

Labor and the Globalization of Production

Causes and Consequences of Industrial Upgrading

Edited by

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1

Globalized Production: Structural Challenges for Developing Country Workers

*William Milberg*¹

1 From industrialization to industrial upgrading

According to the standard theory of international trade, trade liberalization will result in the equalization of wages globally (the factor price equalization effect) and a reduction in wage inequality in countries that are abundant in low-skill labor (the Stolper–Samuelson effect). Decades of trade liberalization, and ten years after the formation of a World Trade Organization with liberalization of trade as its main goal, it would appear that neither of these predictions has been borne out.

The theory emphasizes the gains from trade resulting from the efficiency-increasing shifts in the structure of production brought on by trade liberalization. If instead of emphasizing the substitutions of capital and labor as factors of production, we focus on the asymmetry with which these factors enter the global economy – capital significantly mobile internationally and labor only marginally so – then the challenges globalization poses for workers become obvious: the greater international mobility of capital relative to labor puts workers from a given location at an immediate disadvantage, both in terms of bargaining power with owners of capital (whose threats to move gain greater credibility) and with respect to the state (as governments are more able to tax immobile than mobile productive factors). But this perspective – which arguably has led the anti-globalization movement to propose the adoption of controls on international capital movements, international codes of corporate conduct, international labor standards, and reduced barriers to international migration – also does not capture the full picture of the structural challenges facing workers in developing countries in the early twenty-first century.

Historically, economic development has hinged crucially on industrialization, as the transition from agriculture to industry has involved capital

investment, technological progress and growth in labor productivity that have raised living standards. But global changes over the past 25 years – in communications, transportation, technology and, most importantly, corporate strategies and government policies – have greatly changed the terrain on which industrialization occurs. Even as import substitution industrialization strategies gave way to export promotion strategies for many countries in the 1980s, it was not possible at that time to envision just how globalization would alter the conditions necessary for successful industrialization. Export promotion appeared to be consistent with welfare-optimizing economic theory: free trade and comparative advantage would bring benefits from specialization and exchange that were not available under the protected cocoon of import substitution. The key to industrialization, then, would be to gradually shift production (and thus exports) into more capital-intensive sectors which would bring higher productivity and wages.

And export promotion seemed to work, although perhaps in only a few countries and not for the reasons given by many economists. The East Asian “miracle,” that is the relatively rapid industrialization of South Korea, Taiwan, and Hong Kong, eventually brought significant wage gains, a more educated work force, higher labor standards, and political democratization. While there is debate over the conditions that encouraged this wave of industrialization, there is considerable evidence that it occurred with selective government protection from imports and inward foreign direct investment, subsidies for export promotion and, very significantly, regular checks and controls on businesses who often had to meet performance and investment standards to receive continued subsidy or protection.² Openness played a role, but may have been as much the result rather than the cause of economic development.

Can the East Asian miracle be replicated in other countries? There is certainly some evidence that it can – see especially the successes of a second tier of Asian countries, as well as some positive signs from Brazil, Chile, India, Turkey, and others.³ Yet it is also clear that the conditions for such success have changed in a number of ways.

First, past success by some industrializing countries has left less room for success by others. Mayer *et al.* (2002) call it a problem of “fallacy of composition,” in that a few countries may successfully upgrade to higher value-added exports, but if all countries expand in the same sectors simultaneously, many will not succeed and the resulting capacity expansion may dampen prices such that even successful countries will see their revenues lowered. Blecker (2002) describes the problem similarly as “diminishing returns to export-led growth.”

Second, the intensification of the globalization of production, especially since 1980, has changed the structure in which the international division of labor is determined, thus altering the channels through which higher value added can be captured. Globalized production means that industrialization

today is different from the final goods export-led process of just 20 years ago. Now the issue facing firms and even governments is often not simply that of finding new, more capital-intensive goods to sell to consumers in foreign countries. Instead, it seems to require moving up through the chain of production for a particular commodity or set of commodities, so-called "industrial upgrading." This involves fitting into existing corporate strategies and, given the increasingly liberal international trade and investment environment, establishing close ties to a potentially diverse group of leading firms. It is in this context that the battle takes place for more jobs, higher wages and improved work conditions in developing countries.

