than non-exporter firms, consistent with many previous studies. He also finds that firms that employ a higher share of foreign workers pay lower wages and that trade liberalization has a weak, but positive, effect on wage levels. Regarding the effect on within-firm wage skill premium, the results vary depending on how skilled and unskilled workers are measured. Among others, he finds evidence that trade liberalization raises the wages of management workers relative to skilled or unskilled production workers.

The author notes that the Malaysian government has been very interested in undertaking reforms in the labor market to upgrade the skill profile of the labor force, and explains that the implementation of minimum wage, which changes the incentives to use high skilled workers, is one such policy. He argues that this policy will work only if the country reduces the employment of foreign workers especially those in the skilled production category and that the key policy challenge is on how to enhance exporting via trade liberalization without dependence on foreign workers.

Ito and Tanaka's paper focuses on non-internationalized supplier firms and investigates how the expansion of overseas activities by their main customer firms impacts on the supplier firms' employment, utilizing a unique dataset that includes information on buyer-supplier transaction relationships for Japanese manufacturing firms for the period 1998-2007. Although a considerable number of empirical studies based on a matched dataset of parent firms and their affiliates overseas find no evidence that the expansion of overseas operations reduces the multinational enterprises (MNEs)' home employment, these studies do not consider the effect that the expansion of the overseas operations of MNEs has, on other hand, non-internationalized firms. The authors do not find any negative effects of top buyers' overseas expansion on domestic supplier's employment; they find a significantly positive effect instead. In other words, contrary to fears of a potential hollowing out of domestic supporting industries, the evidence suggests that domestic suppliers may increase their employment if their main customers are successful in foreign markets and increase foreign activities.

Based on the results, the authors argue that overseas expansion itself should not be criticized but promoted through policy support. The authors emphasize in particular the need for government policies which support domestic supplier firms' efforts to establish a new transaction relationship with the "good" downstream multinational firms.

3. Implications for Policy

As indicated in the beginning, this project aims to examine the impact of policies toward globalization, i.e., trade and investment liberalization, on labor market and the mechanism by which they operate. Many of the studies provide interesting results; one of which is that the impact on labor market cannot be separated from the impact on the other aspects. What seems to be clear from these studies is that policies promoting globalization are beneficial to firms and the economy in terms of technology adoption and knowledge accumulation. There is evidence that trade and investment liberalization encourages investment in more advanced technology which, in the long term, will increase knowledge accumulation and hence improve productivity.

The positive impact on technology upgrading and knowledge accumulation, however, turns out to be not without a cost. As many of the studies highlight, the impact on the outcome of labor market is not always positive. The gap between skilled and unskilled workers tends to widen in firms that upgrade technology capability as the demand for skilled workers increases. Also, as in the Australian case, globalization has proven to increase the risk of expected income in the future. The skilled-unskilled wage gap could be further widened because, at the same time, not all firms respond to liberalization by upgrading their technology capability; some of them choose to continue producing low-end products which sustains the high demand for unskilled workers.

The challenge in terms of policy therefore is to have the right balance to manage all sorts of these impacts of globalization. Ideally, liberalization helps a country, or firms in the country, to upgrade its technology capability and to accumulate knowledge but, at the same time, other policies need to be in place to neutralize the potentially adverse effect on the labor market. On the latter, two policy options are suggested by the studies in this project. First, improving policies to develop human capital through training and skills upgrading programs is important. This will increase the pool of skilled workers in a country, thereby making their hiring cheaper. Overall, this will facilitate technology upgrading by firms which choose to do so. This policy could also encourage other firms not to stay at producing low-end products.

Second, strengthening the general social protection scheme, instead of having globalization-specific adjustment assistance, needs to be considered. Strengthening social protection is important because it is not always clear what groups of workers are adversely affected. At the same time, globalization evidently also changes the expected risk of income in the future; therefore, complexity of these two factors demands a more general approach instead of the specific globalization adjustment program such as trade adjustment assistance (TAA), which targets only the displaced workers by FTA-related import penetration.

Applying these policies in a country however is not always clear-cut, the reason being that the mechanics of how globalization affects firms and the labor market could be different from country to country. Studies in this project suggest that it depends at least on three factors: (i) the state of industrialization or general level of technology adoption in a country, (ii) the current state of labor market, and (c) the current state of education or human capital development. As in the more advanced countries such as South Korea, for example, strengthening the general social protection scheme could be given a higher weight because the level of technology adoption in this country is relatively higher than in the other Asian countries. In developing countries such as Indonesia or Viet Nam, on the other hand, putting higher weight in training programs seems to be the more sensible approach since the level of technology adoption in general is low or at best varies tremendously across firms. The policy to neutralize the adverse globalization impact on labor market therefore needs to combine developing human capital and strengthening the social protection scheme albeit with different weights between countries.

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