In this introductory chapter, I first give a brief profile of globalized production. I then consider both technological and social (i.e. economic) explanations of this process, focusing in particular on the degree of competition among firms along global value chains and the concomitant distribution of value added. Finally, I give an overview of the rest of the book. The two central questions addressed in these essays are: How does industrial upgrading occur? And what are the consequences of industrial upgrading efforts for workers? The chapters to follow show that not only are the obstacles to successful industrial upgrading significant and varied, but that the consequences of upgrading efforts are often far from the unambiguous positive effect that the term itself connotes. Countries that promoted low-skill labor-intensive manufacturing (most prominently through the establishment of export processing zones) as a stepping stone to higher value-added activities have often found themselves unable to move up, caught in what Harrison (1994) termed a "low-level equilibrium trap." Mousiolek (2001) reports that during the 1990s, the garment sector in Eastern Europe underwent industrial *downgrading*, whereby full package producers went bankrupt, replaced by low-skill intensive, sweatshop operations serving the major European designers and retailers. Even in successful cases of upgrading, profits may rise without wage increases or some workers may benefit while others lose. The picture is a complicated one, but an informed analysis of globalization can only come from an understanding of the variety in developing countries' experiences.

2 Global production sharing

The most commonly cited indicator of the degree of globalization is the share of trade in output. The trade share has risen steadily for the world as a whole, especially since around 1980, although not as much as Foreign direct investment (Figure 1.1).

But the globalization of production means more than just an increase in the share of the world's output that is traded internationally. Globalized production has also involved a change in the structure of international trade, in particular the growth of trade in intermediate goods, that is, in international outsourcing. Components may be produced in one location,

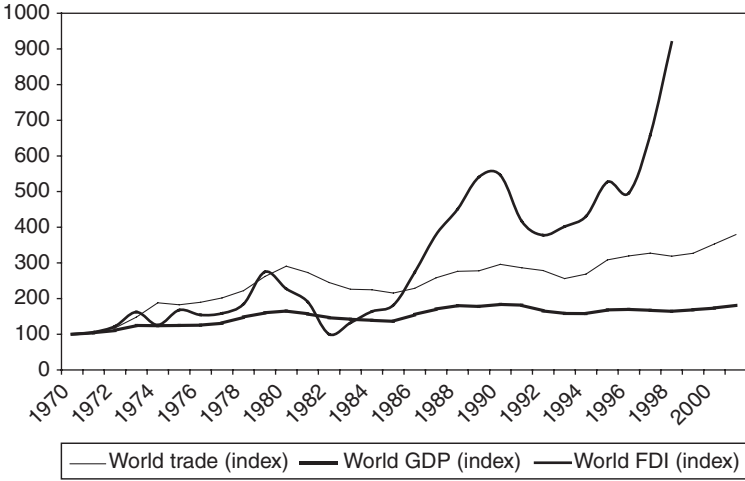


Figure 1.1 World GDP, FDI, and trade, 1970–2001

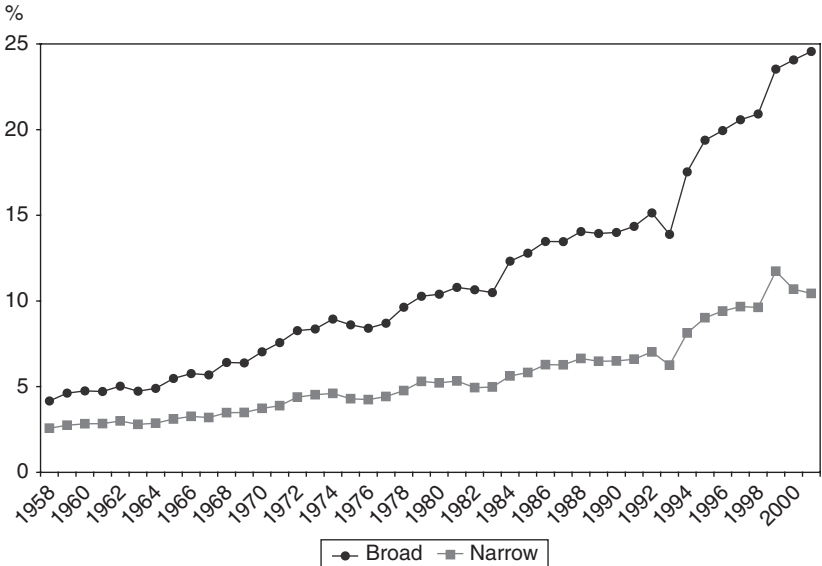


Figure 1.2 Broad and narrow measures of international outsourcing in US manufacturing, 1958–2001

Note: “Broad” is the percentage of intermediate inputs that are imported. “Narrow” is only the percentage of intermediate inputs imported from the same (2-digit SIC code) industry.

Source: Bivens (2003).

shipped to another for assembly and then shipped to a third location for sale as a final good. I will refer to this as “global production sharing.”⁴

Is there evidence that heightened global production sharing constitutes a distinctly new era of globalized production? Figure 1.2 shows that US international outsourcing took off in the 1980s, and has continued to increase since, reaching significant levels of imported input use of above 20 per cent. Figure 1.3 shows the upward trend in the import of inputs in a variety of manufacturing industries in the major industrialized countries.

The classic examples of the global production sharing are Ford’s “world car,” with components produced in over 14 countries and assembly performed in another three or four locations, or Nike’s shoe production, in

Country	1974	1984	1993
All manufacturing industries			
Canada	15.9	14.4	20.2
Japan	8.2	7.3	4.1
United Kingdom	13.4	19.0	21.6
United States	4.1	6.2	8.2
Chemical and allied products			
Canada	9.0	8.8	15.1
Japan	5.2	4.8	2.6
United Kingdom	13.1	20.6	22.5
United States	3.0	4.5	6.3
Industrial machinery (non-electrical)			
Canada	17.7	21.9	26.6
Japan	2.1	1.9	1.8
United Kingdom	16.1	24.9	31.3
United States	4.1	7.2	11.0
Electrical equipment and machinery			
Canada	13.2	17.1	30.9
Japan	3.1	3.4	2.9
United Kingdom	14.9	23.6	34.6
United States	4.5	6.7	11.6
Transportation equipment			
Canada	29.1	37.0	49.7
Japan	1.8	2.4	2.8
United Kingdom	14.3	25.0	32.2
United States	6.4	10.7	15.7

Figure 1.3 Imported inputs as a share of total intermediate inputs, Canada, Japan, United Kingdom, and United States, selected years and sectors

Source: Campa and Goldberg (1997).

which the American parent company employs 50 times more workers in Asia than it does in the United States. But the phenomenon has now spread to many manufacturing and service sectors, including finance and information technology. A description of Barbie Doll production and outsourcing gives a sense of the spread of the phenomenon to even low-value-added operations:

The raw materials for the doll (plastic and hair) are obtained from Taiwan and Japan. Assembly used to be done in those countries, as well as the Philippines, but it has now migrated to lower-cost locations in Indonesia, Malaysia, and China. The molds themselves come from the United States, as do additional paints used in decorating the dolls. Other than labor, China supplies only the cotton cloth used for dresses. Of the \$2 export value for the dolls when they leave Hong Kong for the United States, about 35 cents covers Chinese labor, 65 cents covers the cost of materials, and the remainder covers transportation and overhead, including profits earned in Hong Kong. The dolls sell for about \$10 in the United States, of which Mattel earns at least \$1, and the rest covers transportation, marketing, wholesaling and retailing in the U.S. The majority of value-added is therefore from U.S. activity. The dolls sell worldwide at the rate of two dolls every second, and this product alone accounted for \$1.4 billion in sales for Mattel in 1995.⁵

3 Technological and social (economic) explanations of global production sharing

Gereffi (1994) emphasizes the distinction between buyer-driven and producer-driven global value chains, the distinction depending on the nature of the lead firm in the chain. A producer-driven chain is typical in industries characterized by scale economies, and is often driven by transnational corporations who may outsource production but who keep R&D and final good production within the firm. Automobiles, computers, and aircraft are examples of this. Buyer-driven commodity chains occur mainly in consumer goods such as apparel, footwear, and toys. In this case the global commodity chain is driven by large retailers (e.g. Wal-Mart, The Gap), that is, firms that do no manufacturing themselves, but concentrate on design and marketing, subcontracting the actual production of the good.

Whether the driver is a producer or a buyer, the motivation for global production sharing is normally the search for reduced costs or increased flexibility. Cost reduction can come from lower labor compensation or reduced taxes. Flexibility may increase with the use of short-term supply contracts or by using a non-unionized or unregulated labor force. When the cost of international communication and transportation fall, the return on outsourcing rises and global production sharing will increase. Such a trend in costs would

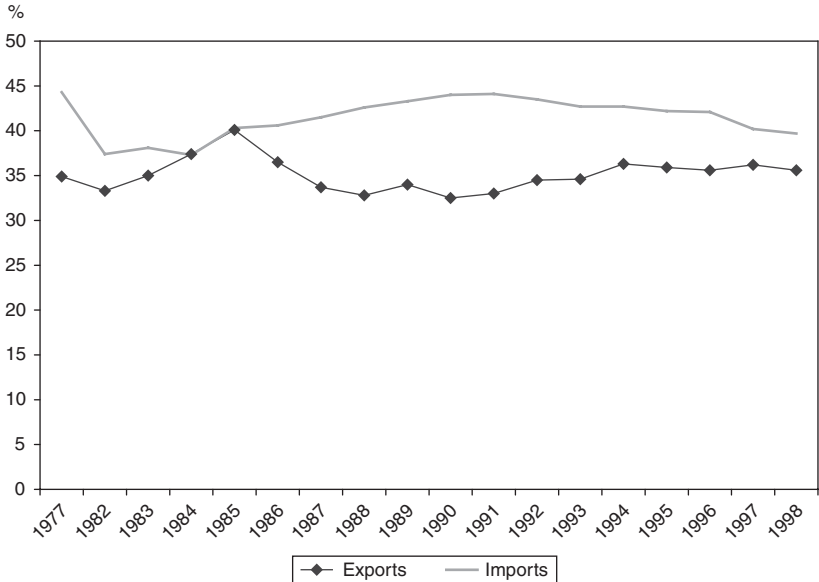


Figure 1.4 Intra-firm trade as a percentage of total trade: United States, 1977–98

provide a technological explanation for the rise in global production sharing, and there is ample evidence that transportation and communication costs have fallen significantly in the past 20 years.⁶

Because of the simultaneous expansion of the activities of transnational corporations (foreign direct investment in Figure 1.1) and growth in trade in intermediate inputs (Figures 1.2 and 1.3), many analysts assume that the growth in the world trade share is the result of a growth in intra-firm trade, that is international trade within a single transnational company. Surprisingly, the share of trade that is intra-firm has been relatively constant for the past 25 years. Figure 1.4 shows that US intra-firm trade as a share of total US exports and imports for the period 1977–98 has been remarkably flat. A similar pattern is found in the intra-firm trade from Japan and Sweden, the only two other countries for whom reliable intra-firm trade data exist.⁷ With outsourcing increasing and intra-firm trade constant, the rise in the share of trade in intermediates must be the result of arm’s-length transactions, that is, international subcontracting outside the confines of the transnational corporation.

Why should arm’s-length outsourcing be of increasing importance in a world where transnational corporations play such a large role? Here we must turn the theory of foreign direct investment on its head. Hymer (1976), and others, argued that the transnational firm is a nonmarket institution in the

Coaseian sense that the internal operations of the firm are not market processes. Use of such nonmarket processes reflects their apparent superiority, perhaps because of the transactions cost savings they bring compared to market transactions. Such savings, or rents, could result from the firm's intangible assets related to technology, management, or marketing. While the internalization of international operations through foreign investment in this sense constitutes a market failure, the protection of such knowledge assets is widely recognized as the prime reason for firms to invest abroad rather than serve foreign markets in other ways, such as exports.⁸

If intra-firm trade is the result of firm internalization strategies, then the observed rise in non-arm's-length subcontracting should be explained by *externalization*. That is, the expected relative return of arm's-length subcontracting (as compared to foreign direct investment) must be rising. Why should cost reductions be increasingly prevalent externally rather than within firms? Langlois (2003) attributes this decline of the multi-unit, vertically integrated firm – a reversal of a trend identified by Chandler (1977) as central to the rise of industrial capitalism in the nineteenth century – to the growth in both the breadth and the depth of markets. Langlois writes:

Rather than seeing the continued dominance of multi-unit firms in which managerial control spans a large number of vertical stages, we are seeing a dramatic increase in vertical specialization – a thoroughgoing “de-verticalization” that is affecting the traditional Chandlerian industries as much as the high-tech firms of the late twentieth century. In this respect, the visible hand – understood as managerial coordination of multiple stages of production within a corporate framework – is fading in a ghostly translucence ... Costs of coordinating through markets may be high simply because existing markets – or, more correctly, existing market-supporting institutions – are inadequate to the needs of new technology and of new profit opportunities. But when markets are given time and a larger extent, they tend to “catch up,” and it starts to pay to delegate more and more activities rather than to direct them administratively within a corporate structure. (Langlois 2003, pp. 352–3)

Certainly as productive capacity and quality have increased in many developing countries, the gains from flexibility that arm's-length relations create have risen. Lead firms can set relatively short-term subcontracts, allowing the ability to respond more rapidly to changes in final good demand conditions or changes on the supply side, on issues ranging from product design, to wages, exchange rates, or government tax or regulatory policies in the countries with suppliers or potential suppliers. External outsourcing can itself stimulate competition among suppliers, reducing costs beyond what could be accomplished within the realm of internal operations. This competitive pressure on suppliers can translate into pressure on labor costs or on labor standards.⁹

The end result is an asymmetry of market structure along global value chains. Entry barriers (often the result of brand marketing, but perhaps also due to proprietary technology or scale) allow the persistence of oligopolistic market structure at the top of the chain. Outsourcing promotes a competitive structure at the bottom. The process may be endogenous to the strategy of lead firms.¹⁰

The endogenous asymmetry of market structure in global commodity chains begins to explain the two, seemingly incongruous, tendencies that can be discerned in the evolving structure of global industry. On one side, and despite the popular association of globalization with more competition, there is a tendency toward greater concentration of industry globally (Nolan, 2003). The global wave of merger and acquisition activity constituted a consolidation of the oligopoly position of lead firms who, in the process, focused their efforts on “core competence” and outsourced other activities. On the other side, there is evidence that more and more developing countries are entering manufacturing industries at the low end of the value chain, seeming to introduce more, not less, competition at the world level (Mayer *et al.*, 2001). Certainly most of the world’s largest firms are based in developed countries. Just 5 percent of *Fortune* 500 Companies and 3 percent of *Financial Times* 500 companies were based in low-income countries. Of the 27 developing country firms on the *Financial Times* 500 list, 24 were from Asia and only 3 were from Latin America. Of the 100 largest nonfinancial multinational enterprises in the world in 2000 (ranked by foreign assets), just five are from developing countries and two of these are petroleum producers (Petroleos Venezuela and Petronas of Malaysia).¹¹

The evidence of greater dispersion of production across a wide variety of generally low value added manufacturing sectors is consistent with a number of recent econometric studies of competition in developing countries. Roberts and Tybout (1996) present a series of country studies that focus on entry and exit conditions. Summarizing evidence on Chile, Columbia, Mexico, Morocco, and Turkey for the 1970s and 1980s, they write that “... [E]ntry and exit rates are substantial ... Despite the popular perception that entry and the associated competitive pressures are relatively limited in developing countries, these entry figures *exceed* the comparable figures for industrial countries.”¹² Another study focuses on profitability and its persistence in seven developing countries – Brazil, India, Jordan, Korea, Malaysia, Mexico, and Zimbabwe – and compare it to estimates for industrialized countries. The authors find that “Surprisingly, both short- and long-term persistence of profitability for developing countries are found to be lower than those for advanced countries.” (Glen *et al.*, 2002, p. 1). Finally, a study from the labor market perspective also confirms the competitive picture in developing countries. Brainard and Riker (1997) estimate the wage elasticity of labor demand across affiliates of US transnational corporations. Low-wage affiliates have little effect on employment in the home operation, but a large and significant effect on employment in other low-wage affiliates of the same firm.¹³

4 Upgrading in global commodity chains and consequences for labor

The asymmetry of product market structures in global value chains reintroduces the “ruinous competition” from which capitalism escaped in the late 1800s with the rise of oligopoly in many industries, and has immediate implications for value added along global value chains.¹⁴ The asymmetry (endogenous or not) may lie behind the current situation in which developing countries have greatly expanded their share of global manufacturers exports while seeing their share of global value added in manufacturing rise by proportionally much less. This is a key issue, since the value added from export oriented production is an important source of income for reinvestment and consumption demand in these countries, both crucial elements of any successful industrial upgrading process. Competitive product markets, in theory, generate no economic profit and lower wages. Competitive firms have no rents to share with employees, and can survive only if wages are kept at a minimum. The increased use of sweatshop labor today, which has come with the rise in arm’s-length outsourcing, can be seen as tied to global production sharing.¹⁵

While the labor market effects of trade liberalization have been the subject of much research and heated debate among economists for many years, the effects of globalized production and in particular outsourcing have only begun to be studied. The irony is that precisely at the moment when computerization has led to a revolution in the mechanization of production, the ability to outsource has reasserted the importance of the labor component of production costs. Instead of becoming inconsequential as the result of technological change, labor costs are now an important determinant in the production location decision as firms increasingly slice up the value chain. According to Paul Krugman (1995: 336–7):

It is often said that labor costs are now such a low share of total costs that low wages cannot be a significant competitive advantage. But when business people say this, they ... mean that because of the growing vertical disintegration of industry the value added by a given manufacturing facility is likely to be only a small fraction of costs, which are denominated by the cost of intermediate inputs. But this vertical disintegration, or slicing up of the value chain, creates a greater, not a smaller opportunity to relocate production to low-wage locations.

Why have trade and investment liberalization been associated with rising wage inequality in developing countries, contrary to the predictions of the Stolper–Samuelson theorem? Trade economists in the mid-1990s dubbed the phenomenon “skill-enhancing trade,” according to which, increasingly, specialization in low-skill intensive sectors still constituted an increase in the

demand for skills.¹⁶ But skill-enhancing trade was more of an *ex-post* rationale than a full-blown theory, and the essays in this book show that there is much more involved than changes in technology induced by trade and investment liberalization. Other factors are also at work, including a mix between domestic and foreign firms creating variation in the overall skill demand, a weakening of labor laws and the reinforcement of existing labor market segmentation, locational disadvantages, domestic political tensions that mediate global pressures, and even moral codes. The (now) standard econometric finding in the literature on the positive relation between trade liberalization and relative (skilled/unskilled) wages may be spurious given all the other factors at work.

While I have focused on the degree of competition in global value chains, the chapters that follow address the question of industrial upgrading from the perspective of particular nations and regions. In Chapter 2, UNCTAD economists Yilmaz Akyuz, Richard Kozul-Wright, and Joerg Mayer give a broad overview of developing countries' patterns of investment, export growth, and industrialization, revealing stark differences in the East Asian and Latin American experiences. First-tier East Asian countries – Korea, Taiwan, and Hong Kong – have reached levels of industrialization similar to those in the wealthiest countries, and now maintain their level of industrial activity amidst healthy economic growth. Second-tier East Asian economies – Indonesia, Malaysia, Philippines, and Thailand – continue to increase the share of manufacturing in output while manufacturing productivity growth rises. Latin America seems to have experienced deindustrialization “prematurely,” that is, the manufacturing share has stopped growing relative to the rest of the economy while per capita incomes are much lower than those in the advanced industrialized countries. Sub-saharan Africa has also begun to deindustrialize, but in the context of declining output growth.

Akyuz, Kozul-Wright, and Mayer emphasize the positive feedbacks among capital investment, exports, and growth. Again, it is Indonesia, Malaysia, and Thailand that have been most impressive in their ability to continue to industrialize and raise manufactured exports while investment also rises. Mexico, on the other hand, has greatly expanded manufactured exports, but had a decline in manufacturing value added in GDP – perhaps the starkest case of the “low-level equilibrium trap” referred to above. In both Mexico and Brazil, the opening to foreign direct investment led to restructuring, toward more capital-intensive production, but diminished investment in more dynamic sectors intensive in R&D and engineering. Thus in the 1980s and 1990s, sectors associated with industrial upgrading grew in Korea, Malaysia, Taiwan, and Turkey, and they stagnated in Brazil, Mexico, Chile, and Argentina. The authors also identify a profit squeeze for many developing country exporters in the 1990s, consistent with the competitive pressures associated with asymmetric market structures in global value chains. This occurred in part because much developing country export

growth in the 1990s took place while productivity was stagnant. Thus the authors identify a high- and low-road to manufacturing expansion, the former associated with rising productivity, the latter with stagnant or falling productivity, in which export growth was driven by wage suppression or currency depreciation. The high-road was associated with “upgrading” to more medium- and high-tech exports. The low-road was associated more with expansion of assembly operations in consumer electronics and even automobiles.

The next two chapters fill out the picture painted in Chapter 2, with detailed case studies from Latin America. Mexico, as seen in Jennifer Bair and Gary Gereffi’s example of the North American apparel industry in Chapter 3, seems to have required extensive subcontracting relations with American designers and retailers before moving into more sophisticated areas of production, ultimately to so-called “full package” production rather than the subcontracted role of cloth cutter it had traditionally played for American firms. Bair and Gereffi focus on the regional dynamics resulting from the North American Free Trade Agreement (NAFTA), and contrast the Mexican experience with that of countries in the Caribbean Basin to show the impact of distinct trade policies on export-oriented development. They argue that NAFTA is creating upgrading opportunities for some Mexican firms to move from the low value-added, export-oriented assembly (or maquila) model to full-package production. But upgrading in the apparel sector has been associated with an uneven development pattern across North America. Bair and Gereffi explore the unevenness of upgrading dynamics through a comparison of two blue jeans manufacturing clusters in the United States and Mexico: El Paso and Torreon. The comparison shows the importance of local, national, and regional institutional contexts in shaping inter-firm networks and their development impact.

In Chapter 4, Janine Berg brings a detailed analysis of the Chilean cosmetics industry to bear on the general debate over the causes of rising wage inequality in developing countries, and in the process on the question of how difficult industrial upgrading is in an open economic environment. The Chilean cosmetics industry was closed to trade under the period of import-substitution industrialization. The sector began to be liberalized in 1974 and has since faced increasing competition, particularly during the 1990s. The increase in foreign competition arising from free trade has had two principal effects depending on whether the firm is a foreign-owned multinational or a domestic, Chilean-owned firm. Multinationals have changed their competitive strategy in Chile, leading to a loss of production jobs, and increased relative demand and wages for skilled workers employed in management and sales. Domestic firms, on the other hand, have responded to the more competitive environment by making investments that expand and upgrade their manufacturing facilities. The technological changes have been low-skilled biased, leading to an increase in the relative employment of

low-skilled workers. Yet the employment increases have not led to concomitant increases in the relative wages of low-skilled workers. Domestic firms have used the weakened labor relations environment to hold down wage increases for low-skilled workers, allowing the firms to continue underpricing the multinationals and retain market share. The case study reveals a complexity in the adjustment process that is not captured in standard models of trade liberalization and wages. In particular, with high levels of unemployment of low-skill workers and a weakening of institutions protecting labor bargaining power, a higher demand for low skills is not inconsistent with reduced wages for low-skill workers.

In Chapter 5, the concluding essay of Part I, Radhika Balakrishnan and Asad Sayeed give an overview of theoretical debates over the “make or buy” decision by lead firms in global value chains. They propose a “push” and “pull” explanation for subcontracting outside the firm, both linked to cost competition. Firms are pushed into subcontracting when cost reductions are possible through lower wages alone. The pull factor occurs when competition also requires productivity enhancement, perhaps through greater flexibility or with the introduction of a new production technique.

The *consequences* of industrial upgrading, even when it is achieved, are also not easy to generalize. Part II contains three essays on the skewed effects of globalization across groups of people and across space. In Chapter 6, Matthew Slaughter finds that inward foreign direct investment from the United States (as measured by the TNC share of total employment) has been associated with a rise in the demand for more skilled labor. Such skill-upgrading associated with US foreign direct investment is found for all countries, but the effect is greater for developing countries. This is a broad and important finding, consistent with the results of Feenstra and Hanson’s (1997) study of outsourcing and wages in Mexico’s maquiladoras. Slaughter emphasizes that multinational firms affect both the demand for and supply of skills in host-country labor markets. On the demand side, inward foreign direct investment can stimulate demand for more-skilled workers in host countries through several channels. To date, most empirical evidence indicates that these channels work mainly within multinationals themselves, rather than through knowledge spillovers to domestic firms. On the supply side, the question of how inward foreign direct investment influences the development of human capital is much less clear, with possible links at both the micro- and macro-levels. This chapter offers some new empirical evidence on the links between inward foreign direct investment and within-industry skill upgrading for a country–industry–year panel spanning both developed and developing countries. The main empirical finding is a robustly positive correlation between skill upgrading and the presence of affiliates of US multinationals, with this correlation even stronger among the subsample of developing countries. This correlation is consistent with inward foreign direct investment stimulating skill upgrading in these

developing countries. Slaughter concludes by putting the results in context, showing that the bias in the multinational enterprise demand for skills has a double edge in that it seems an essential part of the industrial upgrading but also implies rising wage inequality between low- and high-skill workers.

In Chapter 7, Günseli Berik, Yana van der Meulen Rodgers, and Joseph Zveglic explore another type of wage inequality: between men and women workers. They find that trade expansion in Taiwan and Korea has sometimes brought a rise in the gender wage gap, even when they control for all measured labor quality differences. They thus provide another example of the double edge of greater insertion into the global economy. The authors begin by elaborating the main theories of trade and relative wages by gender. The dynamic implications of Gary Becker's theory of discrimination lead one to expect that increased competition from international trade would reduce the incentive for employers to discriminate against women. This effect should be more pronounced in concentrated sectors of the economy, where employers can use excess profits to cover the costs of discrimination. In non-neoclassical theory, wage discrimination is expected to increase with growing trade in a context of employment segregation that limits women's ability to achieve wage gains.

To test these competing theories, Berik, van der Meulen, and Zveglic study the impact of competition from international trade on the gender wage gap in Taiwan and South Korea between 1980 and 1999. They include controls for differences in market structure across industries in order to isolate the effect of competition from international trade. The estimation results are not consistent with Becker's theory: greater international competition in concentrated sectors is associated with larger wage gaps between men and women. In particular, the authors find that rising import competition in the case of Taiwan is strongly associated with rising discrimination against women workers in manufacturing, while a decline in export competition in Korea is weakly associated with an improvement in women's relative wages. They conclude with a discussion of the policy options facing countries seeking more gender fairness in the globalization process. The options relate mainly to the development of new, and implementation of existing, anti-discrimination legislation, showing once again the importance of strong democratic domestic political processes for the fair management of globalization.

In Chapter 8, Stephen Gelb and Anthony Black examine the limits to the globalization of production and obstacles to it, by focusing on foreign direct investment in South Africa. The paper first provides a brief historical background on South Africa's historical industrialization pattern, emphasizing the emergence of "mid-tech" industries most inward-focused, low rates of labor absorption resulting in very high levels of unemployment and extreme inequality (reinforced by *apartheid*) and the contribution of market- and resource-seeking foreign direct investment to industrial development. The authors present results from a recent firm-level survey of foreign direct

investors who entered South Africa for the first time after 1990. The survey results confirm macro-level data suggesting disappointingly low inflows of foreign direct investment, suggesting that South Africa is not deeply integrated into global production chains and networks, notwithstanding the relatively advanced level of industrial development and the presence of large pools of unemployed (and unskilled) labor. Gelb and Black then turn to look more closely at three industrial sectors – autos (a producer-led chain), clothing (a buyer-led chain), and financial services – to examine some of the reasons for the low degree of globalized production. In each of these sectors, production *has* been globalized to some degree, but has encountered obstacles to further advancement. All three sectoral cases confirm the survey results that globalization of production in South Africa has progressed to a limited degree only, driven in large measure by the contribution of foreign investors, while domestic firms still find it difficult to orient toward exports and to insert themselves into global production chains and networks.

What is the role for policy in molding a globalization process that facilitates upgrading and especially improved employment and pay conditions for the developing world? We began this introduction with a laundry list of proposals from the anti-globalization movement. The final two chapters identify two very different challenges to the effective regulation of globalized production. Elissa Braunstein and Gerald Epstein (Chapter 9) consider the possibility that a large domestic market can lead to more effective use of inward capital flows. In particular, the authors consider the nature of China's bargaining power in relation to transnational corporations and foreign direct investment. They explore the questions of how China has used that power, what leakages have occurred as the government has tried to exploit its bargaining power, and what have been the impacts of the bargaining process on the Chinese population. The Chinese central government closely managed the process of foreign investment so that it would focus on exports rather than the domestic Chinese market. At the same time, the decentralized nature of some aspects of the policy made it difficult to manage all components of the foreign direct investment process. Braunstein and Epstein then present new empirical results assessing the impact of foreign direct investment on employment growth and wage growth. The regression analysis shows that foreign direct investment's impact has been positive but rather limited in size. Significantly, they find that foreign direct investment has crowded out domestic investment. The authors also find the impact of foreign direct investment on local tax revenue to be negative, suggesting that, at least at the provincial level, the social benefits of foreign direct investment have been dissipated. The findings of this chapter call into question the desirability of making significant concessions to attract foreign investment in China. This caution applies even more strongly to other countries with much less bargaining power than China, which is to say, virtually every other country in the developing world.

Michael Piore's discussion of the production process in the relatively low-tech woodworking sector in Ciudad Hidalgo in northern Mexico (Chapter 10) puts the issue of welfare and industrial upgrading in a broader context. Industrial upgrading, that is a shift to a new, more mechanized production process is key to raising labor standards. Such standards develop endogenously as part of the transformation of the production process, its labor relations, and the social norms that result. When firms move to more mechanized production, labor standards not only tend to improve, they also become easier to enforce. Imposing higher labor standards in a production environment in which such standards are unrelated to local conditions is not fruitful. Piore gives the example of the child labor regulations. Children run regularly about the woodshop. "Much of what is going on, in fact," he remarks, "was not child *labor* but child *care*." Labor standards only make sense if the production system itself is transformed in a way that is compatible, both technically and socially, with those standards.

Why has the surge in global trade and foreign direct investment not resulted in a more significant boost in employment, wages, working conditions, technological change, industrial diversification, and export revenue for most developing countries? The studies in this book provide a variety of answers, giving a rich sense of the reasons that industrial upgrading is difficult and not necessarily welfare-improving for labor, certainly not for all labor. Overall, the essays show that globalized production, far from being a panacea for developing countries, creates a new set of challenges to economic development – for entrepreneurs, workers, governments, and international organizations. These new challenges, I have argued, result not from the extent of globalization *per se*, but from structural changes in the sphere of production and policy. The challenges posed by globalization for the process of economic development vary greatly from place to place, and thus no single policy should be adopted in all countries or even in different regions of the same country. As the "architects" of international economic policy turn their attention away from finance and increasingly toward global production, this lesson should loom large in their deliberations.

Notes

1. I am grateful to Yana van der Meulen Rodgers and Günseli Berik for helpful comments on the first draft of this chapter.
2. See Amsden (1989).
3. See Amsden (2001) and Akyuz *et al.* (1998).
4. Synonyms abound, including "the international disintegration of production" (Feenstra, 1998), "fragmentation," (Arndt and Kierzkowski, 2001) "the slicing up of the value chain," (Krugman, 1995) "global production networks" (Harrison, 1994) and the "global commodity or value chain" (Gereffi, 1994).
5. Feenstra (1998).
6. See Arndt and Kierzkowski (2001).

7. See UNCTAD (2001).
8. See, for example, Dunning (1988).
9. Similarly, arm's-length relations with suppliers reduces the buyer firm's responsibility for social standards in the supplying firm. A company like Nike can provide account for labor practices in Nike-owned production facilities, but is much less likely to be held accountable if the supplier is not owned by Nike.
10. See Milberg (2003) for a development of the notion of endogenous asymmetry of market structure.
11. *Fortune* (2000), *Financial Times* (2000), and UNCTAD (2002).
12. Roberts and Tybout (1996), p. 191.
13. Brainard and Riker (1997).
14. Shapiro (2002).
15. In this view, sweatshops are best understood as a historical or developmental phenomenon, rather than an ethical or moral category. See Piore (2000) and Chapter 10 in this volume.
16. Feenstra and Hanson (1997).

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